United States Patent [19]

Coons et al.

[11] **3,757,935**

[45] **Sept. 11, 1973**

[54] **BATHTUB CONTAINER**

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[73] Assignee: **Olinkraft, Inc.**, West Monroe, La.

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[21] Appl. No.: **223,582**

[52] **U.S. Cl.** ..... **206/46 H**, 229/23 R

[51] **Int. Cl.** **B65d 85/54**, B65d 5/32

[58] **Field of Search** ..... 206/46 H, 46 FN; 229/23 R

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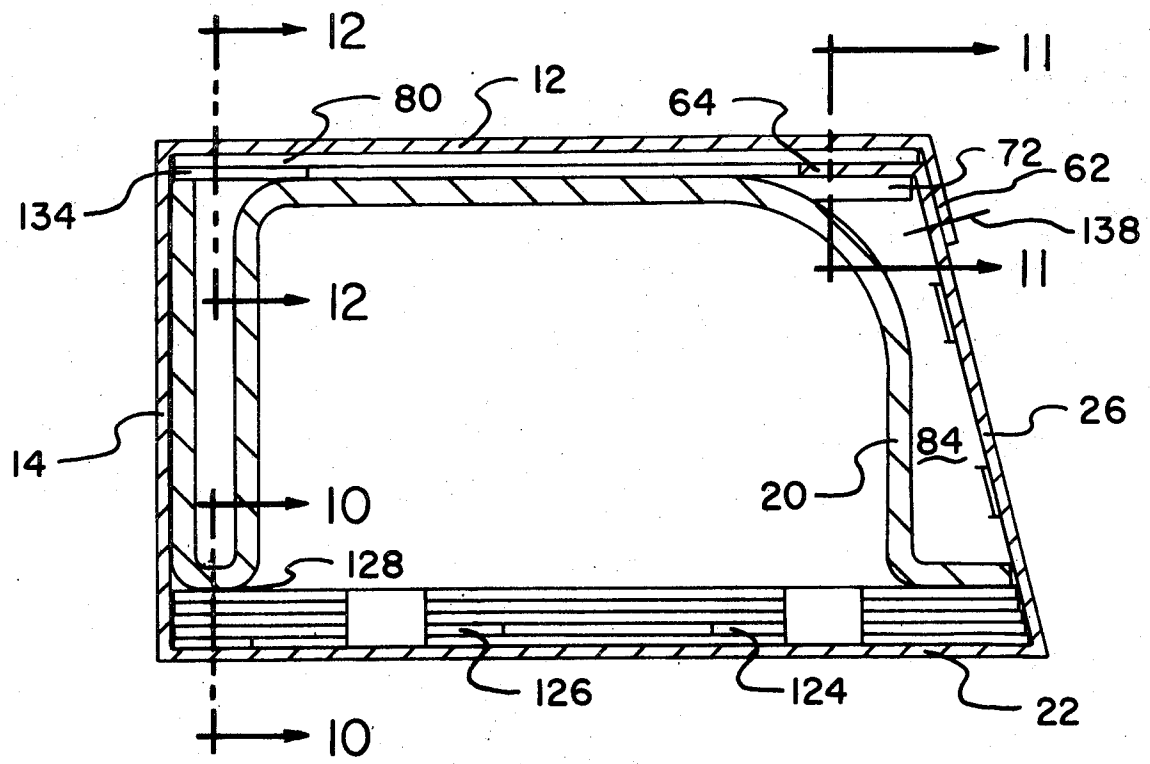
Primary Examiner—Leonard Summer

Attorney—Norvell E. Von Behren

[57] **ABSTRACT**

An improved bathtub shipping package for completely encircling the bathtub to protect the bathtub from rough handling and the elements of weather. The package comprises a wrap-around tube member having a pair of unique end caps fixedly attached to the tube member, the end caps having built in means for reinforcing the end caps from horizontal and vertical shock as well as built in protective pads for protecting the top end portions of the bathtub whenever the bathtub is placed within the package. The structural manufactured joint for the tube member is formed at the bottom rear of the tube which serves to cushion the rear legs of the bathtub whenever the bathtub is placed within the package. The end caps are positioned within the tube in combination with the structural manufactured joint so that longitudinal stapling of the end caps to the tube member is easily accomplished due to the resistance of the structural manufactured joint.

6 Claims, 12 Drawing Figures



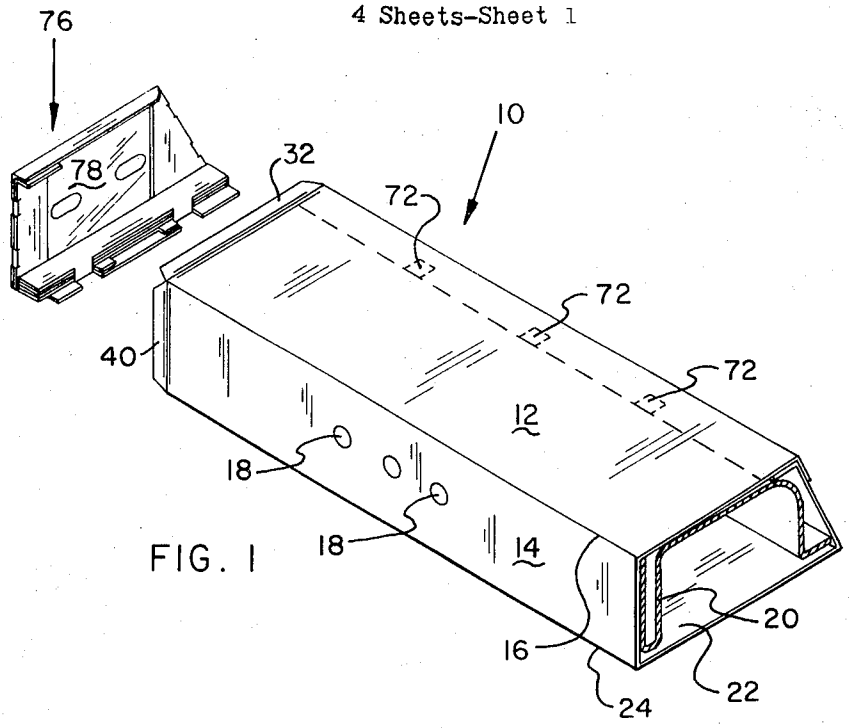

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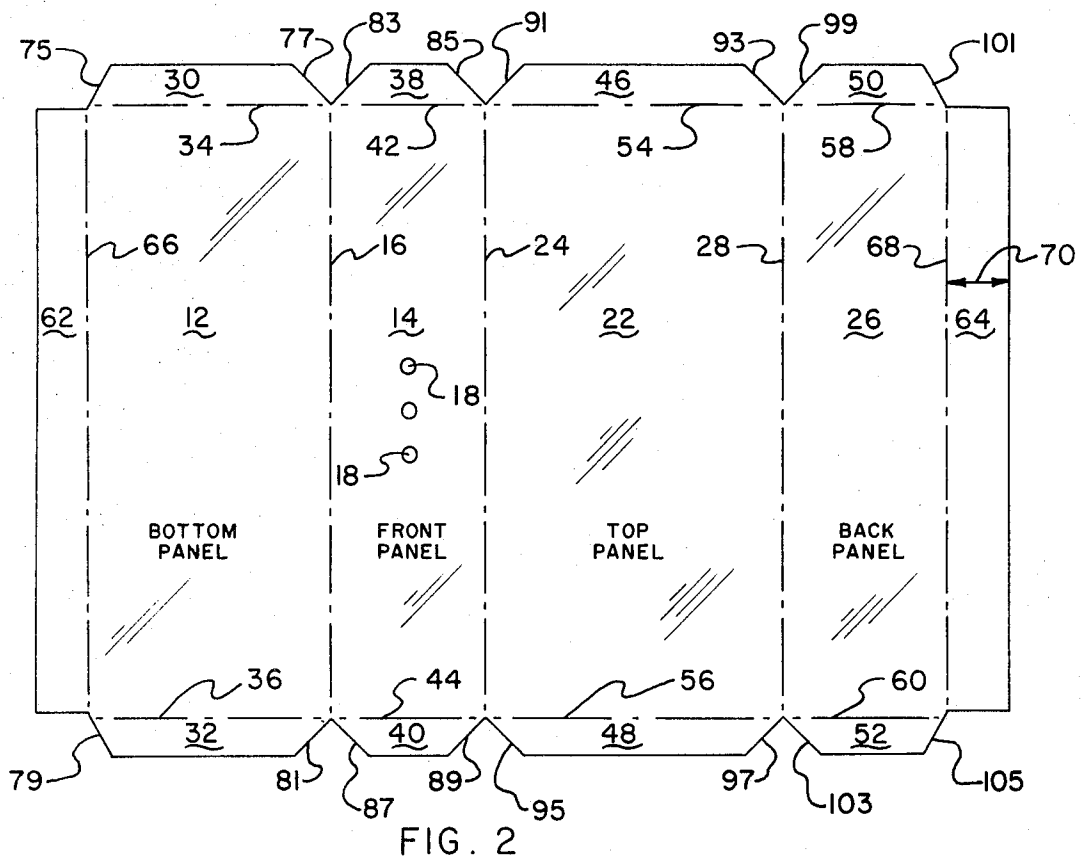
FIG. 1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68
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62
12
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64
18
18
BOTTOM PANEL
FRONT PANEL
TOP PANEL
BACK PANEL
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103
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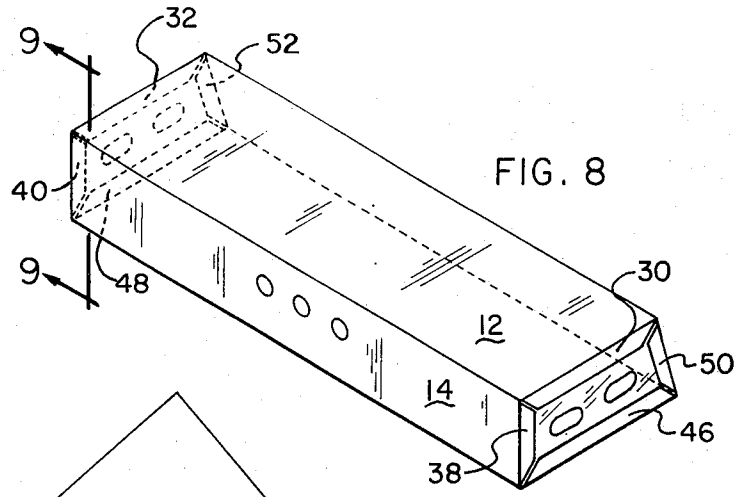
FIG. 2


9
32
52
40
9
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30
12
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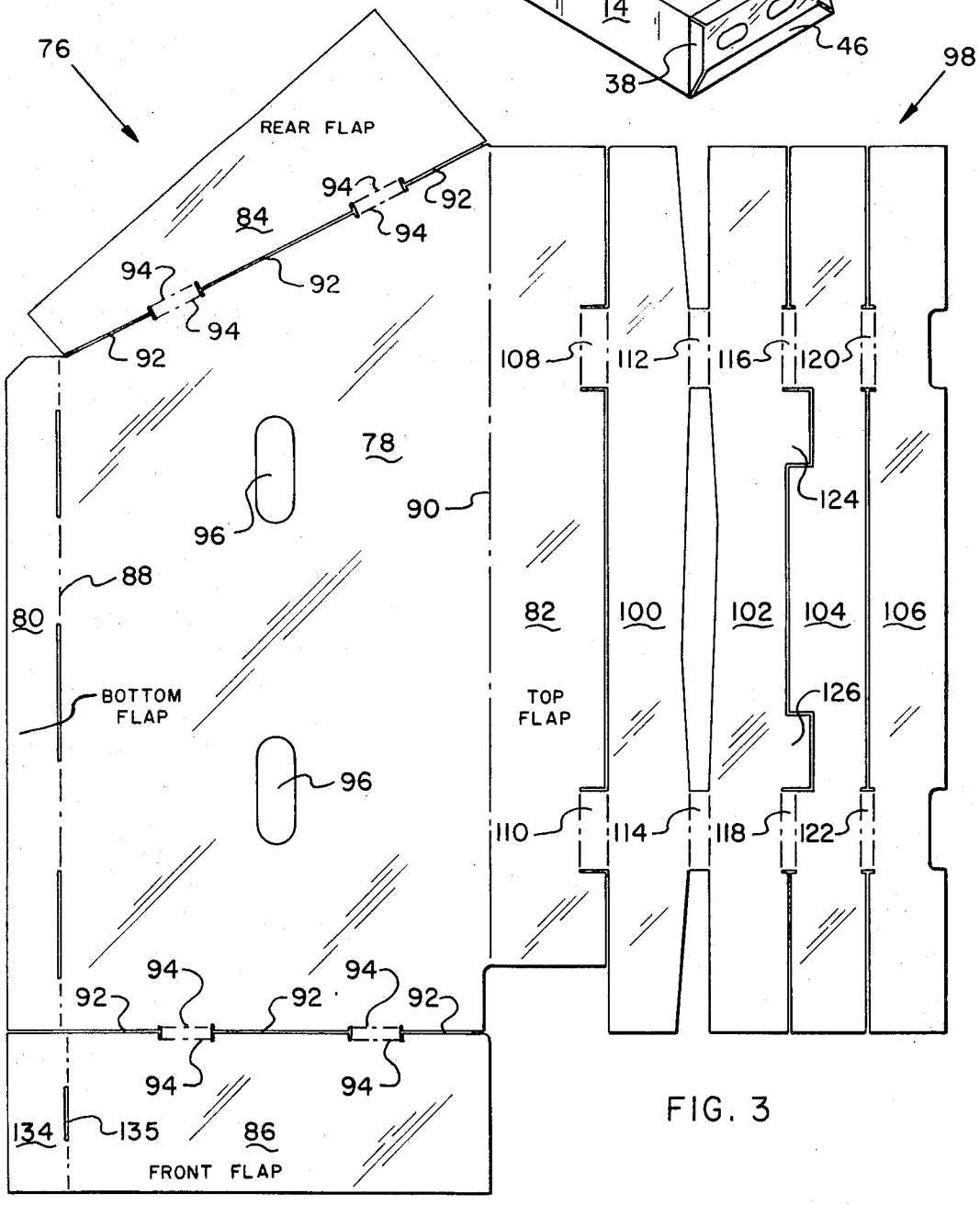
14
46
38

FIG. 8


76
98
REAR FLAP
94
92
84
94
94
92
94
92
108
112
116
120
78
90
124
96
88
80
82
100
102
104
106
BOTTOM FLAP
TOP FLAP
126
96
110
114
118
122
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92
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94
94
134
135
86
FRONT FLAP

FIG. 3

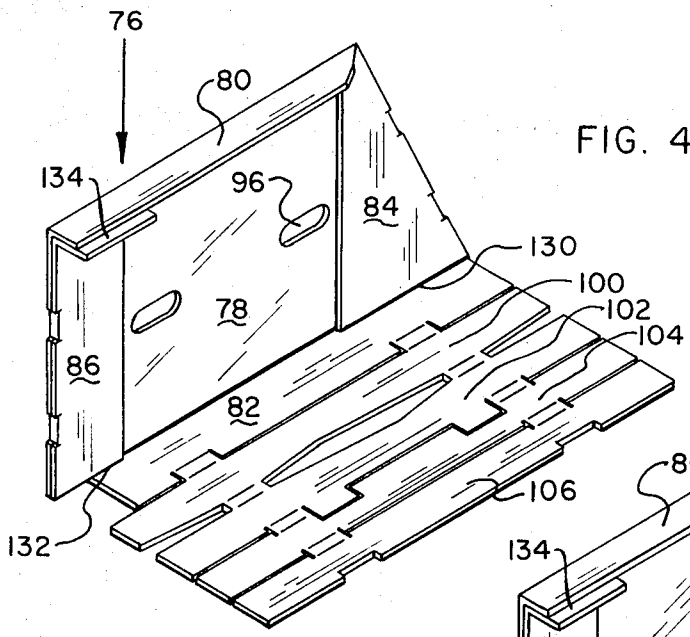

FIG. 4

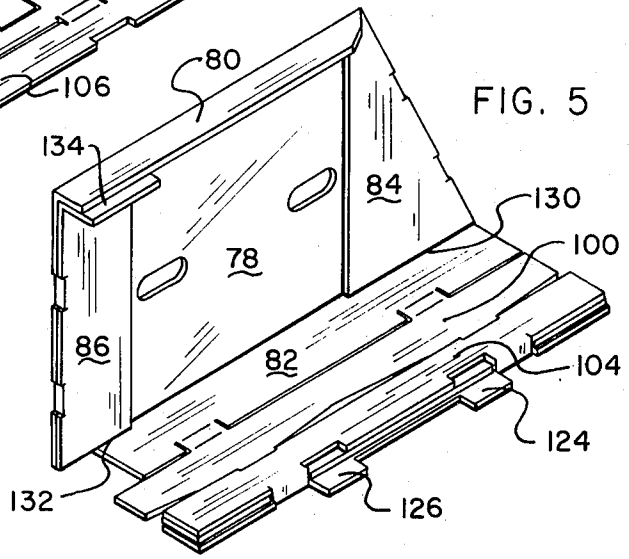

FIG. 5

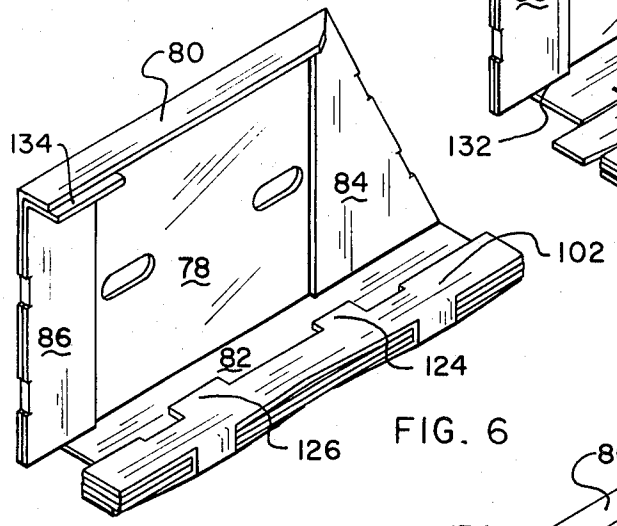

FIG. 6

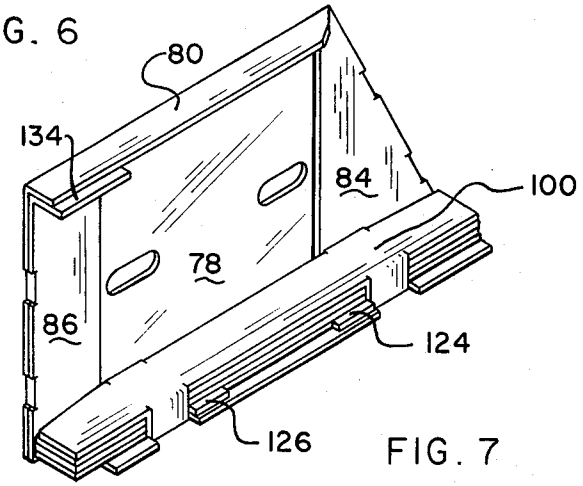

FIG. 7

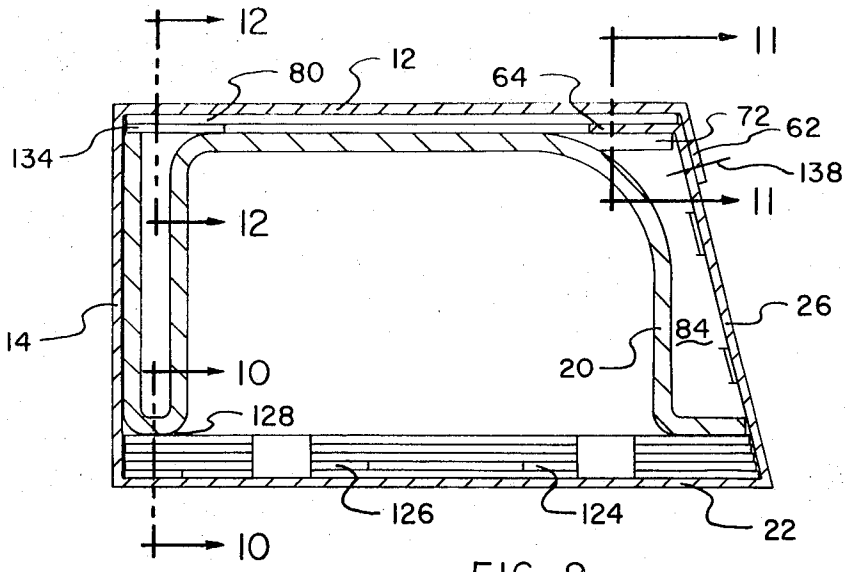

FIG. 9

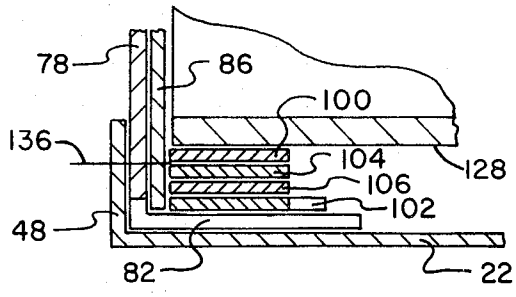

FIG. 10

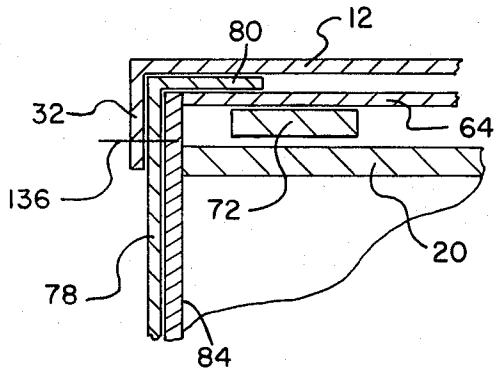

FIG. 11

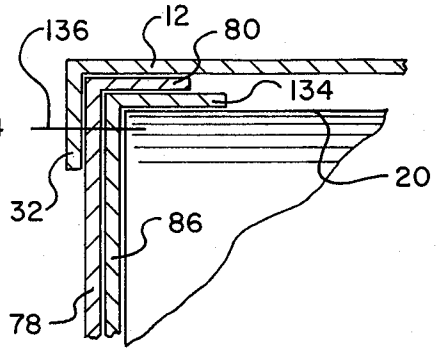

FIG. 12

BATHTUB CONTAINER

BACKGROUND OF THE INVENTION

This invention relates generally to paperboard containers and more particularly relates to a new and improved bathtub shipping package which may be constructed in a three-piece construction to eliminate standard conventional heavy and/or bulky shipping containers.

In the handling of residential bathtubs formed of pressed steel, special problems are encountered in preparing the bathtubs for shipping and storage due to the large heavy size of the bathtubs as well as their finished surfaces which must be free from damage when installed in the ultimate user's home. Prior art bathtub containers are known which are formed by manufacturing a wooden crate and placing the bathtub therein for shipment to the consumer. One such bulky bathtub container is shown in the U.S. Pat. No. 3,099,351 issued on July 30, 1963 to Coffey. Bathtub containers such as this while protecting the bathtub during the trip to the consumer, often increase the handling problems of the tub due to the extra weight encountered with the use of the heavy wooden frame used to surround the tub.

Thereafter efforts were made to reduce the weight of the heavy wooden crates by the use of a combination of wood and paperboard without destroying the effectiveness of the protection afforded by the container. One such effort is shown in U.S. Pat. No. 3,194,395 issued July 13, 1965 to Weaver et al. wherein a combination of wooden end caps are used in conjunction with paperboard top and bottom panels which are banded to the wooden end caps at the end of the package. Such a package, while serving its ultimate purpose, still required a fabrication of heavy wooden end caps which added greatly to the cost of the entire package. Further attempts at reducing the cost of the package resulted in the configuration shown in U.S. Pat. No. 3,487,914 issued Jan. 6, 1970 to Weaver et al. which attempted to eliminate the wooden end caps by the use of paperboard end caps but which still required wooden reinforcements in the end caps in order to obtain the necessary structural stability and cushioning necessary for the bathtub package.

Other attempts have been made to utilize an all paperboard shipping package as shown by the U.S. Pat. No. 3,289,825 issue Dec. 6, 1966 to Smith and the U.S. Pat. No. 3,486,612 issued Dec. 30, 1969 to Kivell. Both of these structures, while eliminating the wooden slats of reinforcements heretofore mentioned, obtained their cushioning at the expense of having to use many cardboard padded pieces placed at the various critical positions within the package for cushioning that portion of the bathtub during a shipment. Such multi-piece packages were not easily assembled and were expensive to construct.

A somewhat different approach was attempted in the U.S. Pat. No. 3,521,744 issued July 28, 1970 to Smith wherein the patentee attempted to achieve the necessary structural stability by using an elongated wooden rod at the lower rear feet of the tub in combination with a partial wooden end frame and a paperboard overlaying tube in combination with previously tried cardboard cushions. This design, like other attempted designs using wood framing, was still expensive to manufacture and did not provide the ultimate in a desired shipping container from the consumer's standpoint.

SUMMARY OF THE INVENTION

In order to overcome the problems inherent in the beforementioned prior art shipping packages, there is provided by the subject invention a new and novel bathtub shipping package which comprises a generally three-piece construction comprising a wrap-around tube member for completely encircling the bathtub used in conjunction with a pair of end caps, the wrap-around tube member and the end caps are formed entirely of paperboard and may be coated on at least one side thereof with a water-proof coating for protection against the elements. The tube member is formed such that a structural paper manufactured joint is positioned beneath the rear feet of the bathtub which serves to cushion the rear legs whenever the bathtub is placed within the tube member and also serves as a means for reinforcing the tube member from longitudinal shock occurring during assembly of the package and occurring during transit.

The paper end caps have formed thereon paper means for reinforcing the end caps from both horizontal and vertical shock and a portion of the end caps have formed thereon protective pads for protecting the top end portions of the bathtub whenever the bathtub is placed within the package. The front panel of the wrap-around tube also contains holes which may be used for identifying the color of the bathtub contained within the package and the end caps contain a plurality of hand holes which may be utilized to lift the package and bathtub contained therein.

Accordingly it is an object of the invention to provide a new and novel bathtub package which may be constructed in a basic three-piece package comprising a wraparound paperboard tube and a pair of paperboard end caps with the end caps containing interval reinforcing means for reinforcing the end cap from horizontal and vertical shock and also containing built in pads for reinforcing the tub which is positioned on the pad when the package is assembled.

Yet another object of the invention is to provide a new and improved paperboard bathtub container wherein a longitudinal structural manufactured paper joint is formed beneath the rear portion of the tub feet to provide structural rigidity to the package and to eliminate the use of wooden reinforcing rods heretofore used.

Still another object of the invention is to provide a new and improved paperboard bathtub package which may be constructed entirely of weather-resistant coated paperboard and which completely enclosed the bathtub contained therein thereby allowing the bathtub package and bathtub to be stored outdoors without detrimental effect on the package or the bathtub.

Still yet another object of the invention is to provide an improved end cap for a wrap-around bathtub package wherein the end cap is formed in a one-piece construction with built in reinforcing means and built in cushioning means which are formed thereon without the use of outside fastening means such as glue, staples or the like.

Yet another object of the invention is to provide a new and improved method for assembling a package around a bathtub which allows the bathtub to be

quickly packaged with a minimum of handling of the heavy bathtub during the packaging process.

These and other objects and advantages of the invention will become apparent after a study of the drawings and after reviewing the specification describing the preferred embodiment.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an exploded perspective view of the new and improved bathtub package of the invention showing the bathtub contained within the wrap-around tube member and showing one end cap in position prior to insertion into the tube member;

FIG. 2 is a top view of the production blank of the wrap-around tube member shown manufactured as a one-piece construction;

FIG. 3 is a top view of the production blank for one of the end caps of the invention;

FIG. 4 is a perspective view showing one of the end caps of the invention prior to forming the end cushions of the invention;

FIG. 5 is a perspective view of the end cap shown in FIG. 4 showing the end cushion being partially folded;

FIG. 6 is a perspective view of the end cap shown in FIG. 4 and 5 showing the final stages of folding the end cushion;

FIG. 7 is a perspective view of the end cap shown in FIGS. 4–6 showing the end cushion completely folded and locked in place;

FIG. 8 is a perspective view of the bathtub package of the invention showing both end caps in position within the wrap-around tube member;

FIG. 9 is an end sectional view taken along line 9—9 of FIG. 8 showing the wrap-around tube completely encircling the tub and showing the folding sequence of the end caps in conjunction with the longitudinal manufactured joint;

FIG. 10 is a partial end section view taken along line 10—10 of FIG. 9;

FIG. 11 is a partial end sectional view taken along line 11—11 of FIG. 9; and

FIG. 12 is a partial end sectional view taken along line 12—12 of FIG. 9.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings in general and particularly to FIG. 1 of the drawing there is shown the new and improved bathtub package of the invention which comprises a wrap-around tube member, shown generally by the numeral **10** which is formed from corrugated paperboard and comprises a bottom panel **12** which is hingedly attached to a front panel **14** by means of the scoreline **16**. The front panel **14** has formed therein a plurality of identifying holes **18** which are used as means for identifying the color of the bathtub **20** contained within the tube member **10**.

Hingedly attached to the front panel **14** is a top panel **22** which is hinged along the scoreline **24**. In a similar manner a back panel **26** is hinged along scoreline **28**. The bottom panel **12** has formed on the upper and lower portions thereof a pair of first hinged tabs **30** and **32** formed by means of the scorelines **34** and **36**. In a like manner the front panel **14** has formed on the upper and lower portions thereof a pair of first hinged tabs **38** and **40** formed by means of the scorelines **42** and **44**. In a similar manner the top panel **22** and the back panel **26** have formed on the upper and lower portions thereof first hinged tabs **46, 48, 50** and **52** formed by means of the scorelines **54, 56, 58** and **60**.

In addition to the first hinged tabs thusly mentioned, the bottom panel **12** and the back panel **26** also have formed on the ends thereof a second hinged tab **62** and **64** formed by means of the scorelines **66** and **68**. It should be noted in the embodiment shown that the width of the second hinged tab **64** shown by the arrow dimension **70** is preferrably in the range of **7** inches more or less in order that the second hinged tab **64** will be positioned beneath the tub feet **72** whenever the bathtub is positioned within the bathtub package as will be more fully explained hereinafter.

The first hinged tabs **30, 32, 38, 40, 46, 48, 50** and **52** are formed with chamferred sides **75, 77, 79, 81, 83, 85, 87, 89, 91, 93, 95, 97, 99, 101, 103** and **105**. The tube member **10** may be constructed in a one-piece configuration shown in FIG. 2 or may be constructed in several pieces within the spirit and scope of the invention, by providing manufactured joints at the foldlines **16, 24** or **28**. Referring now to FIGS. **1** and **3** of the drawing there is shown the new and improved end cap, shown generally by the numeral **76** which is formed from a generally four-sided paperboard end member **78** having formed around the edges thereof a bottom flap **80**, a top flap **82**, a rear flap **84** and a front flap **86** for the purposes of which will be described more fully hereinafter. The bottom flap is hingedly attached to the end member **78** by means of the scoreline **88** and the top flap **82** is hingedly attached in a similar manner to the end member **78** by means of the scoreline **90**. The rear flap **84** and the front flap **86** are hingedly attached to the end members **78** by a plurality of slit hinges which are formed by means of a plurality of die cuts **92** in combination with a plurality of scorelines **94** as is well known in the art of packaging.

The end members **78** also have formed in the central portion thereof a plurality of hand holes **96** which may be used to lift the assembled bathtub package. It will be understood that the bathtub package shown comprises two end caps **76** which are identical in construction with one cap being the reverse or opposite hand of the other end cap.

Returning now to FIG. **3** of the drawing there is shown generally by the numeral **98**, the means for cushioning the top ends of the tub whenever the bathtub is positioned within the package. The cushioning means comprises a plurality of flaps **100, 102, 104** and **106** which are hingedly attached to each other and to the top flap **82** by means of a plurality of slit hinges **108, 110, 112, 114, 116, 118, 120**, and **122** formed in a manner similar to the slit hinges formed on the rear flap **84** and the front flap **86** as before mentioned. The flap **102** has formed on one side thereof at **124** and **126** a protuberance which is designed to lock the flaps in position whenever they are folded up to form the cushion as will be more fully described hereinafter.

Referring now to FIGS. **4–7** of the drawing there is shown the manner in which the flaps **100, 102, 104** and **106** are used to provide a built-in cushion for support of the top portion of the tub whenever the tub is placed within the package. When the end cap **76** is folded for insertion into the tube member **10**, the rear flap **84** and the front flap **86** are folded in juxtaposition with the end member **78** as shown in FIG. **4** of the drawing. Thereupon flap **106** is folded in juxtaposition with flap

104 completing the first step in the folding sequence. Thereafter the two flaps **104** and **106** are folded over on to flap **102** as shown in FIG. **5** of the drawing. The three flaps **102, 104** and **106** are then folded over the flap **100** as shown in FIG. **6** of the drawing with the final folding sequence being the folding of flaps **100, 102, 104** and **106** into juxtaposition with the top flap **82** as shown in FIG. **7** of the drawing. In the final folded position the protuberance **124** and **126** is positioned as shown in FIG. **7** and serves to lock the folded flaps **100, 102, 104** and **106** tightly into position as a single cushion having five thicknesses of paperboard.

When the rear flaps **84** and the front flap **86** are folded in juxtaposition to the end member **78** as shown in FIG. **7** these flaps provide additional strength to the end caps to reinforce the end cap from vertical shocks encountered in stacking of one bathtub container on the other container. In addition the folding of these flaps against the end member **78** also provides rotational rigidity to the end cap since the bottom edges **130** and **132** of the rear flap **84** and the front flap **86** is also positioned against the top flap **82** with the rear flap **84** and the front flap **86** being tightly held against the end member **78** by means of the rolled up cushion as shown in FIG. **7** of the drawing.

In assembling the bathtub package, the bathtub **20** is placed upside down with its top edge **128** lying on the top panel **22** of the tube member **10.** Thereupon the back panel **26** is folded over the back of the tub and the front panel **14** is folded over the front of the tub with the bottom panel **12** overlaying the bottom of the tub which in the position shown in FIG. **9** of the drawing and is lying upside down within the tube member **10.** Thereafter the cushions in the end caps are folded as before described and the top flap **82** is placed in juxtaposition to the top panel **22** with the ends of the tub being lifted a sufficient amount to rest on the top of the cushion as shown in FIG. **10** of the drawing.

Referring now to FIGS. **11** and **12** of the drawing there is shown partial sectional views, enlarged for the purposes of clarity, showing the folding of the bottom flap **80** in place beneath the bottom panel **12** prior to the end cap being stapled to the tube member by means of the staples as at **136.** The second hinged tab **64** which forms part of the manufactured longitudinal joint of the tube member **10** has been positioned around the tub **20** as before mentioned. After the end caps **76** are positioned underneath the top of the tub with the cushioning supporting the top edge **128** of the tub as shown in FIG. **10,** the bottom flap **80** of the end cap **76** is then positioned between the second hinged tab **64** and the bottom panel **12.** Thereafter the first hinged tab **32** is folded down over the end member **78** and a plurality of staples are applied at **136** throughout the length of the first hinged tab **32.** When the corner is erected thusly the second hinged tab **64** is able to resist the horizontal forces caused when applying the staples at **136.** In a similar manner the opposite end of the package is completed with the first hinged tabs **30** being positioned and stapled in a similar manner.

Referring to FIG. **12** of the drawing there is shown the folding sequence of the front flap **86** and its hinged bottom flap **134** which is hinged by means of the scoreline **135.** As before mentioned the front flap **86** has been folded inwardly in juxtaposition to the end member **78** and the flap **134** has been hinged at right angles to the front flap **86** as shown in FIG. **12.** Thereafter the bottom flap **80** is positioned beneath the bottom panels **12** as shown in FIG. **12** and the first hinged tab **32** is folded downwardly over the end member **78** and a plurality of staples are applied throughout the length of the first hinged tab **136.** In a similar manner the opposite end of the bathtub package is stapled shut with a plurality of staples also being applied to the remaining first hinged tabs **38, 40, 46, 48, 50** and **52** after these tabs have been folded down over the end cap as shown in FIG. **8** of the drawing. Thereupon the assembler of the package may wish to apply a plurality of staples at **138** along the longitudinal manufactured joint along the length of the tube member **10** as shown in FIG. **9** of the drawing.

When the bathtub package has been constructed and assembled as hereinbefore described the second hinged tabs **62** and **64** form a longitudinal manufactured joint which runs the length of the tube member **10** with the tab **64** serving as cushioning for the tube feet **72** and also serving to longitudinally reinforce the tube member from shock occurring during the stapling of the end caps to the tube member. The new and improved end caps thusly formed may be constructed from water-resistant coated paperboard and contain built-in protective pads for protecting the upper edge of the bathtub contained within the bathtub pack. When the package is constructed in the manner described no wooden reinforcements are required for the bathtub package and several bathtubs may be packed vertically on top of each other without damage to the lower packages. It has been found from experimentation that when the bathtub package is constructed with the tube member being formed of **200** lb. double-wall paperboard and the end caps being formed of **350** lb. double-wall paperboard, a highly desired package is obtained which has abilities to protect the vital areas of the bathtub and also to withstand standup end drops which occur in the field storage of the bathtubs within the package. By the use of the built-in rollup cushioning pads on the end caps, the cushions are always rigidly held in place on the end caps and the entire package may be quickly assembled around the bathtub and securely fashioned into a tight compact protective package. When the package is thusly formed and the paperboard members have been coated with a weather-resistant material, the assembled package may be stored in outside storage areas without damage to the package or to the contents contained within the package. With the utilization of the color identifying holes contained in the front panel of the tube member, the color of the bathtub contained within the enclosed package may be readily ascertained without relying on color code numbers or other printing indicia designating the color contained on the package.

From the foregoing, it can be seen that a new and novel bathtub package has been provided for accomplishing all of the objects and advantages of the invention. Nevertheless, it is apparent that many changes in details of construction or arrangement of the parts of the package may be made without departing from the spirit and scope of the invention as expressed in the accompanying claims and the invention is not to be limited to the exact manner shown and described since only the preferred embodiment has been given by way of illustration only.

Having described the invention, we claim:

1. In a three-piece elongated bathtub shipping package of the type having a wrap-around tube member completely encircling the bathtub and fixedly attached to a pair of end caps, the tube member comprising a front panel, a bottom panel, a rear panel and a top panel respectively covering the front, bottom, rear and top of the bathtub, the improvement comprising:

a. each end cap having formed thereon a hinged bottom flap;

b. at least the back panel of the tube member having formed thereon, along its longitudinal edge, a second hinged tab; and

c. a portion of the bottom flaps on the end caps being interlocked with the second hinged tab on the back panel so that a portion of the bottom flap is positioned between the second hinged tab and the bottom panel whenever the tube member is formed around the bathtub.

2. The improvement as defined in claim 1 further comprising the second hinged tab formed on the back panel being formed approximately 7 inches wide along the length thereof thereby serving as a cushion for the rear legs of the bathtub contained within the package.

3. The improvement as defined in claim 2 further comprising the bottom panel also having formed thereon a second hinged tab formed along the longitudinal edge of the bottom panel, said tab being fixedly attached to the back panel whenever the tube member is formed around the bathtub.

4. The improvement as defined in claim 3 further comprising the front panel, the bottom panel, the rear panel and the top panel each having formed on each end thereof, a first hinged tab fixedly attached to their respective end caps.

5. In a three-piece elongated bathtub shipping package of the type comprising a wrap-around tube member completely encircling the bathtub and fixedly attached to a pair of end caps, the tube member having a front panel, a bottom panel, a rear panel and a top panel respectively covering the front, bottom, rear and top of the bathtub, the improvement comprising:

a. the end caps having formed thereon paper means reinforcing the ends of the shipping container from horizontal and vertical forces, said paper means including a hinged bottom flap formed on the end caps;

b. the bottom panel and the back panel both having formed along their longitudinal sides a second hinged tab, said second hinged tabs being overlapped and fixedly attached in such a manner that the second hinged tab on the bottom panel is fixedly attached to the outside of the back panel and the second hinged tab on the back panel tab is fixedly attached to the inside of the bottom panel thereby forming a longitudinal structural joint for reinforcing the tube member from longitudinal shock; and

c. a portion of the hinged bottom flaps on the end caps being interlocked with the second tab on the back panel so that a portion of the bottom flap is positioned between the second hinged tab on the back panel and the bottom panel whenever the tube member is formed around the bathtub.

6. The improvement as defined in claim 5 further comprising the front panel, the bottom panel, the rear panel and the top panel each having formed thereon a plurality of first hinged tabs that are fixedly attached to the respective end caps of the tube member whenever the tube member is formed around the bathtub.

* * * * *