

April 14, 1942.

G. F. FORD ET AL

2,279,670

BOX

Filed April 7, 1939

Fig. 1

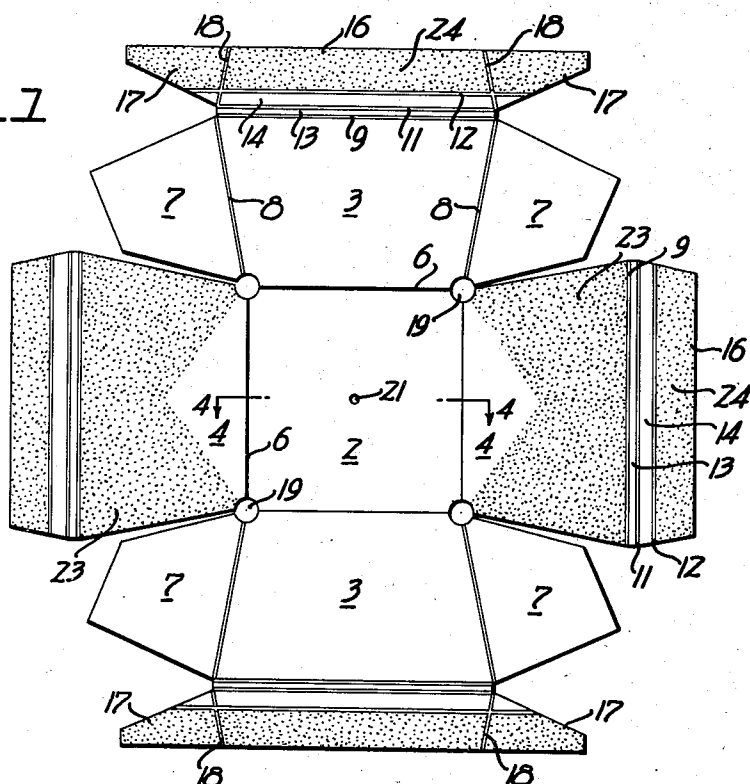


Fig. 2

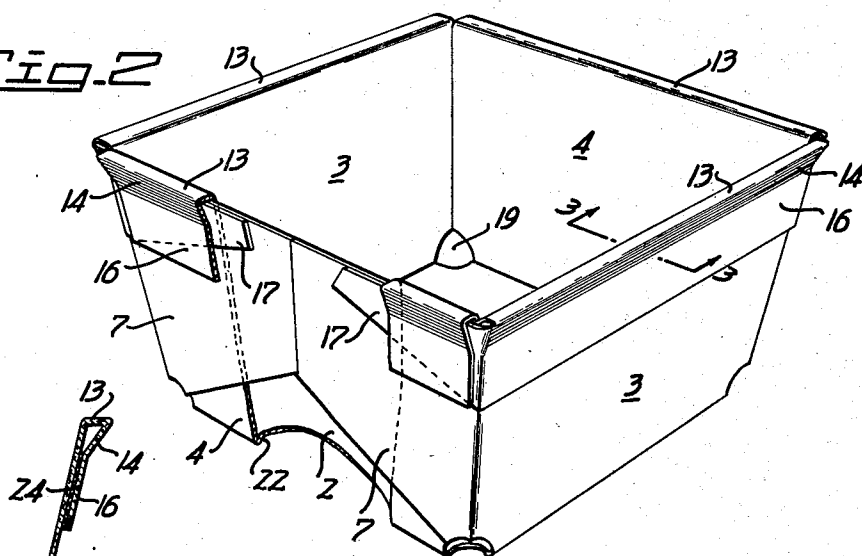


Fig. 3

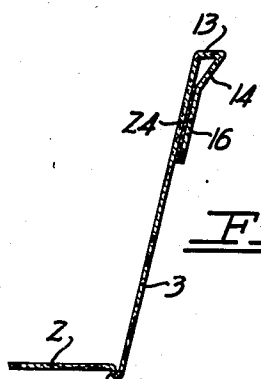
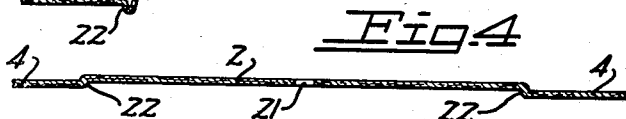


Fig. 4



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2,279,670

BOX

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Application April 7, 1939, Serial No. 266,560

2 Claims. (Cl. 229—32)

Our invention relates to boxes or baskets folded from flexible sheet material, such as fibreboard.

It is among the objects of our invention to provide a box having a bead along the rim to reinforce the walls.

A further object is to provide a bead of the character described, having a substantially flat top flange to provide a rest for upper boxes in a stack and to enhance the reinforcement properties of the bead.

Another object is to provide a box having ribs or legs integrally formed along the base of the walls to reinforce the latter and to elevate the bottom.

Still another object is to provide improvements in the blank from which the box is folded.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of our invention. It is to be understood that we do not limit ourselves to this disclosure of species of our invention, as we may adopt variant embodiments thereof within the scope of the claims.

Referring to the drawing:

Figure 1 is a plain view of the blank from which our box is folded; and

Figure 2 is a perspective view of the box with portions broken away to show the construction more clearly.

Figure 3 is a fragmentary vertical sectional view of the box taken in a plane indicated by line 3—3 of Figure 2; and

Figure 4 is a fragmentary vertical sectional view of the blank taken in a plane indicated by line 4—4 of Figure 1.

In fibreboard boxes, such as berry baskets, it is important to provide reinforcement about the rim to give strength to the walls and to provide a rest for upper boxes in a stack. Berry boxes are usually packed in tiers, three deep, in a crate, with cross pieces resting on the rims of the boxes between the layers to support those above. With ordinary paper or fibreboard berry boxes it is not uncommon for the thin edges and sides of the boxes to cave in under the load of upper boxes, thus causing damage to the fruit. In our improved structure the rims of the boxes are reinforced to strengthen the edges and sides, and the reinforcing means is designed to provide a flat rest for upper boxes in a stack. Our improved box is also provided with reinforcement about the base of the walls, and the bottom wall is preferably elevated to space

it from the surface upon which the box rests to give further protection to the contents.

In terms of broad inclusion, the box of our invention comprises a wall having a flap folded down from the upper edge to provide a bead along the rim of the box. The flap is preferably folded with a substantially horizontal flange portion projecting laterally from the edge of the wall to form a bead having a flat top of material width, thus giving strength against transverse bending and also providing a snelf-like resting surface. The rim flap also preferably has a portion folded back at an angle toward the wall to provide a brace with a skirt portion extending downwardly for fastening the brace to the wall. The flap may be folded either inwardly or outwardly. A leg is also preferably formed along the base of a wall to elevate the bottom and to further reinforce the box.

In greater detail, and referring to Figures 1 to 4 of the drawing, the preferred box or basket embodying our invention is folded from a blank suitably cut and creased from a flexible sheet material such as fibreboard. As shown in Figure 1, the blank comprises a bottom portion 2 having side and end walls 3 and 4 foldably connected thereto along lines 6. Walls 3 and 4 are preferably wider at the top and are provided with sloping side edges so that the walls flare out when the box is set up. End flaps 7 are also foldably connected to side walls 3 along score lines 8.

The blank also includes rim flaps foldably connected to the outer edges of the walls along score lines 9; each rim flap being divided longitudinally by a pair of parallel score lines 11 and 12. These latter score lines are spaced to divide each flap into a relatively narrow inner flange portion 13, a central brace forming portion 14 and an outer skirt portion 16. Tabs 17 are also provided at the ends of the flaps on the side walls, and are connected to the edges of flap portions 14 and 16 along score lines 18. Circular apertures 19 are shown at the corners of bottom wall 3 for ventilation, and a drain and vent hole 21 is shown at the center, but these apertures may be arranged differently or omitted entirely.

An important feature of the blank, as best shown in Figure 3, is the elevation of bottom wall 2 above the plane of walls 3 and 4. The boundary lines are deformed to provide offsets 22 for elevating bottom portion 2 above the plane of the blank, and this may be accomplished in any

suitable manner, as by pressing out the bottom with a die when the blank is formed.

When the box is set up, walls 3 and 4 are folded up from the bottom wall as shown in Figure 2. This up-turning of the walls creates V-shaped folds at the base, due to the offset portions 22, and the latter extend downwardly from the bottom wall to form legs. These legs serve to elevate the bottom above the surface upon which the box rests, thereby giving added protection to the contents. The reverse fold at the offsets forms sturdy legs of double thickness, and these legs also function as reinforcing ribs at the base of the walls to strengthen the box. It is to be noted that the legs or ribs are formed by the simple act of folding up walls 3 and 4 at the time the box is set up; this advantage being gained because of the offsets made when the blank is formed.

After the side and end walls are turned up the flaps 7 are folded to overlie end walls 4 and are adhesively united to the walls by suitable glue 23 applied to the blank. The rim flaps are then folded outwardly and are adhesively united to the walls and end flaps by glue 24 previously applied to the blank. The rim flaps on the side walls are turned down first so that end tabs 17 may be folded in over the end walls before the flaps of the end walls are folded down.

Inner portions 13 of the rim flaps are preferably folded out to substantially horizontal positions to form flanges projecting laterally from the walls. Central portions 14 of the flaps are then folded downwardly and inwardly toward the walls to form angular braces; and the outer skirt portions 16 are disposed to extend downwardly over the walls to provide sealing skirts. Placement of strip portions 16 below the braces is an important feature, because the sealing skirts in effect form abutment pieces for the braces; and the depending skirts are readily glued to the walls.

Folded in this manner, the rim flaps provide substantially triangular reinforcing beads along the upper edges of the box. The hollow beads

act as beams, and as such resist bending. Horizontal flanges 13 give the beams strength against transverse bending stresses, and braces 14 not only support the flanges but also function to resist downward bending. The boxes of our invention may therefore be stacked without danger of the walls caving in.

Another decided advantage of rim beads is that they provide a flat rest for boards or racks that are interposed between the stacked boxes. The width of the bead may be varied within wide limits;—from a narrow width formed by folding the rim flap directly down from the edge of the wall, to a wide surface formed by providing a flange portion 13 of material width. If the rim flap is turned directly down from the edge of the wall, the horizontal flange portion 13 is eliminated and the flat resting and reinforcing properties of the bead are not fully achieved.

We claim:

1. A box comprising a bottom, side and end walls folded upwardly from the bottom, a rim flap folded along an upper edge of each of said walls to provide triangularly shaped beads projecting outwardly from the box, each of said beads having a depending skirt portion, and end tabs foldably connected to the side wall beads and underlying the end wall beads.

2. A box comprising a bottom, side and end walls folded upwardly from the bottom, end flaps foldably connected to end edges of the side walls and overlapping the end walls, a rim flap folded along an upper edge of each of said walls to provide triangularly shaped beads projecting outwardly from the box, the side wall beads having depending skirts overlapping the outer surfaces of the side walls and secured thereto, said end wall beads having depending skirt portions overlapping the outer surfaces of the end flaps and secured thereto, and end tabs foldably connected to the side wall beads and interposed between the end wall beads and said end flaps.

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