June 29, 1971 N. T. KUYPERS ET AL 3,588,925

BATHTUB AND WALL ENCLOSURE

Filed Nov. 21, 1968 2 Sheets-Sheet 1

FIG. 1

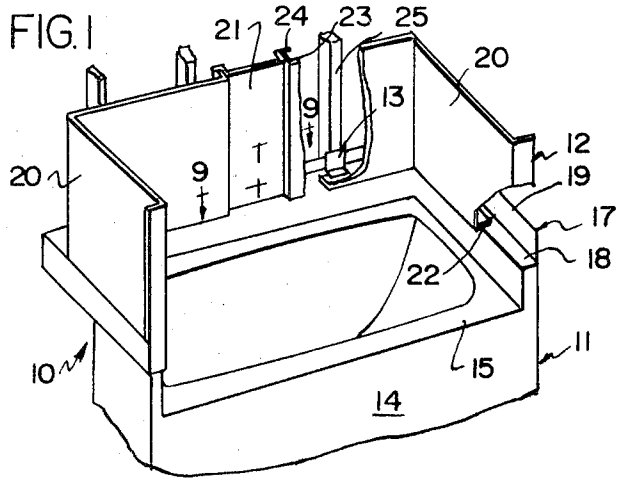
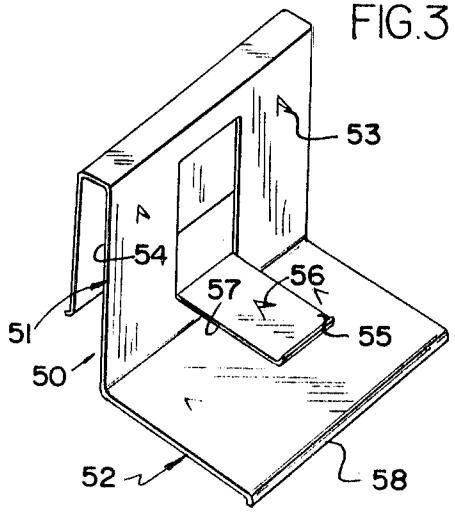


FIG. 3



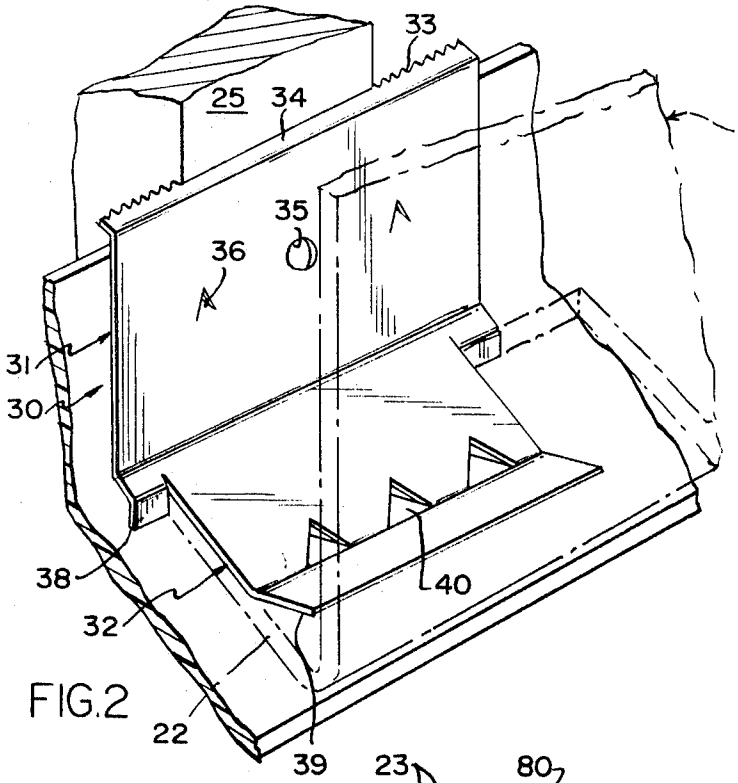
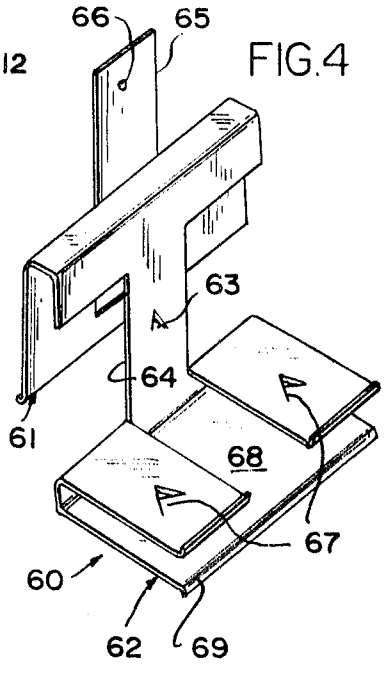


FIG. 2

FIG. 4



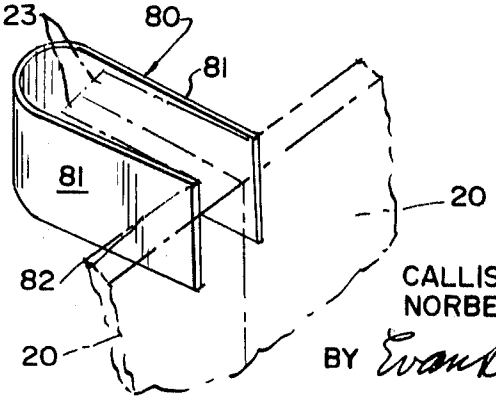


FIG. 5

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BATHTUB AND WALL ENCLOSURE

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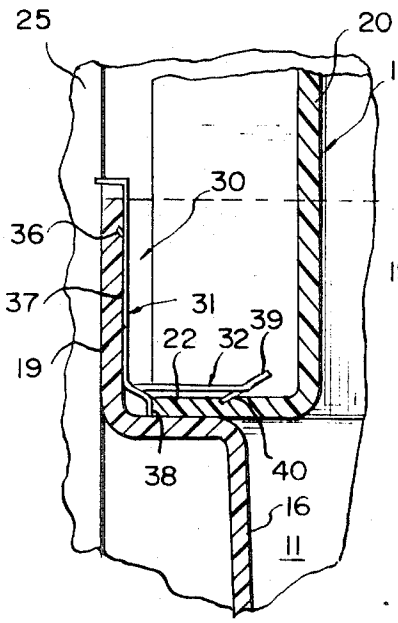


FIG. 6

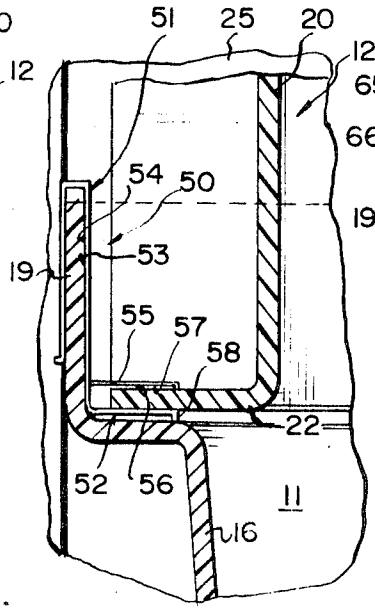


FIG. 7

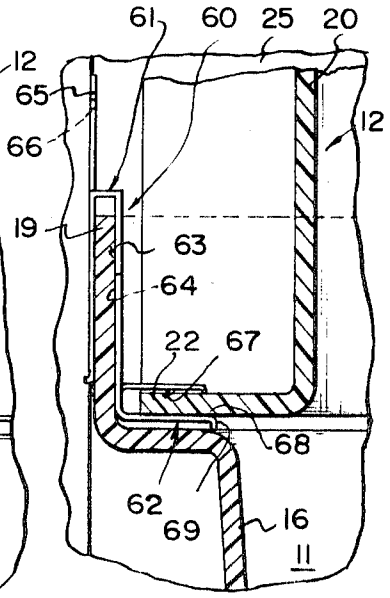


FIG. 8

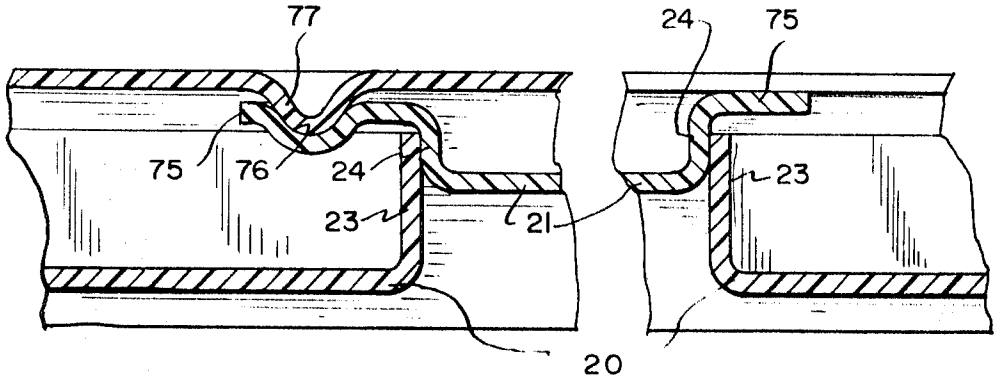


FIG. 9

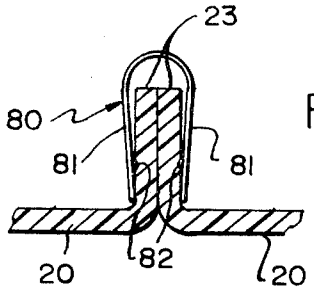


FIG. 10

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BATHTUB AND WALL ENCLOSURE

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Int. Cl. A47k 3/14, 3/00

U.S. Cl. 4—173 2 Claims

ABSTRACT OF THE DISCLOSURE

A bathtub and three piece tub enclosure are disclosed herein and are generally of the type that are supported on the floor and against a wall of a bathroom. The pieces of the enclosure are adapted to be watertight with respect to each other and the enclosure as a whole is assembled on the tub to be watertight with respect to the tub. Also, disclosed herein are means for securing the tub and enclosures together and to secure said tub and enclosure to the wall.

SUMMARY OF THE INVENTION

This invention relates to a floor and wall-supported bathroom tub and wall enclosure apparatus wherein the tub is provided with a vertical wall portion and a flange portion extending outwardly from the vertical wall portion. A tub enclosure assembly is provided in conjunction with the tub and has wall portions terminating at the bottom thereof in a flange adapted for complementally engaging the tub flange to position the wall portion in an inwardly over-hanging relationship with the tub vertical wall portion to shield the tub and enclosure-engaging surface from falling water. The invention further includes means for securing the tub and enclosure together and to secure the tub and enclosures to the wall.

There are numerous types of existing tub and wall enclosure structures which unfortunately have many disadvantages that are totally undesirable. In particular, many such structures are one piece structures which, due to the inherent assembled size and configuration thereof, require that the structures be put into a bathroom during the construction of the bathroom rather than permitting installation in the bathroom during remodeling or the like.

In the known types of multi-piece tub and enclosures, and particularly those manufactured from plastic or other non-metal, there is often a problem of maintaining the structural seams watertight to prevent damage to the surrounding wall and floor. One reason for this, among others, is that the pieces are not so constructed so as to tend to prevent penetration of water between the seams thereof. Also there are no adequate assembly clamps or the like to secure the parts of the structures together and to hold the structures securely against the wall and the floor.

It is therefore an object of this invention to provide a floor and wall supported bathroom tub and wall enclosure apparatus, particularly adapted for plastic or other non-metal structures, wherein the apparatus is a multi-piece structure which can be assembled into an already constructed bathroom. However, it is further highly desirable to provide a watertight tub and enclosure construction which would tend to prevent water penetration through the seams thereof. Also, it is desirable to provide adequate clamping and spacing means for assembling the

parts of the structure and holding these parts together with a sealant or adhesive therebetween if desired and into firm contact with the wall and the floor to prevent the seams thereof from leaking.

Other objects, advantages and novel aspects of the invention will become apparent upon consideration of the following detailed description in conjunction with the accompanying drawings wherein:

FIG. 1 is a partial perspective view of the floor and wall supported bathroom tub and wall enclosure apparatus of this invention showing the relative positions of the tub, enclosure and clamping means therefor;

FIG. 2 is a perspective view of a first embodiment of the clamping means;

FIG. 3 is a perspective view of a second embodiment of the clamping means;

FIG. 4 is a perspective view of a third embodiment of the clamping means;

FIG. 5 is a perspective view of another clamping embodiment utilized in assembling adjacent enclosure pieces;

FIG. 6 is a partial sectional view of the first embodiment of the clamping means showing the clamp in position;

FIG. 7 is a partial sectional view of the second embodiment of the clamp showing the clamp in position;

FIG. 8 is a partial sectional view of the third embodiment of the clamp showing the clamp in position;

FIG. 9 is a partial sectional view taken along line **9—9** of FIG. 1 showing the configuration of the overlapping and adjacent portions of the tub enclosure pieces and the interlocking embossment and recess positioning portions thereof; and

FIG. 10 is a partial sectional view showing the configuration of the clamp shown in FIG. 5.

A floor and wall supported bathroom tub and wall enclosure apparatus generally represented by the numeral **10** is illustrated in FIG. 1 for the purpose of describing the invention. The tub and enclosure apparatus **10** includes generally, among other things, a tub **11** and enclosure assembly **12** and clamping means **13**. The tub **11** and the enclosure assembly **12** are preferably manufactured from plastic, fiber glass or similar non-metal material.

The tub **11** is provided with a front skirt **14** and a horizontal top surface **15**. A vertical wall portion **16** extends upwardly from the surface **15** and terminates in a tub flange **17**. The tub flange **17** has a first horizontal tub flange portion **18** and a second vertical flange portion **19**.

The tub enclosure assembly **10** shown includes two right angle side pieces **20** and a back center piece **21**. The side and back pieces **20** and **21** are provided with a bottom flange **22** and the adjacent portions of the side pieces and the back piece are provided with complemental flanges **23** and **24** respectively (FIGS. 1 and 9). It should be noted that the bottom flange **22** of the side and back pieces **20** and **21** of the tub enclosure **10** are adapted to complementally engage the first horizontal tub flange portion **18**. The tub vertical flange portion **19** is adapted to be positioned against a wall **25** shown as a series of studs (FIG. 1). The clamp **13** serves the dual purpose of securing the vertical tub flange portion **19** to the wall **25** and to receive and retain as well as position the bottom flange **22** of the tub enclosure assembly **12** with respect to the tub flange **17**.

A first embodiment of the clamp **13** is illustrated generally by the numeral **30** (FIGS. 2 and 6) and includes

generally, a securing portion 31 and an enclosure positioning and retaining portion 32. The securing portion 31 is a plate structure having a series of teeth 33 on an edge 34 perpendicular to the plate 31. An aperture 35 is provided through the plate 31 to receive a fastener such as a nail or screw (not shown) to retain the securing portion 31 of the clamp 30 to the wall 25. The plate 31 of the securing portion is provided with barbs 36 protruding from the back or friction side 37 of the securing portion. The barbs 36 are adapted to engage the second vertical flange portion 19 of the tub 11 to retain the securing portion 31 against upward movement with respect thereto.

The positioning and retaining portion 32 is provided with spacing and positioning legs 38 depending therefrom and into engagement with the first flange portion 18 of the tub 11 when the securing portion 31 of the clamp 30 is in position (FIGS. 2 and 6). The spacing and positioning legs 38 provide a limit for the entry of the enclosure bottom flange 22 between the positioning and retaining portion 32 and the first flange tub portion 18.

The positioning and retaining portion 32 is also provided with a lip 39 to guide the entry of the enclosure flange portion 22 and a friction surface illustrated as barbs 40 adapted to frictionally engage the enclosure flange portion 22 to retain same in position between the positioning and retaining portion 32 and the tub flange portion 18 as well as against the spacing and positioning legs 38.

A second embodiment of the clamp 13 generally designated by the numeral 50 (FIGS. 3 and 7) includes generally a securing portion 51 and a positioning and retention portion 52. The securing portion 51 is a U-shaped channel having barbs 53 on an inner friction surface 54 thereof adapted to engage the second tub flange 19 when the securing portion 51 is positioned thereover to retain the clamp 50 against upward movement with respect to the tub 11.

A friction tab 55 is severed from the securing portion 51 and is bent through 90° to be perpendicular therewith. The tab 55 is provided with barbs 56 on a friction bottom surface 57 thereof adjacent the positioning and retention portion 52. The positioning and retention portion 52 is provided with a spacing lip 58 along an edge thereof to provide an adhesive or water sealant space between the enclosure flange portion 22 from the tub first flange portion 18 when the tub enclosure flange 22 is inserted between the friction tab 55 and the positioning and retention portion 52. The tub enclosure flange 22 is retained by the friction tab 56 and the retention and positioning portion 52 against movement away from the securing portion 51 of the clamp 50 to retain the tub enclosure 12 in position with respect to the tub 11.

A third embodiment of the clamp 13 generally designated by the numeral 60 (FIGS. 4 and 8) is provided generally with, among other things, a securing portion 61 and a positioning and retention portion 62. The securing portion 61 is a modified U-shaped channel structure having one or more barbs 63 or other friction structure on an inner surface 64 thereof adapted to engage the second flange tub portion 19 to retain the clamp 60 against upward movement with respect to the tub 11.

The securing portion 61 is also provided with a tab 65 in the plane of one leg thereof which is provided with an aperture 66 to receive a fastener such as a nail or a screw (not shown) to retain the clamp 60 to the wall 25.

The positioning and retention portion 62 of the clamp 60 is also a modified U-shaped channel having upper friction tabs 67 in one leg thereof which are exposed to a tub enclosure bottom flange 22 inserted between the upper tabs 67 and a plate 68 providing the other leg of the U-shaped portion of the positioning and retention portion 62. This bottom plate portion 68 of the positioning and retention portion of the clamp 60 is provided with a lip 69 for positioning the tub enclosure bottom flange 22 from the tub first flange portion 18 to facilitate an adhesive or water sealant space.

The center tub enclosure panel 21 may be connected to the side tub enclosure pieces by complementing flanges 23 and 24 (FIG. 9). The center enclosure portion 21 disclosed herein is provided with a vertical flange extension 75 having a recess 76 adjacent the bottom thereof and adapted to receive an embossment 77 in the tub second flange portion 19 to key the tub enclosure center portion 21 horizontally with respect to the tub 11. In this arrangement (FIGS. 1 and 9) the tub enclosure side pieces 20 are provided with the flanges 23 adapted to engage the center section flanges 24. However, it may be desirable for spacing or design purposes to secure the tub enclosure side sections 20 together without the center portion 21 (FIGS. 5 and 10). In that case, the present invention contemplates, among other things, a resilient U-shaped clamp 80 having legs 81 thereof biased inwardly together and toward adjacently placed flanges 23 of the side pieces 20 to be assembled when the U-shaped clamp 80 is positioned over the flanges 23. The clamp 80 is provided with barbs 82 or other friction structures on the inner faces thereof to retain the clamp 80 in position and to secure the flanges 23 of the enclosure sides 20 together against movement.

The apparatus of this invention is assembled by the general steps of placing the tub 11 in position, securing the clamps 10 and installing the tub enclosure portion 12. The tub 11 is placed in position on the floor and against the wall 25 so that the clamps 10 can be applied thereto. The clamp 10 is applied with the friction surface or surfaces thereof in engagement with the second vertical tub flange portion 19 secured to the wall 25 and the tub flange portion 19. The tub enclosure portions 20 and 21 are then positioned with the bottom flange 23 thereof inserted adjacent the positioning and retaining portions of the clamp 10 and on the tub first flange portion 18 to be held therebetween by the friction surfaces of the positioning and retaining portions of the clamps 10.

The tub enclosure portion 12 is positioned with respect to the tub vertical wall portion 22 by the clamps 10 or by the configuration of the tub flange 17 whereby the enclosure walls 20 will be positioned in an overhanging relationship with respect to the vertical wall portion of the tub. In all cases, the engaging surfaces of the apparatus of this invention can have a water sealant and/or adhesive applied therebetween to make the apparatus watertight and to retain its assembly. Further, although the tub and the enclosure are preferably manufactured of plastic or the like, metal could be used and the friction surfaces or bars of the clamps could be modified to appropriately frictionally react with the tub and enclosure.

It is to be understood that the invention is not to be limited to the specific constructions and arrangements shown and described, as it will be understood to those skilled in the art that changes may be made without departing from the principles of the invention.

What is claimed is:

1. A bathroom tub and wall enclosure supported by a building floor and wall comprising:

a tub having a horizontal flange portion and a vertical flange portion extending upwardly from the horizontal flange portion and joined to the terminus thereof;

said vertical flange portion being adapted to be positioned against said building wall;

a pair of corner vertical enclosure walls having horizontal flanges extending away from the tub side of the major surfaces thereof and adapted to be positioned on said horizontal flange portion of said tub;

means for clamping each of said enclosure walls to said tub and for clamping said enclosure walls to each other;

said first clamping means comprising a clamp having a substantially flat portion for abutting the front of the vertical flange portion of said tub and a horizontal portion spaced from the horizontal flange portion for frictionally receiving the horizontal flange of said enclosure walls.

2. An enclosure as recited in claim **1** which said horizontal portion of said first clamping means has barbs for frictionally engaging the horizontal flanges of said enclosure walls.

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