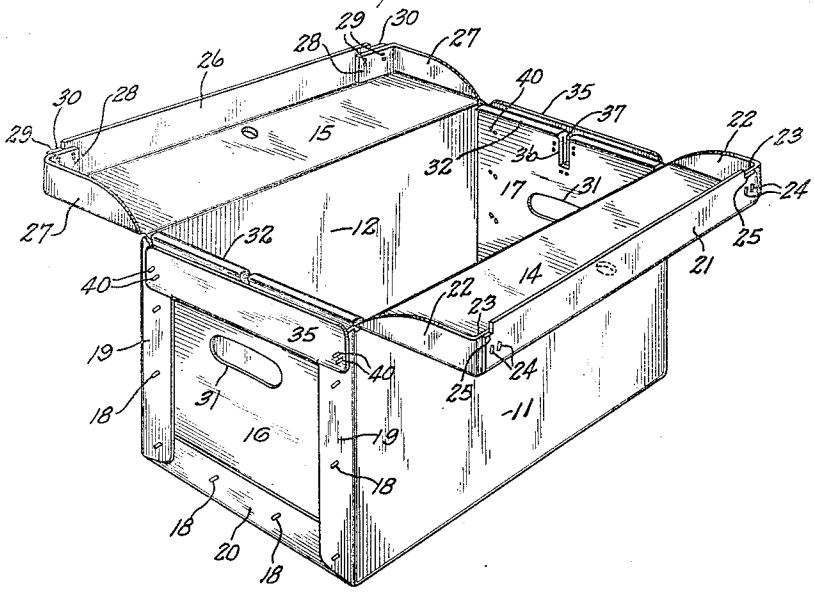
Aug. 14, 1945. J. R. RICHARDS ET AL 2,382,819

CONTAINER

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Fig. 1.



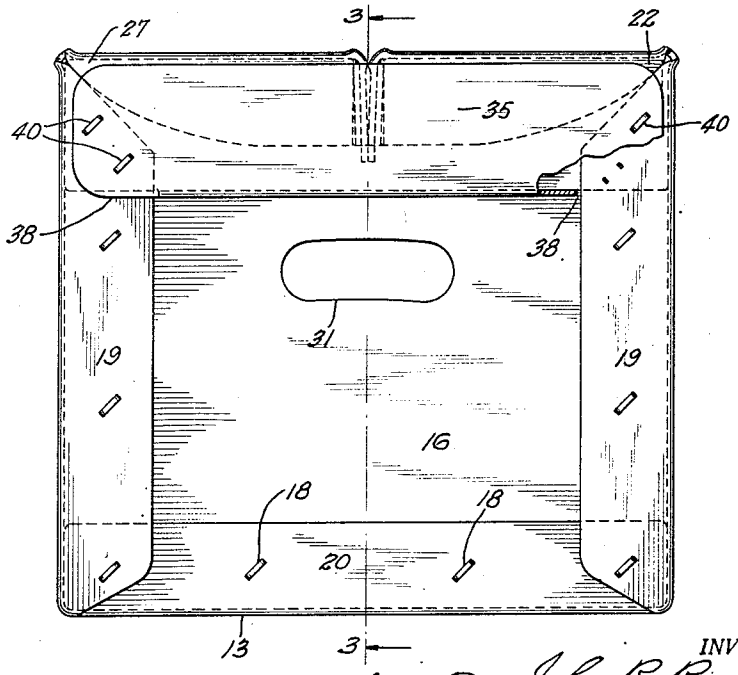


Fig. 2.

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Fig. 3.

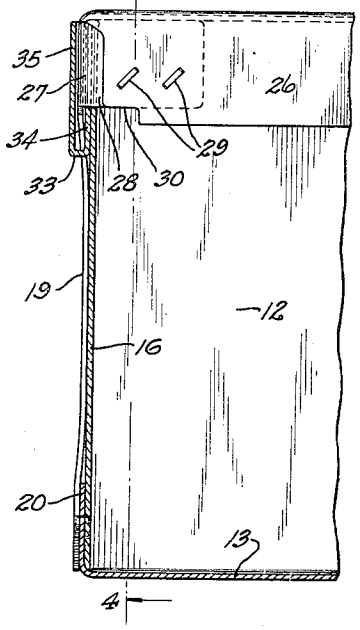


Fig. 5.

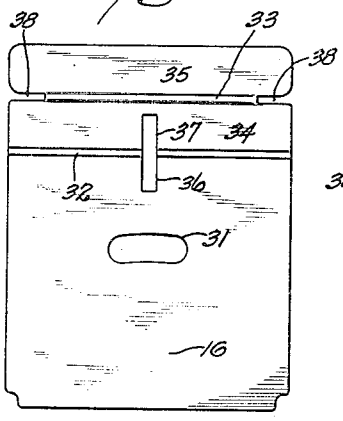
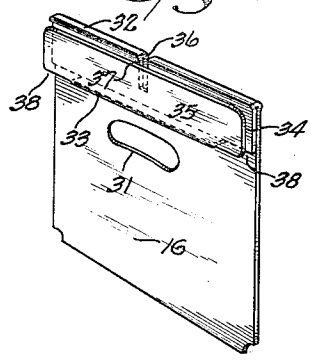


Fig. 6.



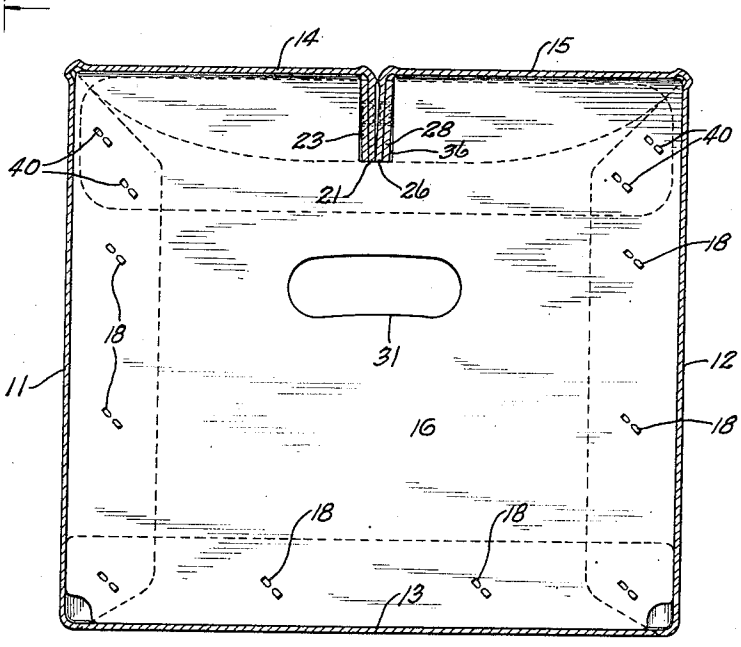


Fig. 4.

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UNITED STATES PATENT OFFICE

2,382,819

CONTAINER

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Application February 11, 1944, Serial No. 521,936

8 Claims. (Cl. 229—44)

This invention relates to improvements in containers, and more particularly to containers adapted for the transportation and handling of bottled or canned beverages such as beer.

Containers formed of fiberboard have in recent years, because of their relatively inexpensive nature and lightness in weight, become increasingly popular for use as beverage cases in lieu of the wooden boxes formerly employed. Two types of fiberboard containers are commonly used. One type, the single shipment variety, is formed of relatively light-weight fiberboard and is of a very inexpensive nature. The other type, with which the present invention is concerned, must be constructed to stand up satisfactorily when re-used seven or eight times. Containers of this latter variety as heretofore constructed have, however, been objectionable for a number of reasons. Inasmuch as it is common practice to pick up a beverage case by the hand hole of one end wall only, a great deal of strain is placed on said end wall, causing tearing, particularly at the corners. In addition, the usual fiberboard container of this type will not withstand a large amount of inward pressure on the side or top and will not withstand pressures applied to two diagonally opposite corners. Furthermore, difficulty has been encountered in maintaining the hinged covers against popping open during handling.

It is, therefore, a general object of the present invention to provide an improved fiberboard container which is constructed in a novel manner to provided greater rigidity in all directions. Thus the box will withstand the usual rough handling, the containers can be stacked one on top of another without fear of crushing those below, and the containers cannot be injured when pressures of the usual type are applied to two diagonally opposite corners.

A further object of the invention is to provide a container including complementary hinged covers, the covers and end walls being constructed in a novel manner to cooperate with each other in producing a bracing effect against both inward and outward strains when the covers are closed.

A further object of the invention is to provide a container of the class described wherein the covers are maintained firmly in position even when the box is subjected to diagonal pressures.

A further object of the invention is to provide a container formed of fiberboard or the like which has such strength, rigidity, and resistance to tearing or breaking forces that it can be re-used a relatively large number of times.

A more specific object of the invention is to provide a container, as above described, having complementary hinged covers wherein each cover member is formed with side and end flanges, and wherein the container end walls are provided with upper edge slots for receiving the meeting side flanges and with external upper edge channels for receiving the end flanges of the cover members. With this arrangement the container is braced against inward, outward, or diagonal strains on the end walls and against downward pressure on the cover sections. Furthermore, cover members are maintained in position because of the frictional engagement of the side flanges within the end wall slots and because of the frictional engagement of the end flanges within the end wall channels.

A further, more specific objection of the invention is to provide a construction wherein each end wall channel is formed by integral means bent downwardly from the upper edge of the end wall and then upwardly, the downwardly bent portion having a vertical slot which registers with the upper edge slot of the end wall proper.

A further specific object of the invention is to provide a container having end wall channels wherein the horizontal fold line between the downwardly and upwardly bent channel forming parts is slotted at its ends for receiving the upper portions of the side wall flanges in a "Bliss" type of box. Thus the upper ends of these side wall flanges, which overlap the end walls, are received between the downwardly and upwardly bent portions of the channels. By this arrangement the downwardly and upwardly bent channel forming portions are held in properly separated condition for readily receiving the end flanges of the cover members. Furthermore, the end wall channels do not project an undesired distance beyond the surfaces of the end walls.

With the above and other objects in view the invention consists of the improved container and all its parts and combinations, as set forth in the claims and all equivalents thereof:

In the accompanying drawings illustrating one complete embodiment of the preferred form of the invention, in which the same reference numerals designate the same parts in all of the views:

Fig. 1 is a perspective view of the container with the cover sections open;

Fig. 2 is an end view with the covers closed, part being broken away;

Fig. 3 is a fragmentary vertical sectional view taken on line 3—3 of Fig. 2;

Fig. 4 is a sectional view taken on line 4—4 of Fig. 3;

Fig. 5 is a plan view of one of the cut and scored end wall blanks before folding; and

Fig. 6 is a perspective view of the blank of Fig. 5 after the upper edge portions have been folded to form a channel.

Referring more particularly to the drawings, the box illustrated is of the "Bliss" type, but features of the invention are obviously applicable for use in other types of boxes. The container comprises side walls 11 and 12 foldably connected to opposite edges of a bottom wall 13, cover members 14 and 15 foldable toward one another from the upper edges of the side walls 11 and 12, and end walls 16 and 17 secured by metal stitching 18, or in any other suitable manner, to stitching flaps 19 and 20. The side walls, bottom wall, end walls and cover are preferably formed of solid fiberboard. They may, however, be formed of corrugated board or other suitable material of like nature.

The cover section 14 has its upper edge formed with a right-angularly bent side flange 21 and has its end edges formed with end flanges 22. Tongues 23, bent at right angles to the end flanges 22, are stapled as at 24 to the ends of the side flange 21. In order to obtain maximum reinforcement at the free edge of the cover member, the side flange 21 is of greater depth than the end flanges 22. Furthermore, the ends of the side flanges may be cut down in depth, as at 25, to coincide with the depth of the tongues 23. It is not desirable to have the end flanges 22 of as great depth as the side flange 21, as this takes an unnecessary amount of material without accomplishing any useful purpose. The other cover member 15 is similarly formed with a side flange 26, and with end flanges 27 having tongues 28 which are stapled to the ends of the side flange as at 29. The ends of the side flange 26 are cut down in depth as at 30.

The end walls 16 and 17 are identical in construction and, therefore, the description of one end wall will suffice. Referring to Figs. 5 and 6 the end wall blank has a hand hole 31 and also has spaced parallel lines of scoring 32 and 33 which define a downwardly foldable channel-forming portion 34 and an upwardly foldable channel-forming portion 35. Midway between the sides of the blank is a slot which crosses the line of scoring 32. This forms a slot portion 36 extending downwardly from the score line 32 in the end wall proper and a slot portion 37 which extends downwardly in the channel-forming portion 34 and which registers with the slot portion 36 when the blank is folded, as in Fig. 6. In addition, there are horizontal slots 38 at the ends of the score line 33 between the downwardly and upwardly foldable portions 34 and 35.

When the end walls are assembled in the container the downwardly folded channel-forming portions 34 contact the inner sides of the upper edges of the flanges 19 connected with the side walls, as is clear from Figs. 1 and 2. The upwardly folded channel-forming portion 35 contacts the outer sides of the upper ends of the side wall flanges 19. This novel arrangement is permitted by the slots 38, which slots receive the upper ends of the flanges 19. Thus these upper ends of the flanges 19 space the two portions 34 and 35 of the channels a required distance apart. In addition, this arrangement prevents the channel-forming members from projecting too far outwardly from the ends of the box. Staples 40, which extend through the ends of the channel-forming portion 35, through the upper ends of the flanges 19, through the ends of the channel-forming portion 34, and through the end wall proper, maintain the end wall channels in assembled position.

When the cover sections 14 and 15 are closed, the cut-down portions 25 and 30 of the cover side flanges 21 and 26, together with the inwardly bent tongues 23 and 28, are received in the downwardly extending slots of the end walls, as is illustrated in Figs. 2, 3 and 4. These slots are formed by portions 36 extending downwardly from the upper edges of the end walls and by portions 37 extending downwardly in the downwardly foldable channel-forming part 34. At the same time the end flanges 22 and 27 of the cover members are received within the end wall channels. The parts are so arranged so that these cover end flanges readily enter the channels. On the other hand the spacing is such that when fully inserted in the channels they are frictionally maintained in position. Furthermore, the meeting flanges 21 and 26 of the two cover members frictionally engage one another in closed position and are also frictionally held in the end wall slots.

Due to the novel use of the end wall channels, together with end wall slots, the container possesses unusual rigidity. The side flanges 21 and 26 of the covers reinforce the covers against downward pressure and also strengthen the box against inward pressures on the end walls. Such inward pressure is also prevented because of the engagement of the cover end flanges in the channels. At the same time the channels prevent outward strains on the end walls from causing the end walls to bow outwardly. Due to the snug fit of all of the parts, when in closed position, the container is strongly braced against diagonal pressures. Furthermore, the possibility of the cover members popping open during handling is minimized.

Although only one form of the invention has been described, it is obvious that various changes and modifications may be made without departing from the spirit of the invention. For example, the end wall channels may be formed by separate members connected to the end walls. In addition, the construction as to certain features may be employed in boxes other than the "Bliss" type. Various other changes may be made without departing from the spirit of the invention and all of such changes are contemplated as may come within the scope of the claims.

What we claim is:

1. In a container having side and end walls, each end wall having an upper edge portion folded downwardly on the outer side of the end wall and then upwardly to provide an upwardly opening channel, there being a slot extending downwardly from the upper edge of each end wall and there being a registering slot formed in the downwardly folded part of each channel, complementary cover members hinged to said side walls and foldable toward one another over the container, and side and end flanges on each cover member, said side flanges being received in the upper edge slots of the end walls and said end flanges being received in said end wall channels when the cover members are closed.

2. In a container having side and end walls, each end wall having an upper edge portion folded downwardly on the outer side of the end wall and then upwardly to provide an upwardly

opening channel, there being a slot extending downwardly from the upper edge of each end wall and there being a registering slot formed in the downwardly folded part of each channel, complementary cover members hinged to said side walls and foldable toward one another over the container, and side and end flanges on each cover member, said side flanges being received in the upper edge slots of the end walls and said end flanges being received in said end wall channels when the cover members are closed, and metal staples securing said channel-forming parts in folded position so that the channels frictionally aid in maintaining the cover end flanges in position when the cover members are closed.

3. In a container having a bottom provided with end flaps and having side walls provided with end flaps, an end wall secured at each end of the container to said end flaps of the bottom and side walls, each end wall having an upper edge portion folded downwardly on the outer side of the end wall and then upwardly to provide an upwardly opening channel, there being a fold line between said downwardly and upwardly folded channel parts with slots in the ends of said fold line for receiving upper end portions of the side wall end flaps, each end wall having a slot extending downwardly from its upper edge and there being a registering slot formed in the downwardly folded part of each channel, complementary cover members hinged to said side walls and foldable toward one another over the container, and side and end flanges on each cover member, said cover side flanges being received in the upper edge slots of the end wall and said cover end flanges being received in said end wall channels when the cover members are closed.

4. In a container having a bottom provided with end flaps and having side walls provided with end flaps, an end wall secured at each end of the container to said end flaps of the bottom and side walls, each end wall having an upper edge portion folded downwardly on the outer side of the end wall and then upwardly to provide an upwardly opening channel, there being a fold line between said downwardly and upwardly folded channel parts with slots in the ends of said fold line for receiving upper end portions of the side wall end flaps, complementary cover members hinged to said side walls and foldable toward one another over the container, and end flanges on each cover member which are received in said end wall channels when the cover members are closed.

5. In a container having a bottom provided with end flaps and having side walls provided with end flaps, an end wall secured at each end of the container to said end flaps of the bottom and side walls, each end wall having an upper edge portion folded downwardly on the outer side of the end wall and then upwardly to provide an upwardly opening channel, there being a fold line between said downwardly and upwardly folded channel parts with slots in the ends of said fold line for receiving upper end portions of the side wall end flaps, complementary cover members hinged to said side walls and foldable toward one another over the container, end flanges on each cover member which are received in said end wall channels when the cover members are closed, and metal staples at the ends of each channel extending through the upwardly folded channel-forming part, through the upper ends of the side wall end flanges, through the downwardly folded channel-forming part and through the end wall proper.

6. In a container having side and end walls, each end wall having an upper edge portion folded downwardly on the outer side of the end wall and then upwardly to provide an upwardly opening channel, there being a slot extending downwardly from the upper edge of each end wall and there being a registered slot formed in the downwardly folded part of each channel, complementary cover members hinged to said side walls and foldable toward one another over the container, side and end flanges on each cover member, and angularly bent corner tongues connecting the side and end flanges, said side flanges and tongues being received in the upper edge slots of the end walls and said end flanges being received in said end wall channels when the cover members are closed.

7. In a container having side and end walls, each end wall having an upper edge portion folded downwardly on the outer side of the end wall and then upwardly to provide an upwardly opening channel, there being a slot extending downwardly from the upper edge of each end wall and there being a registering slot formed in the downwardly folded part of each channel, complementary cover members hinged to said side walls and foldable toward one another over the container, side and end flanges on each cover member, and angularly bent corner tongues connecting the side and end flanges, said side flanges and tongues being received in the upper edge slots of the end walls and said end flanges being received in said end wall channels when the cover members are closed, and metal staples securing said channel-forming parts in folded position so that the channels frictionally aid in maintaining the cover end flanges in position when the cover members are closed.

8. In a container having a bottom provided with end flaps and having side walls provided with end flaps, an end wall secured at each end of the container to said end flaps of the bottom and side walls, each end wall having an upper edge portion folded downwardly on the outer side of the end wall and then upwardly to provide an upwardly opening channel, there being a fold line between said downwardly and upwardly folded channel parts with slots in the ends of said fold line for receiving upper end portions of the side wall end flaps, each end wall having a slot extending downwardly from its upper edge and there being a registering slot formed in the downwardly folded part of each channel, complementary cover members hinged to said side walls and foldable toward one another over the container, side and end flanges on each cover member, and angularly bent corner tongues connecting the side and end flanges, said cover side flanges and tongues being received in the upper edge slots of the end wall and said cover end flanges being received in said end wall channels when the cover members are closed.

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