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D. J. ASENBAUER

3,544,146

CONTAINER

Filed Oct. 7, 1968

2 Sheets-Sheet 1

FIG. 1.

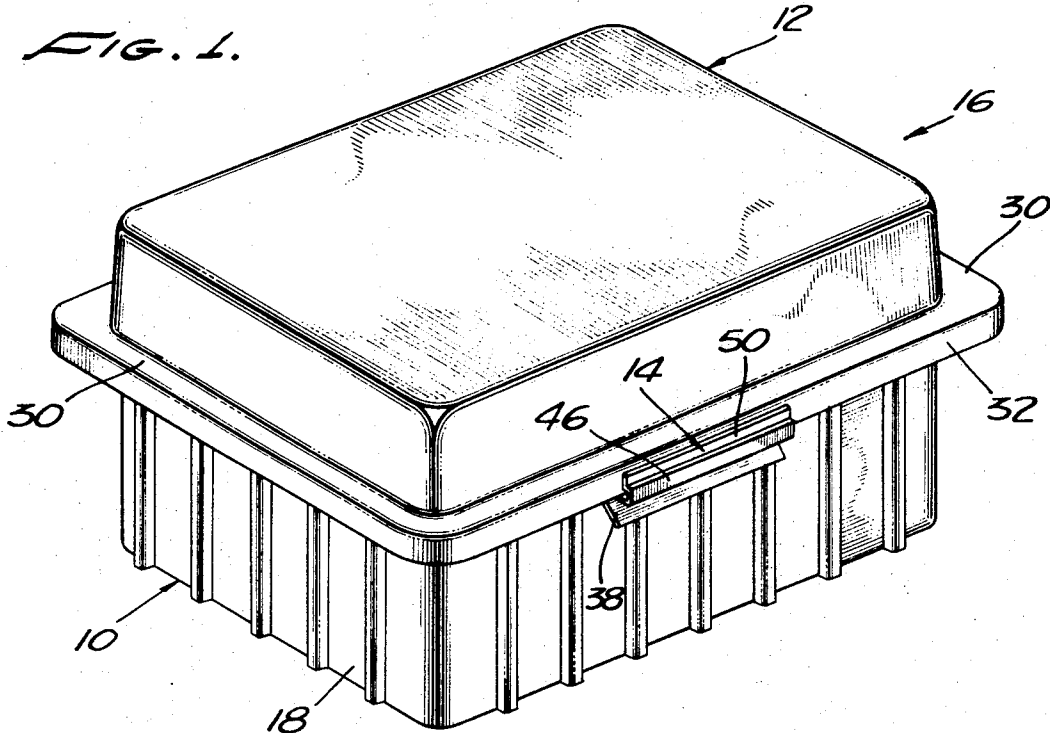


FIG. 2.

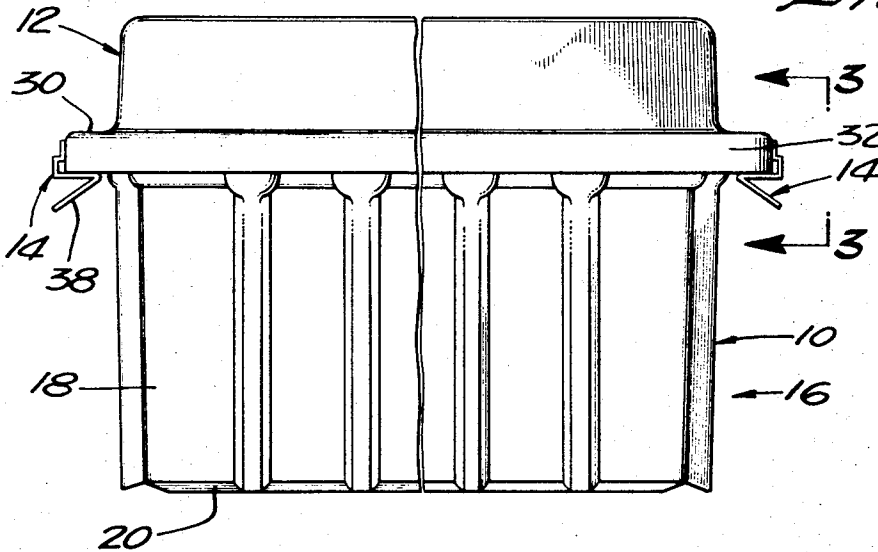
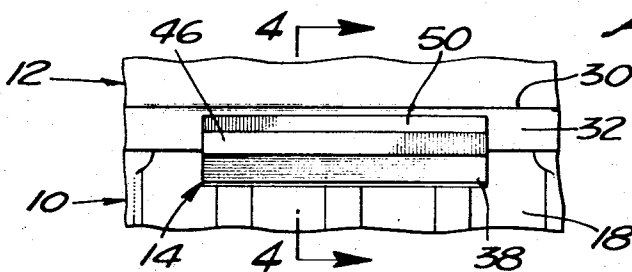


FIG. 3.



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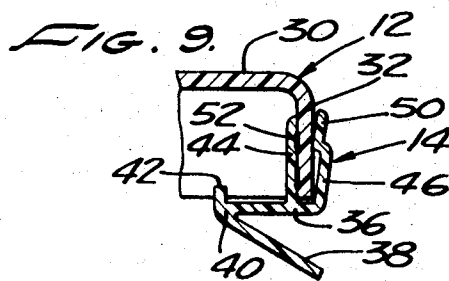
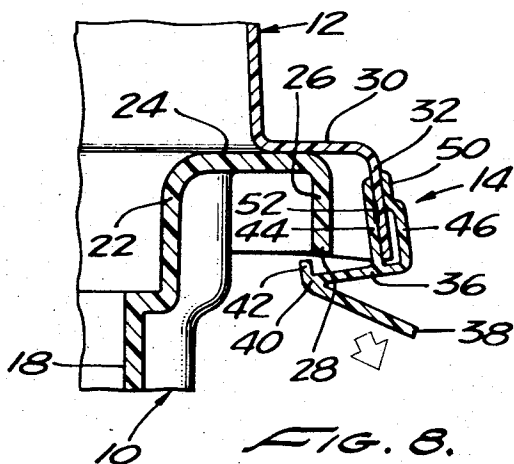
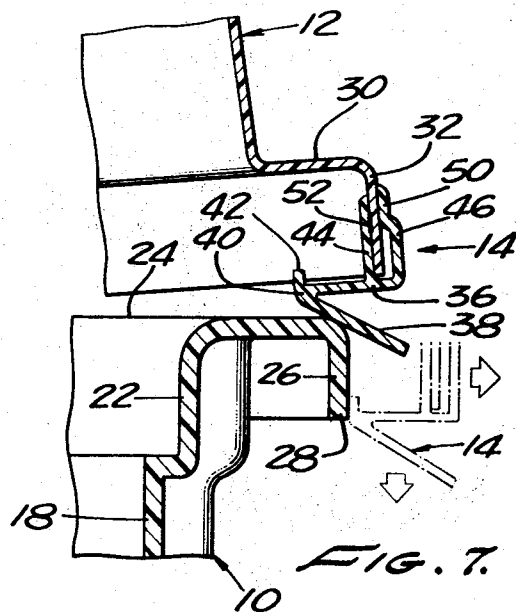
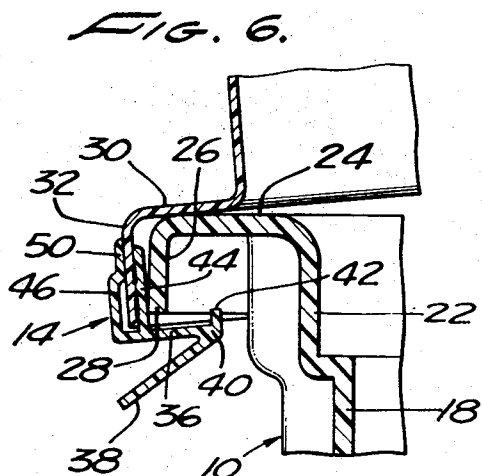
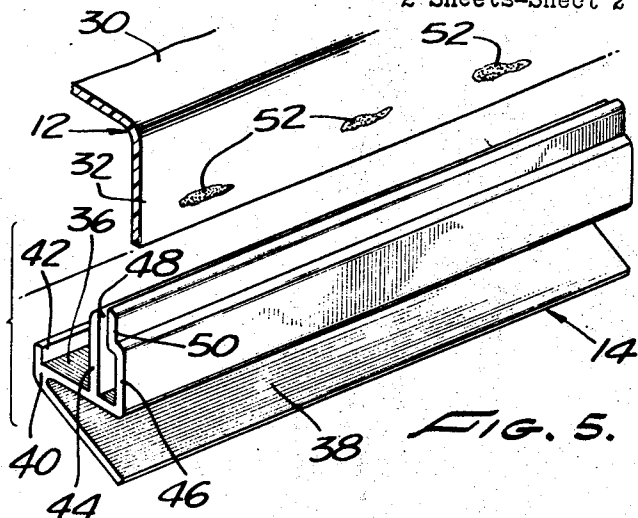
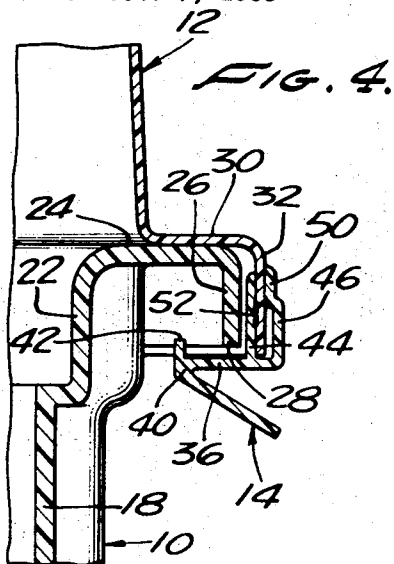
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CONTAINER

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2 Claims

ABSTRACT OF THE DISCLOSURE

A closable container in which a resilient box lid is releasably secured to a box by means of a rigid lid clip mounted on the lower edge of a flange on the lid, the lid clip extending under an enlarged shoulder on the box whereby the edge of the lid must be deliberately flexed outwardly to disengage the lid clip from the lower side of the shoulder.

This invention relates to a container in which a box having an enlarged shoulder at the upper edge thereof is releasably secured to a lid by means of a lid clip.

The lid clip is an elongated member of uniform cross-section which is adapted to be fitted at the user's option to a wide variety of box-lid combinations. The lid clip is of such configuration that the lid carrying it can be placed on the box with a minimum of effort by merely pushing down on the lid. Disengaging the lid from the box, however, requires a very deliberate and calculated effort. This makes it very easy for a person to releasably secure the lid to the container, but very difficult for a person to accidentally dislodge the lid from the container. The lid clip is very rigid so that the necessary flexing, which is required to engage and release the clip from the shoulder of the box, occurs within the lid, rather than within the structure of the lid clip. The lid clip is adapted to be used interchangeably with lids of varying wall thicknesses.

For a more detailed description of the invention reference is made to the accompanying drawings in which:

FIG. 1 is a perspective view of a container in which a lid is secured to a box by means of a lid clip;

FIG. 2 is a side elevation of the container shown in FIG. 1;

FIG. 3 is a partial side elevation taken along lines 3—3 in FIG. 2;

FIG. 4 is a partial cross-sectional view of a container at the juncture of the box shoulder and the lid;

FIG. 5 is an exploded partial perspective view of the lid and clip;

FIG. 6 is a partial cross-sectional view of a container at the juncture of the lid and box shoulder with the lid slightly displaced on the shoulder;

FIG. 7 is a partial cross-sectional view of the juncture of a lid and box showing the orientation of the box, lid, and lid clip just before the lid is releasably secured to the box;

FIG. 8 is a partial cross-sectional view of the juncture of a lid and a box showing the orientation of the box, lid and lid clip just prior to the release of the lid from the box; and

FIG. 9 is a partial cross-sectional view of a relatively thick-walled lid with a lid clip mounted in operative position on the lid.

Referring particularly to the drawings, there is illustrated a box 10, a box lid 12, and a generally V-shaped lid clip 14. Together, box 10, box lid 12, and the lid clip 14 comprise a container indicated generally at 16.

Box 10 is provided with a continuous side wall 18, which extends around and defines the side periphery of box 10. A bottom wall 20 is joined at its periphery to the

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bottom of side wall 18. Side wall 18 is provided at its upper edge with an enlarged outwardly turned shoulder 22. Enlarged shoulder 22 includes upper side 24 and a downwardly depending rim 26. Rim 26 terminates in a rim lower edge 28.

Box lid 12 is adapted to cover the open top side of box 10. Box lid 12 is composed of a rigidly resilient material. Box lid 12 includes a shelf or lateral portion 30 which is adapted to cooperate with and rest on upper side 24 of enlarged shoulder 22. A lid flange 32 depends downwardly from lateral portion 30 and is adapted to extend downwardly over the periphery of enlarged shoulder 22 to a location at least level with rim lower edge 28.

Lid clip 14 is comprised of a rigid material and is provided with an elongated uniform cross-section having a generally V-shaped configuration. Lid clip 14 is provided with a lateral wall or first leg 36, a ledge or second leg 38 extending at an acute angle to first leg 36. First and second legs 36 and 38, respectively, define therebetween a V having an apex 40. A lip 42 depends outwardly from first leg 36 at about apex 40. A first flange 44 depends outwardly from about the end of first leg 36 which is remote from apex 40. Second flange 46 also depends outwardly from the remote end of first leg 36. First and second flanges 44 and 46, respectively, define therebetween a channel 48 (see FIG. 5). The outermost flange 46 is provided with an outer flange portion 50, which is offset inwardly from the remainder of second flange 46. Because of this offset, channel 48 is wider at the bottom than it is at the top. Lid clip 14 is attached to lid flange 32 at rigid attachment points 52. For clarity of illustration, rigid attachment points 52 have been illustrated only between lid flange 32 and first flange 44. It is, however, understood that lid flange 32 is also generally attached to both flanges 44 and 46.

It is often desired to convert a lid-box container from one which was originally not designed to be secured together to one which is releasably secured together. It is, of course, impossible to return the container to the factory to have it remanufactured, so it is desired to provide some convenient and rapid means for converting the container to one in which the lid may be releasably secured to the box. According to the present invention, a lid clip is provided which may be applied to the lower edge of the lid by means of an adhesive or other suitable attachment means so as to rapidly convert the container into one in which the lid is releasably secured to the box. The lid clips 14 are installed on opposite sides of lid 12, and lid 12 is releasably secured to box 10, as indicated generally in FIGS. 6 and 7. One lid clip is positioned in engaging relationship with rim 26 on one side of a box, and the lid clip on the opposite side is forced downwardly on enlarged shoulder 22 so that second leg 38 rests on and slides outwardly over the outer edge of shoulder 22. The necessary resilient flexing to accomplish the movement of lip 14 from the unlatched configuration illustrated in FIG. 7 to the latched configuration illustrated in FIG. 4 is afforded by the resiliency of the container lid. The lid flexes so that lid clip 14 is guided along the outer side of second leg 38 until apex 40 reaches a point where it moves downwardly along the outer side of rim 26 to the position shown in phantom in FIG. 7. As soon as the upward edge of lip 42 passes below rim lower edge 28, the resiliency of the lid 12 forces first leg 36 underneath the lower edge of enlarged shoulder 22 into the engaged position shown in FIG. 4. Once it is latched the clip 14 serves to hold the lid and the box together very securely. The upwardly projecting lip 42 depends upwardly from the apex 40 to a position where it is at least on a level with rim lower edge 28 but is not so long as to prevent clip 14 from being unlatched when desired. In this position lip 42 tends to prevent clip 14 from slipping

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out from underneath the lower edge of enlarged shoulder 22. This prevents accidentally dislodging the cover from the box. This permits the container to be carried by means of the cover, if so desired, without danger of disengaging the cover from the box. In order to intentionally disengage the cover from the box, it is necessary to forcibly flex the cover downwardly and outwardly so that the outer edge of lip 42 passes under rim lower edge 28. This configuration is shown particularly in FIG. 8, where the arrow indicates the direction in which the lid clip 14 is moved by flexing the lid 12. The ledge or second leg 38 provides a convenient ramp down which the clip is moved into shoulder engaging relationship by pressure on lid 12. The acute angle between legs 36 and 38 is selected so that the pressure on the upper surface of lid 12 will cause leg 38 to slide outwardly along the upper outer edge of enlarged shoulder 22. Second leg 38 also provides a convenient handle by which the clip 14 may be grasped to flex lid 12 so that clip 14 moves out of engaging relationship with the lower edge of shoulder 22.

The adaptability of clip 14 to lids of varying wall thicknesses and configurations is illustrated by comparison of FIGS. 8 and 9. In FIG. 8 the wall thickness of lid 12 is approximately equal to the normal gap between first flange 44 and second flange 46. In FIG. 9 the wall thickness of wall 12 is substantially thicker than the normal gap between first flange 44 and second flange 46, but second flange 46 has moved outwardly to accommodate the thicker lid flange 32. The offset between outer flange portion 50 and the remainder of second flange 46 is sufficient so that the channel 48 is wide enough at the bottom to receive the lower edge of the thickest flange which it is anticipated will be inserted in channel 48. Second flange 46 operates as a spring clip which moves inwardly or outwardly as required to accommodate various thicknesses of lid flanges.

The containers of this invention may be constructed from a wide variety of materials including resilient metals and synthetic plastics. Particularly desirable materials include such synthetic plastics as polymers of styrene, methyl methacrylate, polycarbonates, and the like.

As will be understood by those skilled in the art, what has been described are preferred embodiments in which modifications and changes may be made without departing from the spirit and scope of the accompanying claims.

What is claimed is:

1. A container comprising a rigidly resilient box lid, and a rigid lid clip mounted on said lid and adapted to releasably secure said box lid in covering relationship to a box, said box lid comprising a lateral portion and a flange depending downwardly from said lateral portion, said lateral portion being adapted to rest on the upper side of an enlarged shoulder on the upper edge of a box with said lid flange extending downwardly over the periphery of said enlarged shoulder, said lid clip compris-

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ing a laterally extending wall, a pair of upwardly extending flanges depending from one end of the first side of said wall, said flanges defining therebetween a narrow upwardly opening channel, the lower edge of said lip flange being received in said channel, said lid flange being rigidly secured to at least one of said upwardly extending flanges, a lip depending upwardly from the other end of said first side of said wall, and a ledge extending from the second side and other end of said wall at an acute angle with said wall, said lateral wall being adapted to extend under and releasably engage said enlarged shoulder.

2. A lid clip comprising an elongated rigid structure having in cross-section:

a normally horizontal wall having an outer edge and an inner edge;

a first vertical wall rising up from the upper surface of said horizontal wall at the outer edge thereof;

a second vertical wall rising up from the upper surface of said horizontal wall, spaced inward from and generally parallel with said first vertical wall so as to define a narrow channel therebetween, one of said vertical walls having on its upper extremity a protuberance extending partially into said channel for frictionally gripping a lid flange that may be received in said channel;

a short lip rising up from the upper surface of said horizontal wall at the inner edge thereof;

and a leg extending from the under surface of said horizontal wall at the inner edge thereof in a downward and outward direction at an acute angle to said horizontal wall, to a point vertically beneath the outer edge of said horizontal wall;

said lid clip being somewhat resilient so that said channel will accommodate lid flanges of differing thickness, and said leg serving as a gripping handle for manipulating the lid clip and lid flange.

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U.S. Cl. X.R.

229—47; 292—303