

June 4, 1968

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3,386,567

SHIPPING SUPPORT STRUCTURE FOR BATHTUBS AND BLANKS THEREFOR

Filed May 29, 1967

3 Sheets-Sheet 1

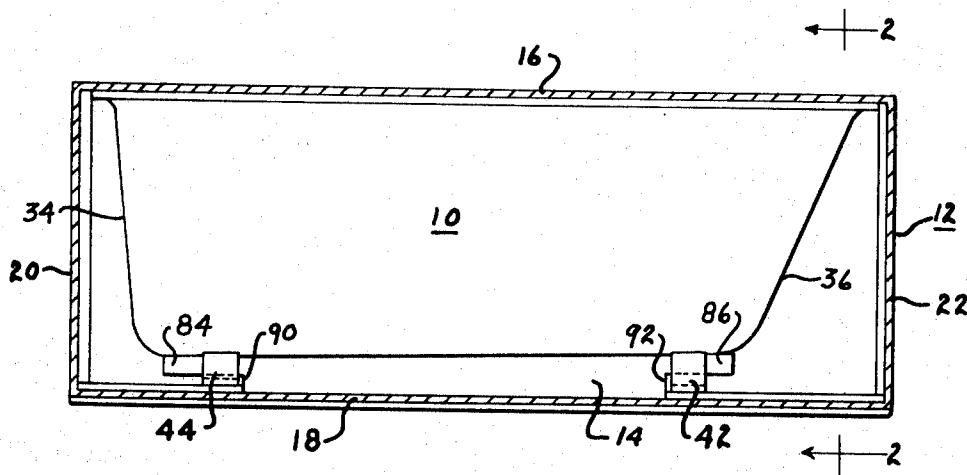


FIG. 1

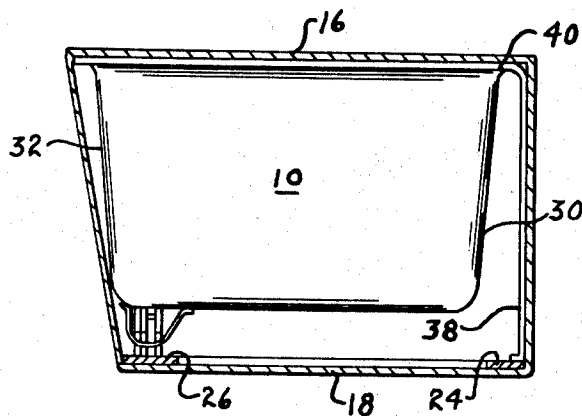


FIG. 2

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3 Sheets-Sheet 2

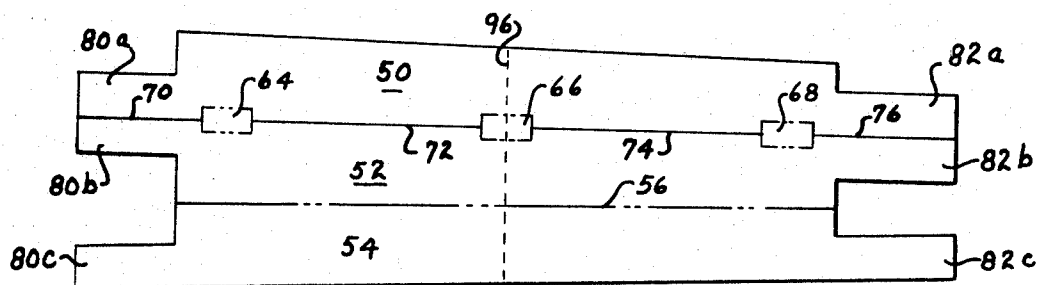


FIG. 3

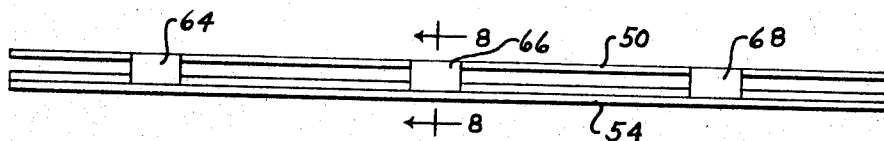


FIG. 5

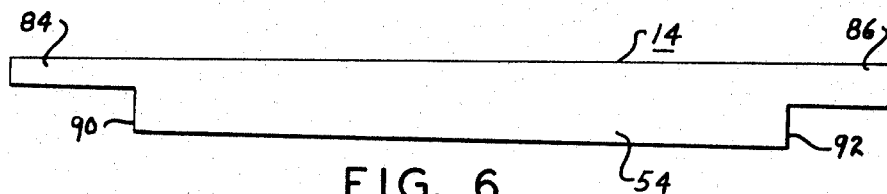


FIG. 6

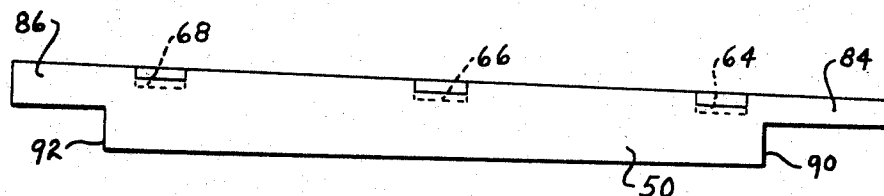


FIG. 7

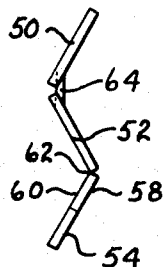


FIG. 4

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3 Sheets-Sheet 3

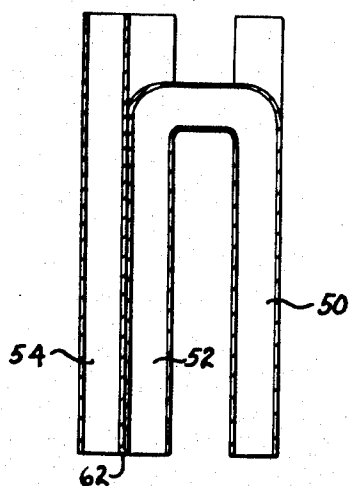


FIG. 8

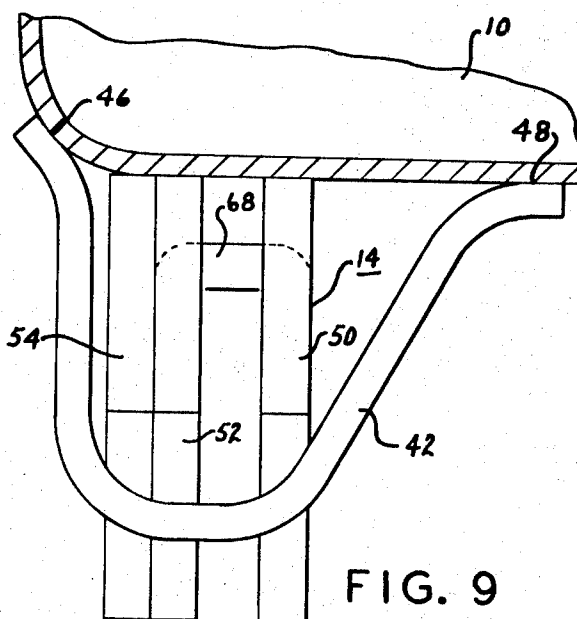


FIG. 9

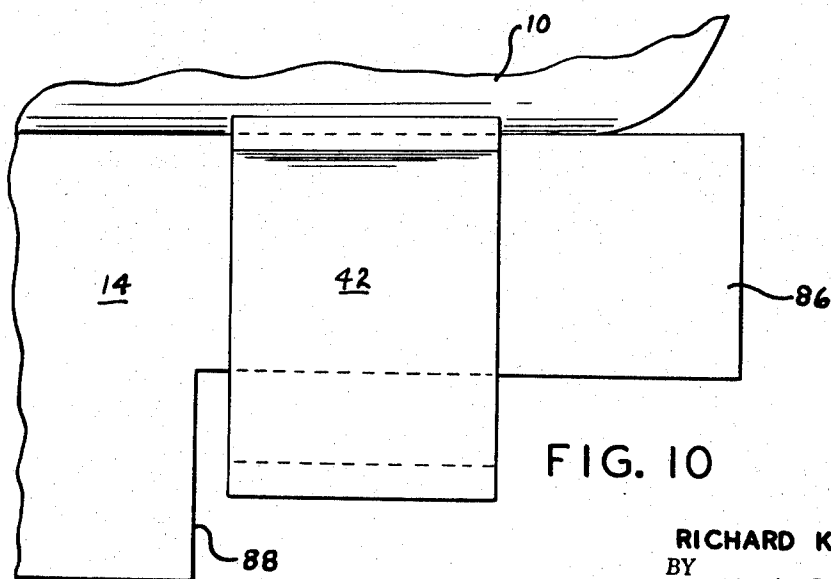


FIG. 10

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3,386,567

SHIPPING SUPPORT STRUCTURE FOR BATH-TUBS AND BLANKS THEREFOR

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Filed May 29, 1967, Ser. No. 641,865

12 Claims. (Cl. 206—46)

ABSTRACT OF THE DISCLOSURE

A protective support for a bathtub designed for use with a shipping container or wrapper and consisting of three parallel, vertically positioned sections of corrugated fiberboard material for supporting the tub in the container. The structure includes tabs for retaining the structure in vertical position with the rear legs of the bathtub suspended from the bottom of the container or wrapper.

Conventional bathtubs extensively used in new home construction include a front apron panel which rests on the floor or floor supporting structure and supports the front of the tub throughout its length, and a pair of legs attached to the bottom of the tub along the rear edge thereof for supporting the rear side of the tub. These two rear legs are normally welded directly to the metal forming the tub bottom at two spaced points, and hence the pressure from weight applied to the tub and force applied to the legs are concentrated in the bottom at the two areas where the legs are joined thereto. The tubs are usually shipped in containers or wrappers in which the legs sit on a bottom frame or other supporting structure and, not only are required to carry the weight of the tub, but are also subjected to bumps and jostling when the container and tub are roughly handled during shipping or storage in the container. This excess force on the legs often causes slight deflection in the legs and tub bottom, usually not of a permanent nature, but sufficient to crack or chip the porcelain enamel on the upper side of the bottom and/or on the lower internal side of the rear bathtub wall, normally damaging the tub beyond repair. It is therefore one of the principal objects of the invention to provide a support for the rear side of the tub while the tub is in a shipping container, which removes the pressure from the rear legs of the tub and distributes it substantially the full length of the tub bottom, and which is constructed of material inherently providing a cushion for the tub bottom to absorb shock from bumping and jarring, and preventing distortion or deflection of either the legs or bottom.

Another object of the invention is to provide a supporting structure for bathtubs in shipping containers which can readily be inserted in place and held therein without any fixtures or other means for securing the structure to the container or tub, and which can easily be removed from the container and tub when the tub is unwrapped or uncrated.

Still another object is to provide a supporting structure for bathtubs of the aforementioned type which can be fabricated from a single piece of flat, corrugated fiber-

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board material and formed into a strong elongated member which conforms to and supports the tub bottom throughout most of its length, and suspends the legs above the container bottom so that they do not support the tub.

A further object is to provide a shipping support structure for bathtubs which can be easily die cut to the desired configuration at the fabricating plant, and shipped in flat form to the tub manufacturer or shipper, and then readily folded into the final support structure for insertion in the shipping container with the tub.

Another object of the invention is to provide a pre-cut blank for forming a folded support structure of the aforementioned type which can easily be made, stored and shipped, and which can readily be folded into the final support structure.

Additional objects and advantages of the invention will become apparent from the following description and accompanying drawings, wherein:

FIGURE 1 is a side elevational view of the rear side of a bathtub showing the bathtub in a shipping container with the side of the container removed in order to show the present supporting structure for the bathtub;

FIGURE 2 is a vertical, cross-sectional view of the bathtub and shipping container, the section being taken on line 2—2 of FIGURE 1;

FIGURE 3 is a plan view of a die-cut member from which the final folded structure is formed;

FIGURE 4 is an end view of the member shown in FIGURE 3, illustrating the manner in which the member is folded;

FIGURE 5 is a top plan view of the final folded support structure;

FIGURE 6 is an elevational view of one side of the structure shown in FIGURE 5;

FIGURE 7 is an elevational view of the other side of said structure;

FIGURE 8 is an enlarged cross-sectional view of the structure shown in FIGURES 5, 6 and 7, the section being taken on line 8—8 of FIGURE 5;

FIGURE 9 is an enlarged fragmentary cross-sectional view of a bathtub and an end elevational view of one of the legs therefor and the present structure supporting the tub; and

FIGURE 10 is a fragmentary side elevational view of the leg and adjacent end of the present supporting structure as shown in FIGURE 9.

Referring more specifically to the drawings, and to FIGURES 1 and 2 in particular, numeral 10 designates generally a bathtub and 12 a shipping container for the bathtub, the bathtub being shown in position in the container supported therein by the present supporting structure identified by numeral 14. The present invention may be used with a number of different types of shipping containers; however, one particularly suitable for bathtubs of this type is disclosed in my Patent No. 3,289,925, issued on December 6, 1966.

The container includes top and bottom panels 16 and 18 and end panels 20 and 22. Reinforcing frame members 24 and 26 are preferably provided on the upper surface of the bottom panel for supporting the front and rear of the bathtub. The tub shown in the drawings is considered conventional for the purpose of the present description,

consisting of inner front wall 30, rear wall 32, and walls 34 and 36 joined to walls 30 and 32. The front of the tub is supported by a front panel 38 connected to inner front wall 30 at the upper edge thereof by a marginal portion 40. The rear portion of the tub is supported on U-shaped metal legs 42 and 44 joined to the bottom of the tub by spot welding the upper end thereof at numerals 46 and 48. The entire internal surface of the bathtub margin 40 and the face of front panel 38 coated with porcelain enamel and the rear sides of those parts are normally either painted or left in their metallic surface condition.

The present supporting structure 14 rests on the bottom 18 of the shipping container or on supporting member 26, and the bottom of tub seats firmly on the upper surface of the structure, with the bottom of the two legs held in spaced relation to the container bottom or the reinforcing structure by the present structure. The shipping containers or wrappers for tubs are normally fabricated in one plant by one manufacturer and shipped to the tub manufacturer where the containers or wrappers are formed in their final shape. The present supporting structure is cut into the required shape and shipped flat to the place where the tub is manufactured and is then folded into the supporting structure.

In the fabrication of the present supporting structure 14, the blank shown in FIGURE 3 is formed, consisting of three sections, 50, 52 and 54. This blank is cut from the corrugated fiberboard material, consisting of two external sheets with a corrugated spacer therebetween. A score line 56 is formed between sections 52 and 54 by cutting layer 58, as shown in FIGURE 4, thereby permitting layer 60 to form, in effect, a hinge 62 between the two sections 52 and 54, and permitting the two sections to fold together in the manner illustrated in FIGURE 8. The cut between sections 50 and 52 extends completely through the material but is interrupted at points 64, 66 and 68 to form interconnecting members functioning as hinges between the two sections. These areas or hinges 64, 66 and 68 permit section 50 to be folded in either direction onto section 52. Normally, however, the section would be folded downwardly along the side opposite section 54 as shown in FIGURE 8. Since the bottom of the tub slopes from right to left as seen in FIGURE 1, the width of sections 50, 52 and 54 is narrower adjacent their left hand ends than at their right hand ends. Thus, when the final supporting structure is formed, it tapers from the right hand end to the left hand end, conforming generally to the space between the bottom of the tub and the bottom of the container. One of the particular advantages of the hinges formed by sections 64, 66 and 68 and the intervening completely cut lines 70, 72, 74 and 76 is that the blank can be completely die-cut from one side of the blank, thus permitting the blank to be formed in one cutting operation. The blank is normally shipped to the bathtub manufacturer in the flat form.

When the present support structure is to be used, it is folded in the manner illustrated in FIGURE 4 to the shape shown in FIGURES 5 through 9 with the three sections lying side-by-side and parallel to one another. Each section of the blank shown in FIGURE 3 is provided with tabs 80a, 80b, and 80c on the left hand end, and tabs 82a, 82b, and 82c on the right hand thereof as viewed in that figure. When the structure is folded into its final shape, these tabs form extensions 84 and 86, respectively, which are deflected and inserted into the respective U-shaped legs 44 and 42, thus holding the support structure firmly in place with the three sections in vertical position, as seen in FIGURES 8 and 9. When the sections are folded into their shape, the lower edges of the three sections engage the supporting surface on the container or wrapper and the upper edges of the structure support the bottom of the tub. The support structure is of such a width relative to the height of legs that the legs are held in spaced relation to the support structure in the container, as seen at numeral 88 in FIGURE 10.

The tabs 84 and 86 assist in holding the support structure in its upright position, and shoulders 90 and 92 form abutments which prevent the support structure from slipping endwise or otherwise becoming displaced during shipping. In order to adapt the support structure to various bathtubs having legs of different distances apart, the support structure is scored at numeral 96 so that it can be placed in a curved or angular position beneath the tub instead of an a straight line between the legs.

When the present support structure is to be used, the three sections are folded to the shape clearly seen in FIGURES 8 and 9, and the two end tabs 84 and 86 are then inserted in the U-shaped legs. The corrugated fiberboard material is firm but not rigid, and hence will yield sufficiently to distribute the weight of the tub over a substantial area of the bottom and will effectively absorb shock and jarring from bumping and jostling of the container during shipping. With the legs suspended in the manner illustrated in FIGURE 9, the force from the bumping and jostling is not transmitted to them, and hence the bottom is not deflected or twisted in any manner which could result in damaging the porcelain on the tube in any way.

While only one embodiment of the present shipping support structure for bathtubs has been described herein, various changes and modifications may be made without departing from the scope of the invention.

I claim:

1. A blank for a shipping support structure for bathtubs, comprising a flat panel composed of corrugated fiberboard with a sheet layer on each side and having two longitudinal outer sections and an intermediate section therebetween, a tab on each end at the outside corners of one of said sections, and tabs on each end of the other two sections at adjacent corners, hinge-like means for folding one of said outer sections along one side of said intermediate section, and a second hinge-like means for folding the other outer section along the other side of said intermediate section, to form a three-layer structure with the tabs at each end of all three sections being in juxtaposition.

2. A blank for a shipping support structure for bathtubs as defined in claim 1 in which the hinge means between one of said outer sections and the intermediate section consists of one of the sheet layers of the corrugated fiberboard extending between the two sections.

3. A blank for a shipping support structure for bathtubs as defined in claim 2 in which all three of said sections are narrower at one end than at the other end.

4. A blank for a shipping support structure for bathtubs as defined in claim 1 in which the hinge means between one of said outer sections and the intermediate section consists of a portion defined on its two ends by a cut extending completely through the panel.

5. A blank for a shipping support structure for bathtubs as defined in claim 4 in which there are a plurality of said hinge means.

6. A blank for a shipping support structure for bathtubs as defined in claim 5 in which all three of said sections are narrower at a corresponding end than at the other corresponding end.

7. A blank for a shipping support structure for bathtubs as defined in claim 4 in which all three of said sections are narrower at one end than at the other end.

8. A blank for a shipping support structure for bathtubs as defined in claim 1 in which the hinge means between one of said outer sections and the intermediate section consists of a sheet layer of said corrugated fiberboard, and the other hinge means consists of a plurality of spaced portions interconnecting the two sections and defined at their ends by cut portions extending in the respective two sections.

9. A blank for a shipping support structure for bathtubs as defined in claim 1 in which all three of said sections are narrower at a corresponding end than at the other corresponding end.

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10. A shipping container for bathtubs having a front apron, comprising a fiberboard wrapper to extend around the tub at the top, front, bottom, and rear thereof and having open ends, members for closing the ends of said wrapper, and an elongated support member of fiberboard generally arranged longitudinally between the tub and the wrapper bottom for supporting the rear of the tub in the wrapper in spaced relation to said bottom.

11. A shipping container for bathtubs as defined in claim 10 in which said support consists of three layers of fiberboard folded to a side-by-side position with respect to one another and having sufficient strength to support the tub when placed beneath the tub in an edgewise man-

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ner and in a longitudinal position with respect to the tub.

12. A shipping container for tubs as defined in claim 11 in which the tub contains two spaced U-shaped legs and said support contains reduced end members for extending into said U-shaped legs.

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