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COVER CONSTRUCTION FOR CONTAINERS

Filed July 20, 1944

Fig. 1.

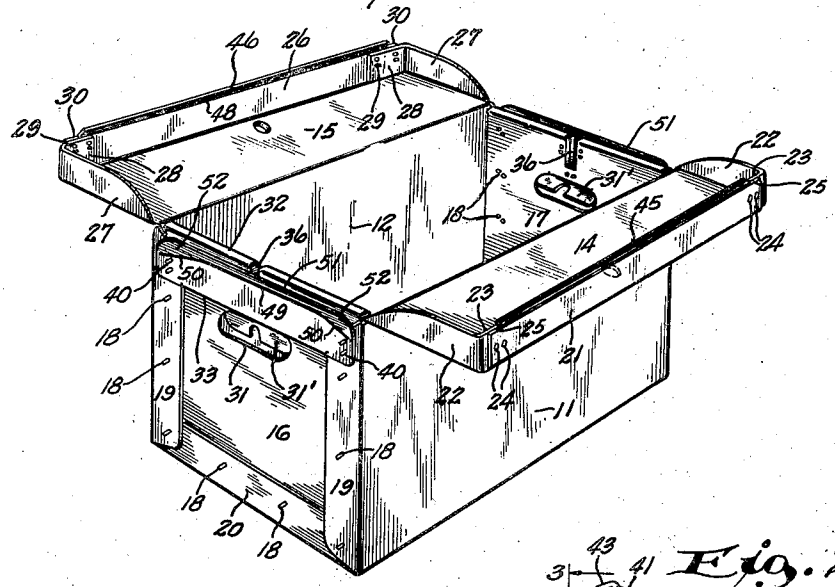
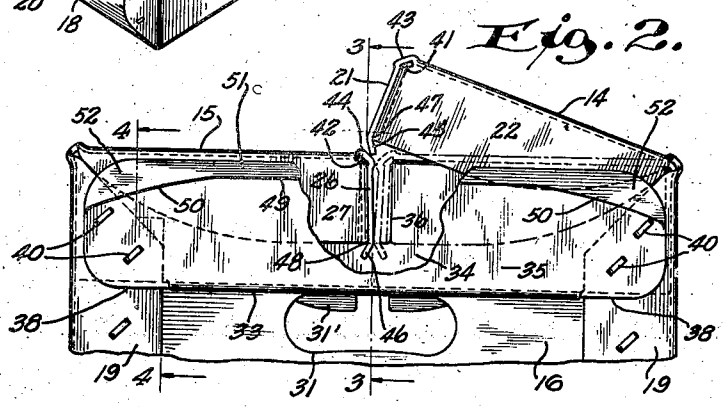


Fig. 2.



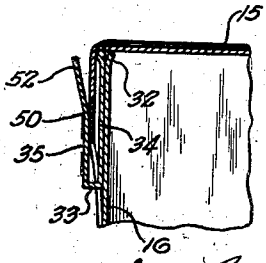


Fig. 4.

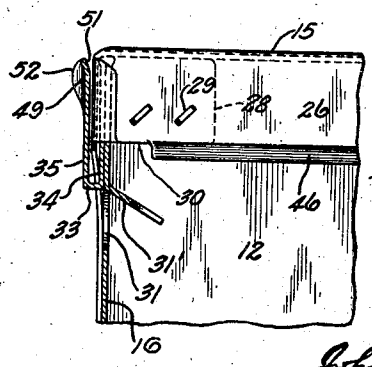


Fig. 3.

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COVER CONSTRUCTION FOR CONTAINERS

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Application July 20, 1944, Serial No. 545,792

14 Claims. (Cl. 229—44)

This invention relates to improvements in cover construction for containers, and more particularly to containers designed 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. One type, the single shipment variety, is formed of relatively lightweight fiberboard, and is of an 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 frequently have complementary cover members which are hinged to the upper edges of the side walls, and which are foldable toward one another over the container. The free edges of these cover members usually have flanges bent at right angles, and the flange of one cover member meets and bears against the flange of the other cover member when the covers are closed. Due to the use of these flanges, it has heretofore been necessary in closing a container of this type to move both cover members at the same time and force both flanges down together. If one cover member is closed first and it is attempted to force the other cover member into closed position, the flange on the other cover member will be broken or injured, and this will materially decrease the life of the container.

Inasmuch as it is not possible to control the manner in which inexperienced workmen will close these containers, it is a general object of the present invention to provide a cover construction which permits closing of the covers in any selected manner without injury to the cover flanges or covers.

A more specific object of the invention is to provide a construction as above described wherein the lower edge of the flange of each cover section is normally disposed at an angle with respect to the flange proper and is arranged to yieldingly cooperate with a portion of the opposite cover member to permit closing of one cover section after the other is in place.

A further object if the invention is to provide in a container of the type disclosed in pending application, Serial No. 521,936, filed February 11, 1944, now matured into Patent No. 2,382,819, means whereby the end flanges of the cover are more readily insertable in the end channels without danger of mutilation.

A further object of the invention is to provide a cover construction as above described wherein the covers are so constructed that they will not accidentally pop open, but wherein the covers may be readily closed without any special procedure and without danger of damaging the flanges.

A further object of the invention is to provide a construction as above described which insures proper closing of the cover sections in spite of slight variations in manufacture which might otherwise interfere with proper closing action.

With the above and other objects in view, the invention consists of the improved cover construction for containers and all its parts and combinations as set forth in the claims, and all equivalents thereof.

In the accompanying drawing 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 a fragmentary end view showing the upper portion of an end wall with one cover section in closed position and with the other cover section about to be closed, the dot and dash lines indicating the latter section in fully closed position;

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

Fig. 4 is a fragmentary sectional view taken on line 4—4 of Fig. 2.

Referring more particularly to the drawing, 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, 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 outer 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. For purposes to be hereinafter

described, 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. 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. 1, 2 and 4, the end wall blank has a hand hole 31 provided with a slotted flap 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 36 which crosses the line of scoring 32. This provides a slot portion extending downwardly from the score line 32 in the end wall proper and a slot portion which extends downwardly in the channel-forming portion 34 and which registers with the first slot portion when the blank is folded, as in Fig. 1. 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 ends of the flanges 19 connected with the side walls. The upwardly folded channel-forming portion 35 contacts the outer sides of the upper ends of the side wall flanges 19. This 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 36 of the end walls. At the same time the end flanges 22 and 27 of the cover members are received within the end wall channels.

In order to prevent the cover members from accidentally popping open during use of the container, it is necessary that the fit of the covers, when the latter are in closed position, be a relatively snug one.

Because of the requirement for this snug fit, it has not heretofore been possible with boxes of this type to first close one of the cover sections and subsequently close the other section without injuring the cover flanges. With the present invention, however, the snug fit is maintained, and at the same time novel construction is employed which permits closing of one cover section and then the other with relative ease.

As a part of the present invention, there are relatively wide lines of scoring 41 and 42 at the junction between the flange 21 and the cover section 14, and at the junction between the flange 26 and the cover section 15. When the container is assembled, these relatively wide lines of scoring present outer angular surfaces 43 and 44 which are at an angle of about 45° with respect to the plane of the top of the cover.

In addition, the flanges 21 and 26 are formed with extensions 45 and 46 which are normally disposed at an angle with respect to the main portions of the flanges as is clear from Figs. 1 and 2. This angular disposition is obtained by means of light lines of scoring at 47 and 48. Due to the fact that the extensions 45 and 46 project downwardly beyond the tongues 23 and 28 of the end flanges when the covers are in the position of Fig. 2, it is apparent that the extensions 45 and 46 can yield inwardly toward the lines of scoring 47 and 48 independently of the rest of the flanges 21 and 26.

Accordingly, when one of the cover sections, such as the section 15, is closed first as in Fig. 2, then as the other cover section 14 is brought downwardly, the lower edge of the yielding extension 45 will contact the angular surface 44 and the extension 45 will then yield inwardly sufficient to permit snapping of the cover section 14 into closed position without injuring the lower edge of the flange. If the cover section 14 is closed before the cover section 15, then the angular extension 46 will cooperate with the angular surface 43 during the closing movement.

In the type of container illustrated wherein there are end channels for receiving the end flanges 22 and 27 of the cover sections, it is also important to prevent injury to the upper edges of the channel-forming portions and to the lower edges of the flanges 22 and 27 during closing of the cover sections. Accordingly, each channel-forming portion 35 is lightly scored along a line 49 which extends substantially parallel to the upper edge of the portion 35. The line of scoring 49, however, extends at an angle as at 50 near each corner. The material above the line of scoring 49 is bent outwardly slightly as at 51 (see Fig. 3) and the material at each corner is bent outwardly a somewhat greater distance as at 52. With this arrangement, the effective width at the top of the end wall channels is increased slightly to more readily receive the edges of the cover end flanges 22 and 27.

This arrangement for readily receiving the cover end flanges interferes in no way with the desired tight engagement after the cover members are fully closed. The stitching 40 and the spacing between the channel-forming portions 34 and 35 are arranged so that the lower edges of the cover end flanges 22 and 27 are frictionally maintained in position.

As a result of the above described novel features, the cover sections may be closed in any way desired, and an inexperienced, careless workman will not cause damage to the container. Furthermore, the use of the yielding flanges 45 and 46, together with yielding portions 51 and 52 on the end wall channels provide for proper closing action even though the box may not have been assembled or manufactured with perfect accuracy.

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 having side and end walls, said end walls having downwardly extending upper edge slots, complementary cover members

hinged to said side walls and foldable toward one another over the container, a flange on the free edge of each cover member, said flanges being received in the upper edge slots of the end walls when the cover members are closed, and a short inwardly yielding extension projecting from the edge of at least one of said flanges, said extension being normally disposed at an angle with respect to the flange proper, with the free edge of the extension below the lower edge of the flange proper to aid in guiding the flange to which it is attached into closing position after the other cover member has been closed.

2. In a container having side and end walls, said end walls having downwardly extending upper edge slots, complementary cover members hinged to said side walls and foldable toward one another over the container, a flange on the free edge of each cover member, said flanges being received in the upper edge slots of the end walls when the cover members are closed, and a short inwardly yielding extension projecting from the edge of each flange, each extension being normally disposed at an angle with respect to the flange proper, with the free edge of the extension below the lower edge of the flange proper to aid in guiding the flange to which it is attached into closing position after the other cover member has been closed.

3. In a container having side and end walls, said end walls having downwardly extending upper edge slots, complementary cover members hinged to said side walls and foldable toward one another over the container, a flange bent at a right angle from the upper edge of each cover member, there being a line of scoring at the junction between the flange and cover member which provides an outer guiding surface, said flanges being received in the upper edge slots of the end walls when the cover members are closed, and a short inwardly yielding extension projecting from the edge of at least one of said flanges, said extension being normally disposed at an angle with respect to the flange proper, with the free edge of the extension below the lower edge of the flange proper and engageable with said guiding surface of the other cover member when the latter is closed to aid in guiding the flange to which said extension is attached into closing position.

4. In a container having side and end walls, said end walls having downwardly extending upper edge slots, complementary cover members hinged to said side walls and foldable toward one another over the container, a flange bent at a right angle from the upper edge of each cover member, there being a line of scoring at the junction between the flange and cover member which provides an outer guiding surface, said flanges being received in the upper edge slots of the end walls when the cover members are closed and a short inwardly yielding extension projecting from the edge of each flange, each extension being normally disposed at an angle with respect to the flange proper, with the free edge of the extension below the lower edge of the flange proper and engageable with the guiding surface of the other cover member when the latter is closed to aid in guiding the flange to which said extension is attached into closing position.

5. In a container having side and end walls, said end walls having downwardly extending upper edge slots, complementary cover members hinged to said side walls and foldable toward one another over the container, a flange bent at a right angle from the upper edge of each cover member, there being a line of scoring at the junction between the flange and cover member which provides an outer angular guiding surface, said flanges being received in the upper edge slots of the end walls when the cover members are closed, and a short inwardly yielding extension projecting from the edge of at least one of said flanges, said extension being normally disposed at an angle with respect to the flange proper, with the free edge of the extension below the lower edge of the flange proper and engageable with said guiding surface of the other cover member when the latter is closed to aid in guiding the flange to which said extension is attached into closing position.

6. In a container having side and end walls, said end walls having downwardly extending upper edge slots, complementary cover members hinged to said side walls and foldable toward one another over the container, side and end flanges on each cover member, means connecting the ends of the side flanges with the end flanges, and a short inwardly yielding extension projecting from the edge of at least one of said side flanges, said extension being normally disposed at an angle with respect to the flange proper, with the free edge of the extension below the lower edge of the flange proper to aid in guiding the flange to which it is attached into closing position after the other cover member has been closed.

7. In a container having side and end walls, said end walls having downwardly extending upper edge slots, complementary cover members hinged to said side walls and foldable toward one another over the container, side and end flanges on each cover member, means connecting the ends of the side flanges with the end flanges, and a short inwardly yielding extension projecting from the edge of each flange, each extension being normally disposed at an angle with respect to the flange proper, with the free edge of the extension below the lower edge of the flange proper to aid in guiding the flange to which it is attached into closing position after the other cover member has been closed.

8. In a container having side and end walls, said end walls having downwardly extending upper edge slots, complementary cover members hinged to said side walls and foldable toward one another over the container, side and end flanges on each cover member, means connecting the ends of the side flanges to the end flanges, said side flanges being received in the upper edge slots of the end walls when the cover members are closed, there being a line of scoring at the junction between each side flange and its cover member which provides an outer guiding surface, and a short inwardly yielding extension projecting from the edge of at least one of said side flanges, said extension being normally disposed at an angle with respect to the flange proper, with the free edge of the extension below the lower edge of the flange proper and engageable with said guiding surface of the other cover member when the latter is closed to aid in guiding the flange to which said extension is attached into closing position.

9. In a container having side and end walls, said end walls having downwardly extending upper edge slots, complementary cover members hinged to said side walls and foldable toward one another

over the container, side and end flanges on each cover member, means connecting the ends of the side flanges to the end flanges, said side flanges being received in the upper edge slots of the end walls when the cover members are closed, there being a line of scoring at the junction between each side flange and its cover member which provides an outer angular guiding surface, and a short inwardly yielding extension projecting from the edge of at least one of said side flanges, said extension being normally disposed at an angle with respect to the flange proper, with the free edge of the extension below the lower edge of the flange proper and engageable with said guiding surface of the other cover member when the latter is closed to aid in guiding the flange to which said extension is attached into closing position.

10. 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, the upper edge of the upwardly extending channel-forming portion being scored and bent outwardly at an angle, complementary cover members hinged to said side walls and foldable toward one another over the container, 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.

11. 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, the upper edge of the upwardly extending channel-forming portion being scored and bent outwardly at an angle, complementary cover members hinged to said side walls and foldable toward one another over the container, 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 an inwardly yielding extension projecting from the edge of at least one of the side cover flanges, said extension being disposed at an angle with respect to the flange proper to aid in guiding the flange to which it is attached into closing position after the other cover member has been closed.

12. 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, there being a line of scoring spaced below the upper edge of each of the upwardly folded channel-forming parts, which line extends substantially parallel to said upper edge through the larger portion of its length and at an angle downwardly at its ends, the material above said lines of scoring being bent angularly outwardly, complementary cover members hinged to said side walls and foldable toward one another over the container, 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.

13. In a container having side and end walls, said end walls having downwardly extending upper end slots, complementary cover members hinged to said side walls and foldable toward one another over the container, side and end flanges on each cover member, means connecting the ends of the side flanges with the end flanges, and a short inwardly yielding extension projecting from the edge of at least one of said flanges, the ends of said extension terminating short of the end wall slots and said extension being normally disposed at an angle with respect to the flange proper with the free edge of the extension below the lower edge of the flange proper to aid in guiding the flange to which it is attached into closing position after the other cover member has been closed.

14. In a container having side and end walls, said end walls having downwardly extending upper end slots, complementary cover members hinged to said side walls and foldable toward one another over the container, side and end flanges on each cover member, means connecting the ends of the side flanges with the end flanges, and a short inwardly yielding extension projecting from the edge of at least one of said flanges, there being a light line of scoring at the junction between said extension and side flange so that said extension is normally disposed at an angle with respect to the flange proper, with the free edge of the extension below the lower edge of the flange proper to aid in guiding the flange to which it is attached into closing position after the other cover member has been closed.

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