

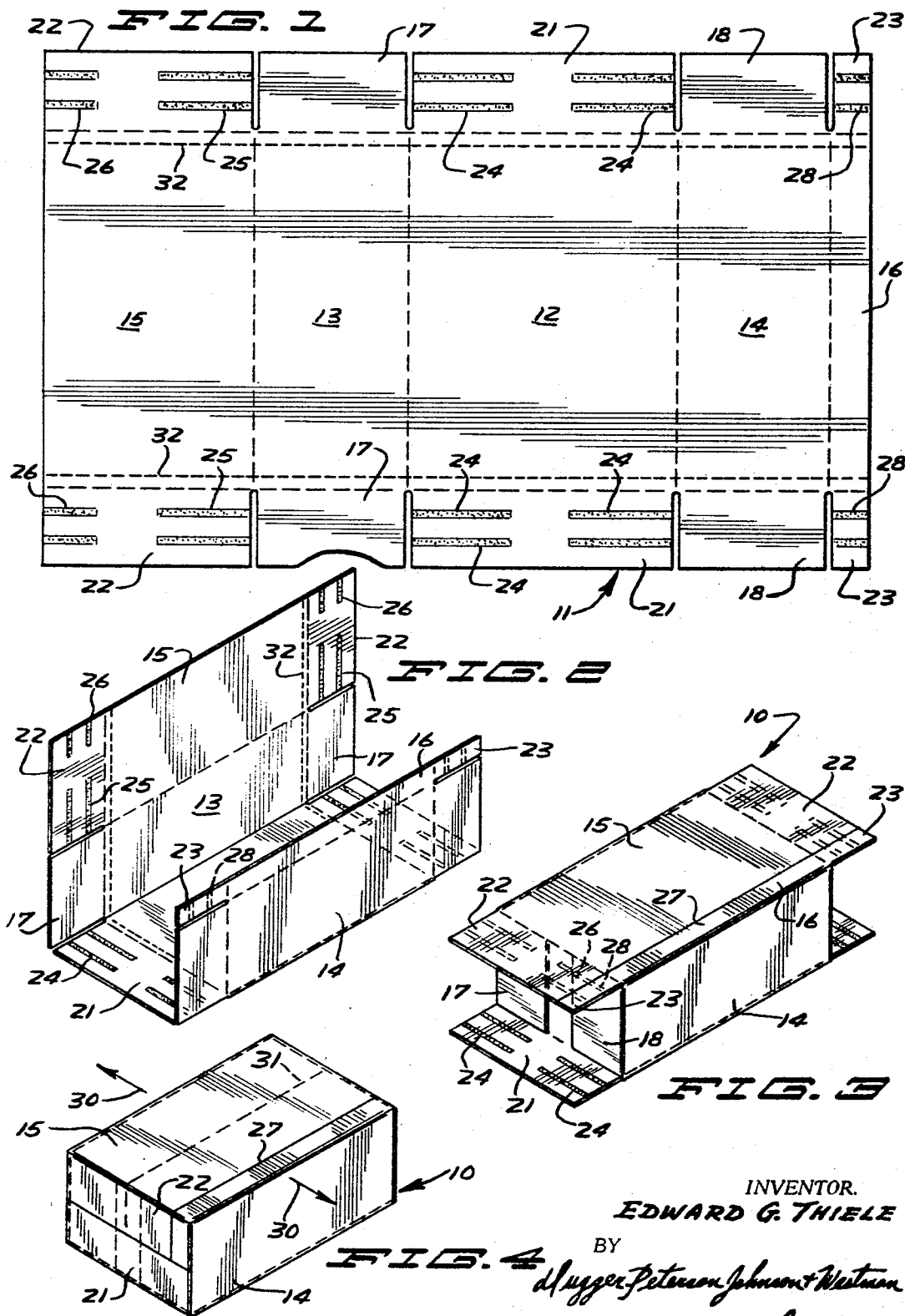
Aug. 20, 1968

E. G. THIELE

3,397,832

OFFCENTER BUTT JOINT FOR CARTONS

Filed April 17, 1967



1

3,397,832

OFFCENTER BUTT JOINT FOR CARTONS

Edward G. Thiele, Minneapolis, Minn., assignor to
Cherry-Burrell Corporation, Minneapolis, Minn., a
corporation of Delaware

Filed Apr. 17, 1967, Ser. No. 631,226

3 Claims. (Cl. 229—37)

ABSTRACT OF THE DISCLOSURE

The present disclosure relates to a five panel carton having an off center top butt joint and constructed to have good carton strength (resistance to splitting) in transverse direction without having a strip of tape across the top seam or without lapping and gluing the top panels on the carton. This permits the use of a perforated inner liner in the corrugated paper board used for making the carton to facilitate opening. When erected, the carton of the invention has two top panels that meet along a butt joint that is adjacent one edge of the carton. Each of the top panels has an end panel and these end panels fold down along the ends of the carton. The portions of the end panels that are adjacent the seam between the two top panels are glued to the same end flap (attached to the side panels of the carton) so that there is structural strength preventing the seam between the top end panels from separating when the carton is loaded in a transverse direction.

BACKGROUND OF THE INVENTION

(1) *Field of the invention.*—The invention relates to cartons particularly for shipping case loads of can goods and using five panels, a minimum amount of cardboard, and having glued end joints.

(2) *Description of the prior art.*—In standard shipping cartons, several forms are used. Some cartons use overlapped joints at the end panels, such as that shown in U.S. Patent No. 3,209,981. In this patent the top lap joint at the top of the carton is left unsealed to permit easy opening of the carton, while the lap joint at the ends is glued to give the carton structural strength in transverse direction when it is closed. However, this leaves an irregularity (two thicknesses of paper board) on the top of the carton making stacking somewhat difficult and also this lap has a tendency to hook when cartons are slid off one another. The lap joints use more paperboard, and when the quantities of cartons are high this becomes a significant factor.

The standard cartons using five panels have a butt joint down the top center of the carton, but these cartons then do not have a great deal of structural strength because the butt joint is unfastened unless a conventional tape seam or similar device is employed. The boxes then tend to split along this butt joint because they are not held together at the ends.

Other cartons have a single cover panel with a flap attached to the cover and folded against and glued to one side panel of the carton. These cartons are more expensive to make and more difficult to glue closed.

SUMMARY OF THE INVENTION

The present invention relates to the formation of a five panel carton having an untaped, unglued off center butt joint between two cover or top panels which permits easy opening of the carton to remove canned goods stored inside the end panels attached to the cover or top panels are glued to a common end flap to provide for good transverse strength when the carton is closed. Off setting the butt joint between the top panels so that the joint or seam is adjacent one side of the carton, aligns the joint with a

2

common end flap attached to the side panel of the carton. By gluing to a common end flap, the joint on the ends of the carton do not tend to separate after it has been glued.

DESCRIPTION OF THE DRAWING

FIGURE 1 is a flat plan layout of a carton blank made according to the present invention;

FIGURE 2 is a perspective view showing the carton at its initial stages of being folded;

FIGURE 3 is a perspective view of the device of FIGURE 2 showing the carton partially closed; and

FIGURE 4 is a perspective view of the carton after it has been fully assembled with a product inside the carton.

Referring to the drawings and the numerals of reference thereon, a carton or box illustrated generally at 10 is made from a blank 11 having five panels. The blank has a bottom panel 12, a first side panel 13 and a second side panel 14, both attached to the bottom panel 12. A first top panel 15 is attached to the first side panel 13 and a second top panel 16 is attached to the second side panel 14. As shown, the panels are all hinged to each other so that they can be folded along their junction lines.

In forming the carton for loading product into it, the product is usually placed on the bottom panel and the side panels are folded upwardly as shown in FIGURE 2. Then after the carton has been filled (usually with canned goods) the top panels 15 and 16 are folded to position as shown in FIGURE 3. In order to close the ends of the cartons, at each end of the carton the construction is identical. The side panel 13 has two first end flaps 17 attached thereto (at opposite ends), and side panel 14 has two second end flaps 18 attached thereto at opposite ends. Bottom panel 12 has two lower end panels 21 attached thereto, one at each end. First top panel 15 has two cover end panels 22 attached thereto and second top panel 16 has two short cover end panels 23 attached thereto.

The end flaps 17 and 18 are spaced, as shown, and in any event are not fastened together.

In assembly, the end flaps 17 and 18 are folded in so they are parallel. Glue strips indicated at 24 are applied to the lower end panels in position so that when the bottom or lower end panels 21 are folded up they will contact and be glued to the aligning end flaps 17 and 18. Glue strips 25 and 26 are placed on cover or upper end panels 22 and glue strips 28 are applied to cover or upper end panels 23. It will be noted that the joint 27 is positioned adjacent to side panel 14 and is in alignment with the end flap 18.

Then, the carton is closed as shown in FIGURE 3 and the glue strips 26 and 28 contact the end flaps 18 (the other glue strips contact the end flaps as well) and will hold the end panel 22 and end panel 23 at each end against the same end flap 18. This means that the upper end panels 22 and 23 cannot separate along line 27 at the ends of the carton. Thus when there are forces tending to cause the carton to separate, such as forces shown by the arrows 30, the load is transferred to the end panels 22 and 23 and these are held together by the glue strips 26 and 28 to the common end flap 18 so that there is no weakness in the ends of the box which permit the box to split open easily. If for example the butt joint was along the line shown at dotted lines in 31 as is common to the present time, the joint between the two end panels attached to the top panels would be open, unattached, and the carton or box would tend to split along this line. Applying tape to this joint or seam is difficult to do and involves additional expense.

As shown in FIGURE 1, there are perforations on the inner sheet of paper on the corrugated carton and these perforations are indicated at 32. These perforations will

3

provide a guide for easy opening of the carton. In the present invention the joint 27 is open between the two top panels 15 and 16 and this permits a person wanting to open the carton to remove the product to insert his hand between panels 15 and 16 and easily tear the carton open guided by these perforations. With lap joints that are glued of course, the carton cannot be easily opened and the advantages of the easy opening perforations are not present. Where butt joints are used, normally the butt joint is in the center of the case and this makes the case much less desirable for shipping cans and the like because of the weaknesses. The present invention eliminates this weakness and saves cost over lap joints such as that shown in Patent No. 3,209,981 as well as making the cartons flat across the top and easier to stack.

Perhaps a word about the easy opening perforations mentioned previously would be in order. As is known, there are two layers of kraft paper with a paper corrugation inbetween in making corrugated paper board. Waldorf Paper Company has advanced the improvement of perforating the inner liner only of the kraft paper so that easy tear or a guided tear can be made. The outer liner of kraft paper is not perforated so the carton does not lose any substantial amount of strength, but merely has a guide for opening. By using the butt joint disclosed, this improvement is available because the person removing the product can insert his hand to tear the panels along the perforations. Yet, the carton is as strong as the conventional RSC cartons and is still able to be stacked well because it has a flat top and does not have any lapped joints for wasting the cardboard.

What is claimed is:

1. A shipping case filled with a product to be shipped, said case comprising a bottom panel having opposite ends, a pair of side panels joined to said bottom panel and extending substantially at right angles thereto, each

4

side panel having opposite ends, an end flap for each side panel end joined to the respective side panel and extending toward the opposite side panel, a bottom end panel attached to each end of said bottom panel extending upwardly to overlie the end flaps, first and second top cover panels, one hingedly attached to each of said side panels, said cover panels each having a pair of cover end panels attached thereto at opposite ends thereof, said cover panels being co-planar when in position substantially parallel to the bottom panel and covering said carton and edges thereof being adjacent along a butt joint, said cover end panels being folded to overlie said end flaps on each end of the case and being co-planar with and substantially abutting said bottom end panels and glue means to hold said cover end panels and said bottom end panels against said end flaps and comprising the sole fastening means for the shipping case, at least a portion of each of the cover end panels at each end of the carton being secured to a common end flap.

2. The combination as specified in claim 1 wherein the end flaps are spaced apart a substantial distance when closed, and wherein the cover panels are of size so that the joint between the cover panels is positioned adjacent to one of said side panels.

3. The combination as specified in claim 1 wherein the end flaps on the same end of the case and on opposite side panels are spaced apart.

References Cited

UNITED STATES PATENTS

1,555,045	9/1925	Walter	229—48 X
3,085,734	4/1963	Kauffeld	229—51
3,209,981	10/1965	Thiele	229—48

DAVID M. BOCKENEK, *Primary Examiner*.