April 19, 1955 R. M. DUNNING 2,706,594

BOTTLE CASES

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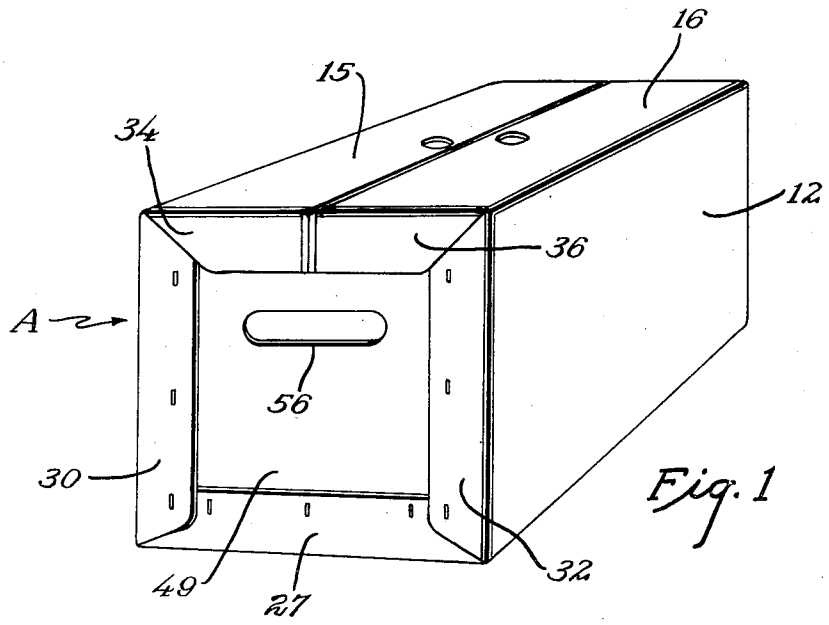


Fig. 1

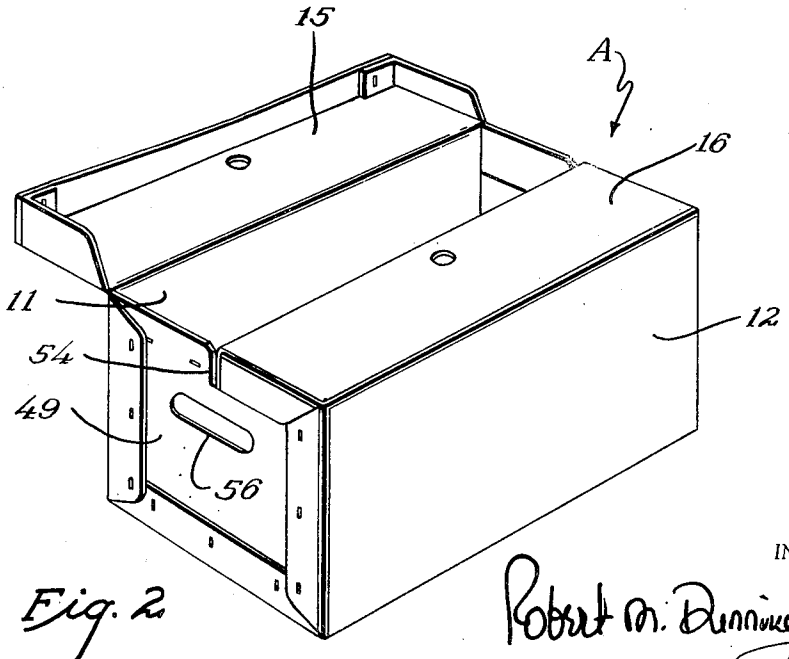


Fig. 2

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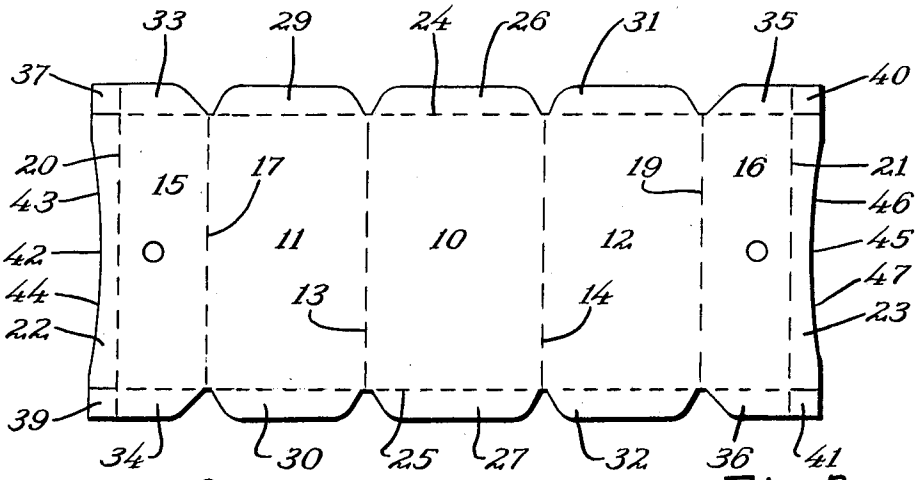


Fig. 3

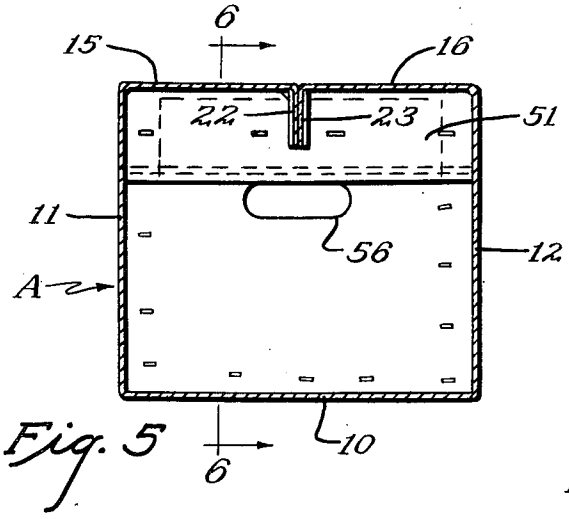


Fig. 5

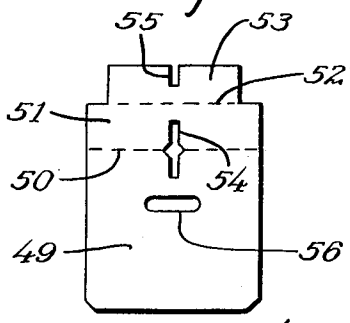


Fig. 4

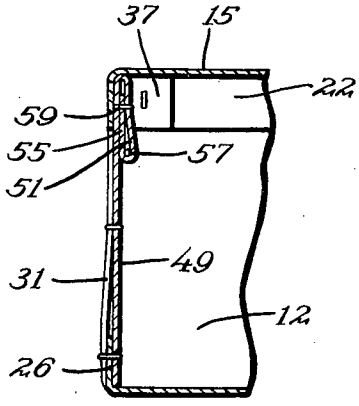


Fig. 6

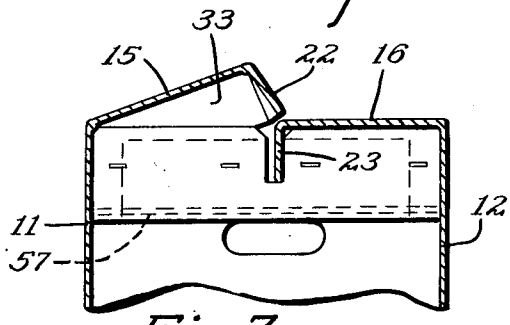


Fig. 7

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BOTTLE CASES

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Application November 18, 1950, Serial No. 196,469

3 Claims. (Cl. 229—44)

My invention relates to an improvement in bottle cases wherein it is desired to provide a case of a type which may be used for bottled goods and the like.

Cases containing bottled goods, such as beer and the like, are often cases having two opposed cover flaps. These flaps are hinged to opposite sides of the case and fold down into case closing position. Many such cases are provided with slots in the end walls through which flanges on the cover may extend. With such an arrangement the lifting strain caused by lifting the case from one end thereof is transferred through the cover and to the opposite end of the case, thus reinforcing the same. Most such cases are accordingly weakened by providing a slot and a hand hole in the end panel of the case. Most such cases also employ a reinforcing strip extending along the longitudinal cover flanges to reinforce these flanges and prevent the same from bowing outwardly.

A feature of the present invention lies in the provision of a case which is somewhat stronger than those previously used for this purpose. The end panels are reinforced and therefore the case may be subjected to greater strain. Furthermore, the reinforcing strip on the cover flanges is eliminated, thereby decreasing the cost of production.

A feature of the present invention lies in the provision of an end panel having a folded structure and in providing a reinforcing rod in the fold of material directly above the hand hole through the end panel. This rod tends to reinforce the end of the container and to transmit the pulling strain from the area of the end panel directly above the hand hole across the full width of the end panel. As a result the case may be lifted by one end even if the cover is not closed, without destroying the end panel.

Cases of the type in question possess considerable strength when the cover is in closed position as the top of the end wall as well as the sides and bottom thereof are all connected to the opposite end panel. When a case of the type in question is picked up by one end, considerable weight is directed against the opposite end due to the substantial weight of the contents of the case. If the cover is not closed, the upper portion of the end panel which comprises the weakest portion of the end panel is subjected to sufficient strain to bend or break one or both end panels. By reinforcing this portion of the case in a transverse direction, the pull upon the weakened area of the end wall is considerably reinforced.

A feature of the present invention resides in the provision of a novel means of drawing the longitudinal cover flanges into proper position as the cover is closed. As the cover flanges form an integral part of the top panels and are connected thereto along a fold line, there is a tendency for the central portion of the flanges to bulge outwardly. The ends of these flanges are held in place by connection with the side cover flanges, but the center portion of the longitudinal flange is free to bulge. I avoid this difficulty by tapering the longitudinal flanges in such a way that these flanges are narrower at their center than at their extremities. Therefore the ends of the flanges move into position before the center portion of the flange may engage the opposite part of the cover. The outwardly bulged center portion of the longitudinal cover flanges is then drawn into proper position as the cover swings downwardly.

These and other objects and novel features of my invention will be more clearly and fully set forth in the following specification and claims.

In the drawings forming a part of my specification:

Figure 1 is a perspective view of the case in closed position.

Figure 2 is a perspective view of the case with one portion of the cover in open position.

Figure 3 is a diagrammatic view of the blank of which the body portion of the case is formed.

Figure 4 is a diagrammatic view of the blank of which the two ends are formed.

Figure 5 is a sectional view of the case in closed position.

Figure 6 is a sectional view through one end of the case, the position of the section being indicated by the line 6—6 of Figure 5.

Figure 7 is a sectional view similar to Figure 5, but showing one portion of the cover in partially open position.

The case is indicated in general by the letter A. The case A includes a body portion best illustrated in Figure 3 of the drawings. The body portion includes a bottom panel **10** and side wall panels **11** and **12** connected thereto along parallel fold lines **13** and **14**. A pair of cover panels **15** and **16** are hinged to the wall panels **11** and **12** respectively along parallel fold lines **17** and **19**. The cover panels **15** and **16** are connected along parallel fold lines **20** and **21** to cover flanges **22** and **23** respectively. The cover flanges **22** and **23** are designed to form the flanges which extend longitudinally of the case from one end thereof to the other.

The bottom panel **10** and the wall panels **11** and **12** are connected at their ends along parallel fold lines **24** and **25** to stitch flaps designed to overlie portions of the end panels. The bottom panel **10** is connected at opposite ends to stitch flaps **26** and **27**. The side wall panel **11** is connected along the fold lines **24** and **25** to stitch flaps **29** and **30**. The side panel **12** is connected along the parallel fold lines **24** and **25** to stitch flaps **31** and **32**. The cover panel **15** is also connected along the fold lines **24** and **25** to cover end flaps **33** and **34**. The cover panel **16** is likewise connected along the fold lines **24** and **25** to cover end flaps **35** and **36**. The flaps **33** and **34** are connected along extensions of the fold line **20** to flap connecting tongues **37** and **39**. The flaps **35** and **36** are connected along extensions of the fold line **21** to tongues **40** and **41**.

As indicated in Figure 3 of the drawings, the flanges **22** and **23** are not of constant width throughout their length. Preferably these flanges **22** are tapered in such a manner as to provide a widest point near the opposite ends of the flange to a narrower point at the center of the flange. In the particular form of construction illustrated, the flange **22** is provided with an edge portion **42** which is at the center of the flange and which is parallel to the fold line **20**. From the ends of each portion **42** the edge tapers outwardly as indicated by the lines **43** and **44** to the full width of the flap. Alternatively the inclined edge portions **43** and **44** could extend to an apex at the center of the flange **22**, but such a structure is not quite as strong as the arrangement illustrated due to the tendency of the flange **22** to crease at the apex of the inclined lines.

The flange **23** is similarly provided with a central edge portion **45** which is parallel to the fold line **21** and extends a short distance to either side of the center of the flange. The edge portion **45** is connected by inclined edge portions **46** and **47** to the widest portions of the flange which are near the ends thereof.

In Figure 4 of the drawings I disclose the end panels of the case. These end panels include a wall panel **49** connected along a fold line **50** at its upper extremity to a reinforcing flange **51**. The flange **51** is connected along a fold line **52** to a flap **53** which is designed to fold between the flange **51** and the panel **49**. A slot **54** extends into the wall panel **49** and also into the flange **51**. The flap **53** is also notched as indicated at **55** to correspond with the slots formed by folding the flange **51** against the panel **49**. A hand hole **56** is also provided at a point spaced from the fold line **50** substantially equal to the width of the flange **51**.

The case A is set up by first forming the end panels into their finished condition. In accomplishing this re-

sult the flap **53** is folded to overlie the inner surface of he flange **51** and to accommodate a reinforcing rod 57 along the fold line **52**. Both the flap **53** and the lange **51** are next folded inwardly along the fold line **50** so that the combined flap and flange overlie the end surface of the end panel **49**. Two or more stitches such as 59 are then inserted through the folds of material in order to hold them in proper relation. The rod **57** extends substantially the full width of the end panel **49** so as to transmit strain throughout the width of the case.

After the ends are assembled as described they are attached to opposite sides of the body portion shown in Figure 3. The cover is formed by stitching the corner tongues **37**, **39**, **40** and **41** to lie inwardly of the cover flanges **22** and **23**. The ends are next placed inwardly of the inturned stitch flaps and are stitched thereto. As will be obvious to those skilled in the art, the stitch flaps **26**, **29**, **30** and **31** overlie and are stitched to one end of the case while the stitch flaps **27**, **30** and **32** are stitched to, and overlie the other end of the case.

The case will then appear as in Figures 1 and 2 of the drawings. The flanges **22** and **23** extend through the slots formed in the end walls of the case and these flaps act to connect opposite end walls of the case in closed position of the cover. The flanges **33**, **34**, **35** and **36** overlie the end panels of the case and hold the two end panels in predetermined relation. Therefore when the case is picked up by one end and the contents of the case slide against the opposite end, the weight of the contents is transmitted throughout the case.

It will be noted that a relatively short distance separates the slots formed by the slots **54** and **55** and the hand holes **56**. Therefore, the upper portion of the end walls of the case are usually relatively weak. The reinforcing rod **57** transmits end pull on the end wall adjacent the hand hole throughout the entire width of the end, thus preventing injury to the case as the case is picked up by one end with the cover open or if the case is pulled longitudinally by one end with the cover open. Without such reinforcement the case tends to buckle in the center when a pull is exerted thereupon.

As shown in Figure 7 of the drawings, the tapering of the flanges **22** and **23** tends to prevent injury to the cover when the case is closed. If the flange is of full width and one portion of the cover is closed as indicated in Figure 7, the flange of the other cover portion would engage upon the upper surface of the closed cover section and prevent closing of the second cover section. If one case is piled upon another when one cover section is partially open, the cover would be torn or creased by the weight of the upper case. This difficulty is overcome by tapering the flanges **22** and **23**. As the second cover section closes the end portions of the flange engage the closed cover portion in advance of the time the center part of the longitudinal flap may engage the closed cover section. The ends of the flanges **22** and **23** are held in right angular relation to the cover panels by the stitched

tongues **37**, **39**, **40** and **41**. Therefore the ends of the flanges will move down into place and gradually cam the outwardly bulged center portion of the flange into position. In other words, if the ends of the flanges **22** and **23** fold down properly in place, the inclined portions of the flanged edges act to cam the center portion of the flange down into place. As a result injury to the cover panels is prevented and the cover panels close properly even when the center portions of the flanges bulge outwardly.

In accordance with the patent statutes, I have described the principles of construction and operation of my bottle case, and while I have endeavored to set forth the best embodiment thereof, I desire to have it understood that obvious changes may be made within the scope of the following claims without departing from the spirit of my invention.

I claim:

1. A container including a bottom panel, side wall panels connected thereto, end wall panels connected to said side wall panels and bottom panel, a pair of cover panels connected to the upper edges of said side panels, a flange on each said cover panel and extending downwardly at substantially right angles with respect thereto, end flaps foldably connected to opposite ends of said cover panels, tongues connecting the said end flaps of each cover panel to a corresponding one of said flanges to hold all of said flanges and flaps of each cover panel at substantially right angles to the cover panel to which they are attached whereby said flanges may engage in surface contact in closed condition of the container, each said first named flange gradually increasing in width from the longitudinal center toward the flange ends.

2. The structure described in claim 1 and in which portions of the edges of the first named flanges are cut along inclined lines converging near the longitudinal center of each such flange.

3. The structure described in claim 1 and in which the edges of the first named flanges opposite the edges connected to said top panels are cut along a line parallel to the fold line connecting the flanges to their respective top panels for a short distance near the longitudinal center thereof, and are cut along inclined lines from the parallel center portion, said inclined lines causing the width of the flanges to increase near the longitudinal ends of these flanges.

References Cited in the file of this patent

UNITED STATES PATENTS

2,006,822	Andrews	July 2, 1935
2,078,087	Lincoln, Jr.	Apr. 20, 1937
2,250,746	Burr	July 29, 1941
2,308,050	Burr	Jan. 12, 1943
2,382,819	Richards et al.	Aug. 14, 1945
2,612,305	Klasing et al.	Sept. 30, 1952