

Feb. 16, 1943.

C. W. EVERT ET AL

2,311,040

CONTAINER

Filed April 9, 1941

2 Sheets-Sheet 1

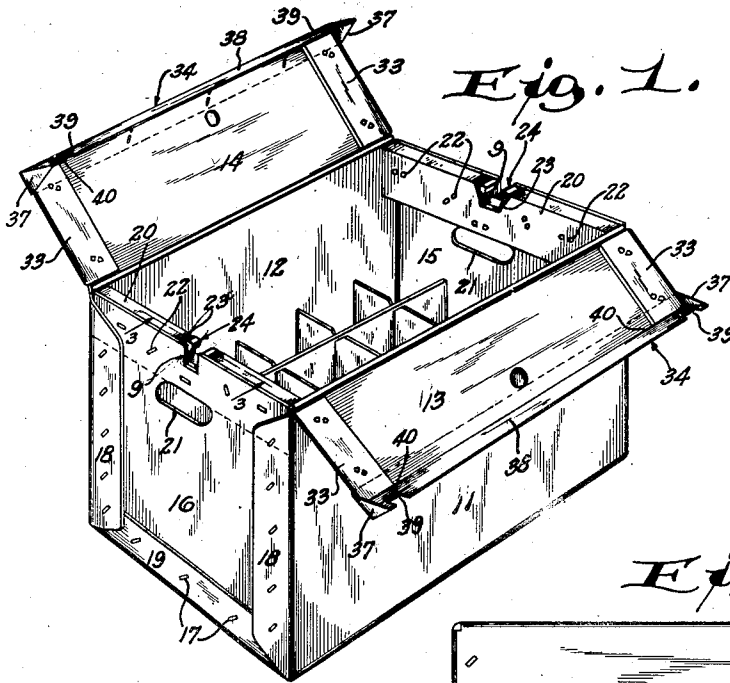


Fig. 2.

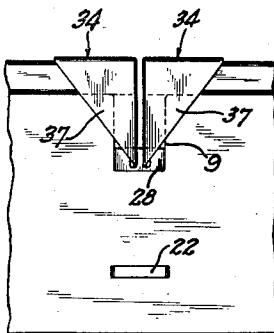
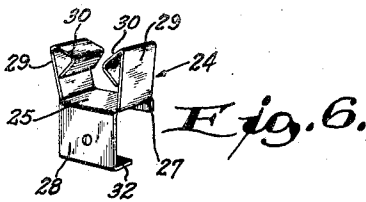
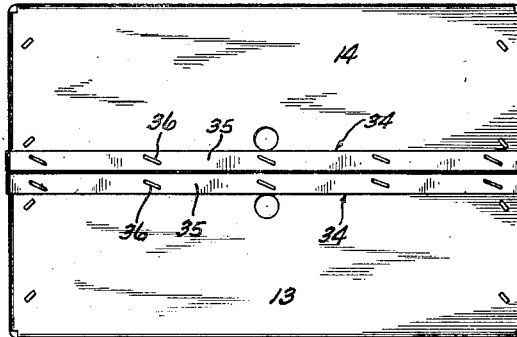


Fig. 5.

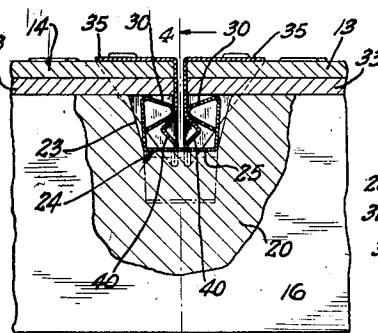


Fig. 3.

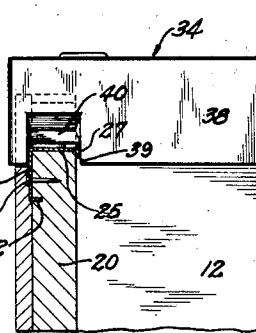


Fig. 4.

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2,311,040

CONTAINER

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Application April 9, 1941, Serial No. 387,640

11 Claims. (Cl. 229—23)

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

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. Fiberboard containers 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 ordinary fiberboard container will not withstand a large amount of inward pressure on the sides or top, such as a beverage case is frequently subjected to.

It is therefore a general object of the present invention to provide an improved container, formed principally of fiberboard, wherein the container is reinforced in a novel manner to provide greater rigidity in all directions. Thus the container will withstand the usual rough handling, the boxes can be stacked one on top of another without fear of crushing the lower boxes, and the containers cannot be injured when pressure is applied to two diagonally opposite corners.

A further object of the invention is to provide a container as above described including a cover, the cover being reinforced in a novel manner to cooperate with end wall reinforcements in producing a bracing effect when the covers are closed. By providing cover members, light can be excluded from the contents of the container as is desirable in connection with products such as beer.

A further object of the invention is to provide a container as above described wherein there is a latch construction to maintain the covers firmly in closed position, even when the box is subjected to diagonal pressures, with the latch cooperating to maintain the covers in container bracing position.

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

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 preferred embodiments 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 covers open;

Fig. 2 is a top view with the covers closed;

Fig. 3 is an enlarged fragmentary detail view partially in section along the line 3—3 of Fig. 1, with the covers closed;

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

Fig. 5 is a fragmentary end view of the container showing the meeting corners of the covers in closed position;

Fig. 6 is a perspective view of one of the spring latching clips;

Fig. 7 is a perspective view of a modified form of the container with the covers open;

Fig. 8 is an enlarged fragmentary view similar to Fig. 3 showing the modified construction used in the box of Fig. 7;

Fig. 9 is a fragmentary view of a portion of the end wall reinforcing strip as it appears on the inside of the container; and

Fig. 10 is a sectional view taken on line 10—10 of Fig. 9.

Referring more particularly to the drawings, the box illustrated is of the "Bliss" type and comprises side walls 11 and 12 foldably connected to opposite edges of a bottom wall, cover members 13 and 14 foldable toward one another from the upper edges of the side walls 11 and 12, and end walls 15 and 16 secured by metal stitching 17, or in any other suitable manner, to stitching flaps 18 and 19. While the invention is well adapted for use in connection with this type of "Bliss" box illustrated, it is obviously applicable to containers formed in other ways. The side walls, bottom wall, end walls and cover just described are formed of fiberboard, corrugated board, or other relatively inexpensive material, normally capable of being crushed, torn, or broken when subjected to unusually rough treatment.

Suitably secured adjacent to the inner surface of each end wall is a reinforcing strip 20. These strips are preferably of such width that the lower edge registers with the upper margin of the end wall hand hole 21, with the upper edge of the strip substantially flush with the upper edge of the end wall. In the form of the invention shown in Fig. 1 it is preferred to form the strips

out of wood and to secure such strips by metal stitching 22 to the end walls.

The upper edge of each end wall is recessed as at 9, and the upper edge of each strip is centrally recessed as at 23 for the reception of a spring clip member 24 (see Figs. 3 and 6). Each spring clip 24 comprises a base portion 25 which seats on the bottom of the recess 23, a flange 27 which extends downwardly on the inside of the reinforcement 20, as shown in Fig. 4, a longer flange 28 which extends downwardly on the opposite side of the reinforcement 20, and upwardly extending yielding portions 29 having projections 30 which extend toward one another and which are preferably V-shaped in cross-section. Each clip may be secured in position by means of a nail 31, as shown in Fig. 4, and the lower edge of each flange 28 may be formed with an inwardly extending tongue 32 which can be driven into the wood of the reinforcement, or fitted into a slot provided in reinforcement 20, as shown in Fig. 4.

In the construction of the container, the end edges of the cover members 13 and 14 are preferably strengthened and reinforced by the stapling of integral flanges 33 against the inner sides of the covers. The free meeting edges of the cover members are reinforced in a novel manner to cooperate with the end wall reinforcements and clips in detachably locking the covers in closed position, and in giving the container the necessary rigidity when the covers are closed.

The reinforcement for each cover consists of an angle bar 34 having its top flange 35 secured by wire stapling or the like to the cover member as at 36. The ends of each angle bar are preferably closed as at 37 to eliminate sharp or raw edges, and adjacent said closed ends the flange 38 is recessed as at 39. Each recess 39 has a width to snugly embrace the thickness of the adjacent end wall reinforcement 20 as shown in Fig. 4, and above each recess 39 is an indentation 40 adapted to snap into place beneath one of the projections 30 of the spring clips 24, as shown in Fig. 3.

It is important to note that the construction provides a great deal more than a mere detachable latch for the covers. The latches are so arranged with respect to the cover reinforcing flanges 38, recesses 39, and end wall reinforcements 20, that when the covers are in latching position the end wall reinforcements 20 are maintained snugly in position in the recesses 39 so that the end walls are braced not only against inward pressure but also against being pulled outwardly. When the covers are closed the construction is such that the angle bars 34 connecting the two end wall reinforcements 20 provide in effect an I-beam type of reinforcement. Not only does the above mentioned construction provide for rigidity in all directions, permitting the boxes to be stacked one on another and to be handled roughly, but said construction also eliminates the possibility of the cover popping open when the box is hit on one of the corners, because the box cannot give under this type of strain to release the spring clip engagement.

In the form of the invention shown in Figs. 7 to 10 inclusive, the construction is the same except for the type of end wall reinforcement. In this box, end wall reinforcements 41 of stamped metal are employed. The reinforcements preferably have the cross-sectional shape shown in Fig. 10 with strengthening ribs 42.

The upper edge of each metal stamping is bent outwardly and downwardly to form a groove 43 for receiving the upper edge of the end wall 15' or 16'. At the center of each reinforcement 41 the metal is cut out and bent outwardly as at 44 to form a shelf, and downwardly as at 45 to provide a lip engaging the outer side of the end wall of the container. Above the shelf 44 is a latching recess 46 into which yielding projections 47 extend, as shown in Fig. 9. The yielding projections may be formed from a single piece of spring wire 48 in the manner shown in Fig. 8, the end portions of the spring wire being suitably connected to the stamping through the use of cut out tongues 49, and the center portion 50 of the spring wire 48 being engaged within one of the hollow ribs 42 beneath the shelf 44, as shown in Fig. 10.

The container of Fig. 7 is otherwise the same as the container of Fig. 1, and corresponding parts bear the same reference numerals as in Fig. 1 with, however, prime marks being applied to said numerals in the modification of Figs. 7 to 10.

When the covers are closed, the shelf portions 44 are snugly received within the recesses 39' of the cover reinforcements 34' so that the container is braced in the same manner as heretofore described in connection with the form of Fig. 1. In addition the latching indentations 40' snap beneath the yielding projections 47, as shown in Fig. 8, to maintain the cover members in closing and container bracing position.

From the above it is apparent that a strong and rigid construction has been provided which is, nevertheless, inexpensive and light in weight because the main body thereof is formed of fiberboard or the like. It is also clear that latching covers are provided which cooperate in a novel manner by snap action with end wall reinforcements to provide a rigid bracing effect when the covers are closed. It is further to be noted that in both forms of the invention the upper margins of the hand holes are reinforced, at the point of greatest strain during lifting, by the lower edges of the reinforcements 20 or 41. In addition said lower edges provide a greater thickness to the grasp of the hand.

Although only two forms of the invention have been shown and described, it is obvious that various changes and modifications may be made without departing from the spirit of the invention, and all of said changes are contemplated as may come within the scope of the claims.

What we claim is:

1. In a container formed of fiberboard or the like, reinforcing means of rigid material extending along the upper edges of oppositely disposed walls, cover members foldable toward each other from two other walls of the container, a reinforcement on the free edge of each cover member, there being recesses adjacent the ends of said cover reinforcements in the lower edges thereof, said recesses terminating short of the ends of said cover reinforcements and being of a length to snugly receive the thickness of the upper edge reinforcements when the cover members are closed to brace the container, and cooperating snap latches on the cover reinforcements and on the upper edge reinforcements engageable in response to downward pressure on the cover member, said latches positioned to be in engagement only when the cover reinforcement recesses are in bracing engagement with the upper edge reinforcements.

2. In a container formed of fiberboard or the like, reinforcing means of rigid material extending along the upper edges of oppositely disposed walls and having central recesses, yielding clips mounted in said recesses, cover members foldable toward each other from two other walls of the container, an angle bar reinforcement on the free edge of each cover member, each reinforcement having a flange which projects inwardly when the cover is closed and which is formed with lower edge recesses adjacent its ends which snugly receive the thickness of rigid material at the bases of the recesses in the upper edge reinforcements when the cover members are closed to brace the container, and there being latching means on the angle bars above the angle bar recesses which snap into latching engagement with said yielding clips to maintain the cover members in container bracing position.

3. In a container formed of fiberboard or the like, reinforcing strips of wood extending along the upper edges of oppositely disposed walls, each strip having a central recess in its upper edge extending through the thickness of the strip, a yielding clip mounted in each recess, cover members foldable toward each other from two other walls of the container, an angle bar reinforcement on the free edge of each cover member, each reinforcement including a flange which projects inwardly when the cover is closed and which is formed with recesses adjacent its ends which interlock with the recesses in the wooden strips and snugly receive the thickness of said strips when the cover members are closed to brace the container, and there being latching means on the angle bars adjacent the angle bar recesses which snap into latching engagement with said yielding clips to maintain the cover members in container bracing position.

4. In a container formed of fiberboard or the like, reinforcing strips of stamped metal having at their upper edges outwardly and downwardly bent flanges to form grooves in which the end walls of the container fit, cover members foldable toward each other from the side walls of the container, an angle bar reinforcement on the free edge of each cover member, each reinforcement including a flange which projects inwardly when the cover is closed and which is formed with recesses adjacent its ends, said recesses being adapted to snugly receive portions of the end wall reinforcing strips when the cover members are closed to brace the container, and cooperating latch members on the end wall reinforcing strips and on the angle bars for maintaining the bracing engagement in said recesses.

5. In a container formed of fiberboard or the like, reinforcing means of rigid material extending along the upper edges of oppositely disposed walls and having central recesses, yielding clips mounted in said recesses, cover members foldable toward each other from two other walls of the container, a reinforcement on the free edge of each cover member projecting inwardly therefrom, each reinforcement being formed with lower edge recesses adjacent its ends, said recesses terminating short of the ends of said cover reinforcements and being of a length to snugly receive the thickness of rigid material at the bases of said central recesses in the upper edge reinforcements when the cover members are closed to brace the container, and there being latching means on the cover reinforcements above the lower edge recesses, which latching means snap into latching engagement with said

yielding clips to maintain the cover members in container bracing position.

6. In a container formed of fiberboard or the like, reinforcing strips of stamped metal having at their upper edges outwardly and downwardly bent flanges to form grooves in which the end walls of the container fit, said strips having centrally located recesses in the upper edges thereof, portions of the metal in the bottom of each recess being bent transversely outwardly to form a shelf, cover members foldable toward each other from the side walls of the container, a reinforcement on the free edge of each cover member, each reinforcement including a part which projects inwardly when the cover is closed and which is formed with recesses adjacent its ends, said recesses terminating short of the ends of the cover reinforcements and being of a length to snugly receive the width of said shelves when the cover members are closed to brace the container.

7. In a container formed of fiberboard or the like, reinforcing strips of stamped metal having at their upper edges outwardly and downwardly bent flanges to form grooves in which the end walls of the container fit, said strips having centrally located recesses in the upper edges thereof, portions of the metal at the bottom of each recess being bent transversely outwardly to form a shelf, cover members foldable toward each other from the side walls of the container, a reinforcement on the free edge of each cover member, each reinforcement including a part which projects inwardly when the cover is closed and which is formed with recesses adjacent its ends, said recesses terminating short of the ends of the cover reinforcements and being of a length to snugly receive the width of said shelves when the cover members are closed to brace the container, and cooperating latch members in the upper edge reinforcement recesses above said shelves and on the cover reinforcements for maintaining the bracing engagement in said recesses.

8. In a container formed of fiberboard or the like, reinforcing strips of stamped metal having at their upper edges outwardly and downwardly bent flanges to form grooves in which the end walls of the container fit, said strips having centrally located recesses in the upper edges thereof, portions of the metal at the bottom of each recess being bent transversely outwardly to form a shelf and then downwardly on the outside of the fiberboard end walls, said fiberboard end walls having upper edge recesses registering with the recesses in the reinforcing strips, cover members foldable toward each other from the side walls of the container, a reinforcement on the free edge of each cover member, each reinforcement including a part which projects inwardly when the cover is closed and which is formed with recesses adjacent its ends, said recesses terminating short of the ends of the cover reinforcements and being of a length to snugly receive the width of said shelves when the cover members are closed to brace the container.

9. In a container formed of fiberboard or the like, reinforcing strips of stamped metal having at their upper edges outwardly and downwardly bent flanges to form grooves in which the end walls of the container fit, said strips having centrally located recesses in the upper edges thereof, portions of the metal at the bottom of each recess being bent transversely outwardly to form a shelf, cover members foldable toward each other from the side walls of the container, a reinforce-

ment on the free edge of each cover member, each reinforcement including a part which projects inwardly when the cover is closed and which is formed with recesses adjacent its ends, said recesses terminating short of the ends of the cover reinforcements and being of a length to snugly receive the width of said shelves when the cover members are closed to brace the container, yielding members projecting inwardly from opposite sides of the reinforcing strip recesses above the shelves, said yielding members being formed of bent wire, means on each strip for supporting ends of said bent wire to maintain the yielding members in position, and latching means on said cover reinforcements above the cover reinforcement recesses and cooperable with said yielding projections to maintain the cover members in bracing engagement with the end walls.

10. In a container formed of fiberboard or the like, reinforcing strips of stamped metal connected to the upper edges of the end walls of the container, said strips having centrally located recesses in the upper edges thereof, portions of the metal in the bottom of each recess being bent transversely to form a shelf, cover members foldable toward each other from the side walls of the container, a reinforcement on the free edge of each cover member, each reinforcement includ-

ing a part which projects inwardly when the cover is closed and which is formed with recesses adjacent its ends, said recesses terminating short of the ends of the cover reinforcements and being of a length to snugly receive the width of said shelves when the cover members are closed to brace the container.

11. In a container formed of fiberboard or the like, reinforcing strips of stamped metal having their upper edges bent to form downwardly opening grooves in which the upper edges of the end walls of the container fit, said strips having centrally located recesses in the upper edges thereof, portions of the metal in the bottom of each recess being bent transversely to form a shelf, cover members foldable toward each other from the side walls of the container, a reinforcement on the free edge of each cover member, each reinforcement including a part which projects inwardly when the cover is closed and which is formed with recesses adjacent its ends, said recesses terminating short of the ends of the cover reinforcements and being of a length to snugly receive the width of said shelves when the cover members are closed to brace the container.

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