July 11, 1933. H. R. BLISS 1,917,920

CONTAINER AND REENFORCEMENT THEREFOR

Filed Jan. 31, 1931

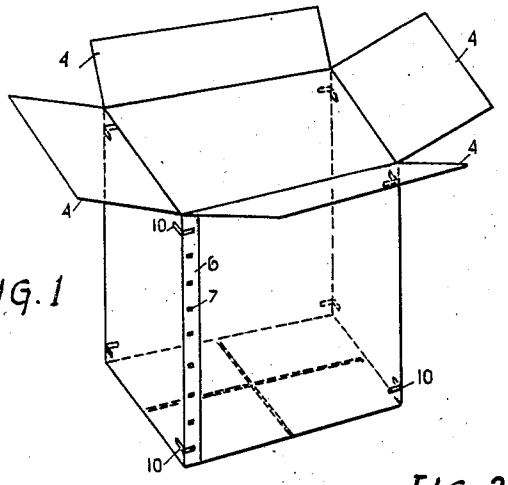
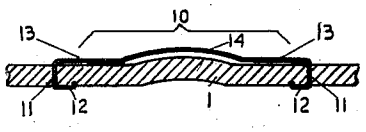


FIG. 1

FIG. 3



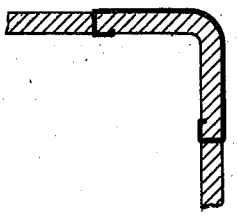
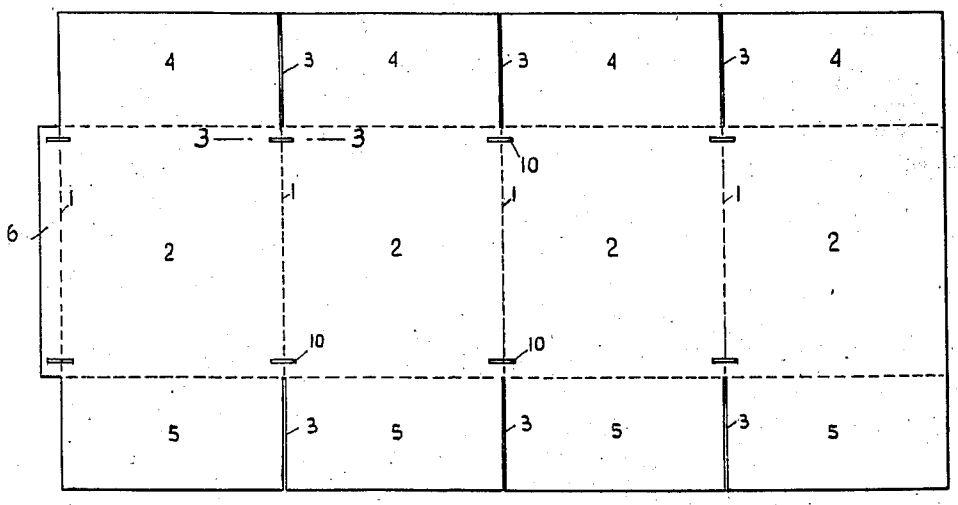


FIG. 4

FIG. 2



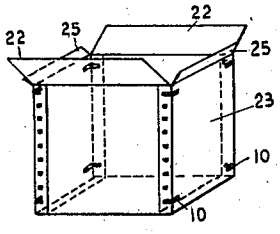


FIG. 5

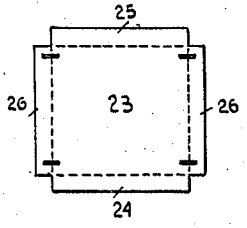


FIG. 7

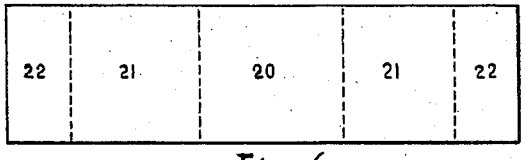


FIG. 6

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CONTAINER AND REENFORCEMENT THEREFOR

Application filed January 31, 1931. Serial No. 512,527.

This invention relates to the art of fiber board containers, boxes or cartons, such as for example, fiber board shipping containers, and has to do especially with the provision of a reenforced container and also to the reenforcement itself.

In accordance with the invention the container is reenforced particularly at some of its corners. An advantageous environment is a container wherein the grain of the fiber board is vertically disposed. The invention contemplates reenforcing the vertical corners to prevent the corners from ripping, breaking, or otherwise becoming ruptured. The particular reenforcement preferably takes the form of a metallic reenforcement member which may be in the form of a stitch and the arrangement is such that it preferably may be secured to the fiber board while the same is in blank form permitting, however, the blank to be bent to form a corner during which time the reenforcement is brought into its final reenforcing position.

In the accompanying drawing:

Fig. 1 is a perspective view of one form of container embodying the invention.

Fig. 2 is a plan view of a blank for making the container of Fig. 1, showing the reenforcing devices in position.

Fig. 3 is an enlarged cross sectional view taken substantially on line 3—3 of Fig. 2 showing the association of parts before the blank is shaped into box form.

Fig. 4 is an enlarged sectional view taken substantially on line 4—4 of Fig. 1 illustrating the reenforcement after the corner is formed.

Fig. 5 is a perspective view of a different type of box in which the invention may be embodied.

Fig. 6 is a plan view of one of the blanks for forming the Fig. 5 box.

Fig. 7 is another view of another one of the blanks for forming the Fig. 5 box, showing the reenforcing device in place.

The container, as shown in Fig. 1, is of the type ordinarily termed a regular slotted container formed of a single blank, as shown in Fig. 2, creased on the dotted lines 1 to form four parts 2 which become the four sides of the container, and slotted as at 3 to form four wings 4 for the top of the container, and wings 5 for the bottom. This blank is shaped generally into tubular form and it may be assembled by means of a flap 6 which is secured to the opposite end of the blank. This may be done by stitches 7. Other means may be provided for securing the ends of the blank together, as for example, the ends may be glued together or a tape may be employed. These variations relate largely to different box structures of which there may be a choice, and the present invention may be utilized in each.

The four lines of creasing form, when the box is assembled, the four vertical corners. The bottom wings 5 are folded to complete the bottom, as is appreciated by those skilled in the art and may be stitched, glued or taped, and of course after the container is filled the top wings 4 are folded to seal the top and they may be stitched, glued, or taped.

The reenforcing means for the corners may be utilized in any or all of the corners of the container, whether vertical or horizontal, but is especially useful in reenforcing the vertical corners. As shown in Fig. 1, each vertical corner is reenforced by a metallic reenforcing member 10. As shown in Fig. 3, this reenforcement may be in the form of a wire stitch. These wire stitches may be placed in the fiber board blank while it is as yet in substantially flat form and before it is shaped into the container, and as illustrated in Fig. 2, there is a reenforcement member near each end of each crease which forms a vertical corner. This permits of easily and rapidly placing the stitches into the flat blanks as they are fed past a stitching machine, so that no extra handling operations of the formed container are required.

A problem is involved however, in placing the stitches in the flat blank. This comes about by reason of bending the blank on the crease lines. As shown in Fig. 3, the stitch comprises a body or bight portion with legs 11 penetrating the fiber board clinched as at 12. In placing the stitch in the flat blank the bight portion preferably is not brought

into tight contact with the fiber board but is arranged to be slightly spaced therefrom. This bight portion bridges the crease 1, as clearly shown in Fig. 3, and the bight portion may advantageously have a configuration which generally conforms to the fiber board blank. Thus it will be noted that the body or bight portion of the stitch has straight side portions 13 with a centrally bowed part 14 which may correspond in general to the cross sectional shape of the crease. This particular shaping of the body of the stitch is not entirely necessary and the invention is of such scope as to cover the stitch whether it is shaped to correspond to the blank or not. When the blank is folded along a crease line, the stitch is drawn taut, as shown in Fig. 4. This tautness of the stitch causes it to effectively embrace the corner to reenforce it against ripping.

As heretofore mentioned, this reenforcement is especially advantageous in that environment where the grain of the fiber board runs cross wise of the blank, as shown in Fig. 2, thus vertically in the finished container. The vertical disposition of the grain strengthens the box vertically so that it resists crushing action when the boxes are stacked one upon another. It is easier to tear or rip the fiber board with the grain than across the grain, and accordingly, the vertical corners are more or less subject to being ripped or ruptured with the grain thus disposed. These reenforcing stitches, therefore, are advantageous in such a box structure. As shown in the drawing, one reenforcing stitch is used near the top of the vertical corner and one near the bottom. It is within the invention of course to employ as many reenforcing stitches as is desirable, or as many as suits the needs of any particular container. It will be appreciated that the use of the reenforcement is not limited to containers wherein the grain of the fiber board runs vertically, nor is the use of the reenforcement limited to the particular box structure as shown.

A different type of box structure is shown in Fig. 5, this being a three-blank case. The body blank, as shown in Fig. 6, is creased to form a bottom 20, sides 21 and top wings 22. The two ends are provided by blanks as shown in Fig. 7, creased to form an end wall 23, a bottom flap 24, top flap 25, and side flaps 26. As is appreciated by those skilled in the art, the bottom flaps 24 are secured to the bottom blank 20, the top flaps 25 to the top wings 22 and the side flaps 26 to the side blanks 21, as clearly shown in Fig. 5. This attaching may be accomplished in any suitable manner, but stitching is advantageous in a container of this character, although the parts may be glued or taped. In this form of container, the vertical corners are provided at the creases defining the side flaps 26. The corner reenforcing stitches may be taken in the end blanks, as shown in Fig. 7, so that when the flaps 26 are bent the stitches become taut after the manner above described. It will also be appreciated that other types of containers may employ the invention; that any number of reenforcing stitches may be employed at any particular corner; and that horizontal as well as vertical corners may be reenforced.

Shipping cases are very often packed, as for example, with canned goods and sometimes kept in storage without having been sealed. Some of the contents are taken out at times, and sometimes replaced and this places severe requirements upon the upper parts of the vertical corners. The invention contemplates using the reenforcing stitches merely near the upper parts of the vertical corners. The containers, such as for example, the slotted container shown in Fig. 1, is in the form of a collapsible tube before final assembly, and is often shipped collapsed, and it has been found that this flattening of the container may be done without materially affecting the reenforcing properties of the stitch.

What is claimed is:

The method of applying a metallic U-shaped stitch for reenforcing the corner of a fiber board container comprising driving the legs of the U-shaped stitch through a fiber board blank while the blank is substantially in flat form with the legs penetrating the blank on opposite sides of a crease line, and with the body of the stitch bridging the crease line and substantially at right angles to the crease line, clinching the legs of the stitch against the fiber board on the side opposite the body of the stitch whereby the end portions of the body of the stitch and the clinched portions of the legs tightly grip the fiber board, leaving the center portion only of the body portion of the stitch spaced from the fiber board, and then bending the fiber board on the crease line to form a corner with the body of the stitch on the outside whereby the center portion of the body of the stitch is drawn taut and against the fiber board.

In testimony whereof I affix my signature.

HERBERT R. BLISS.