Feb. 6, 1968 M. T. FARQUHAR 3,367,558

CONTAINER CLOSURE AND BLANKS FOR MAKING SAME

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Fig 1.

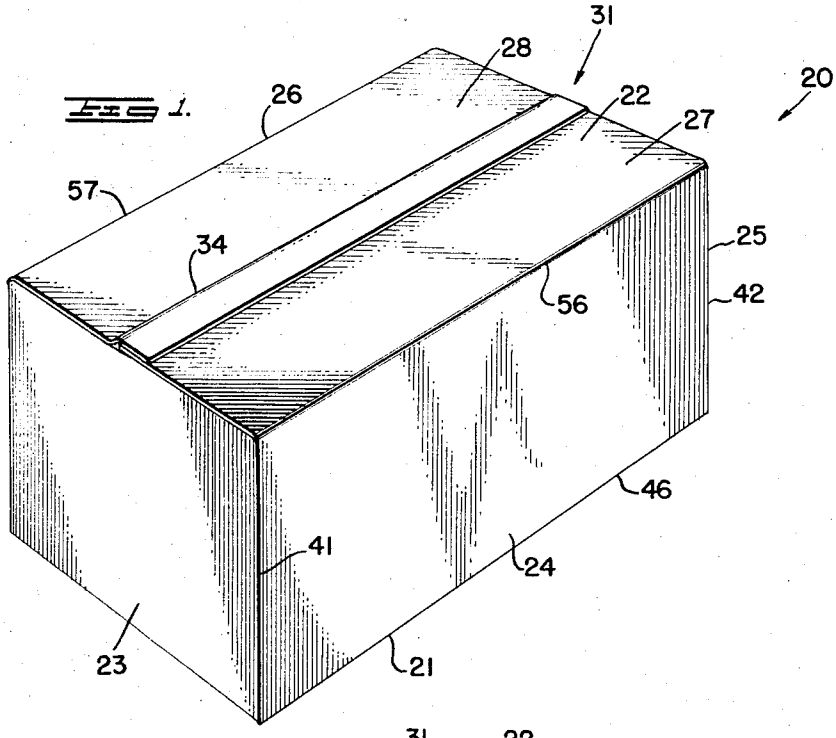
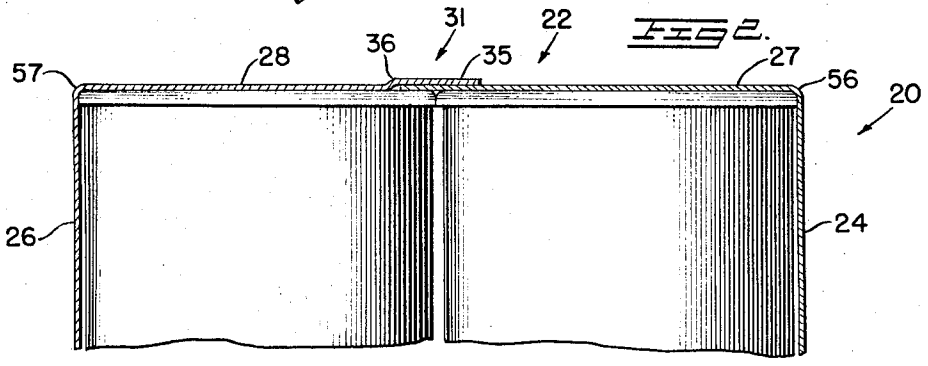


Fig 2.



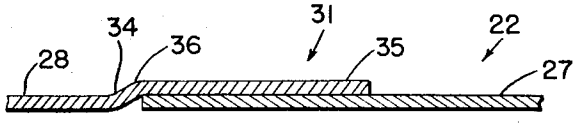


Fig 3.

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Fig 4

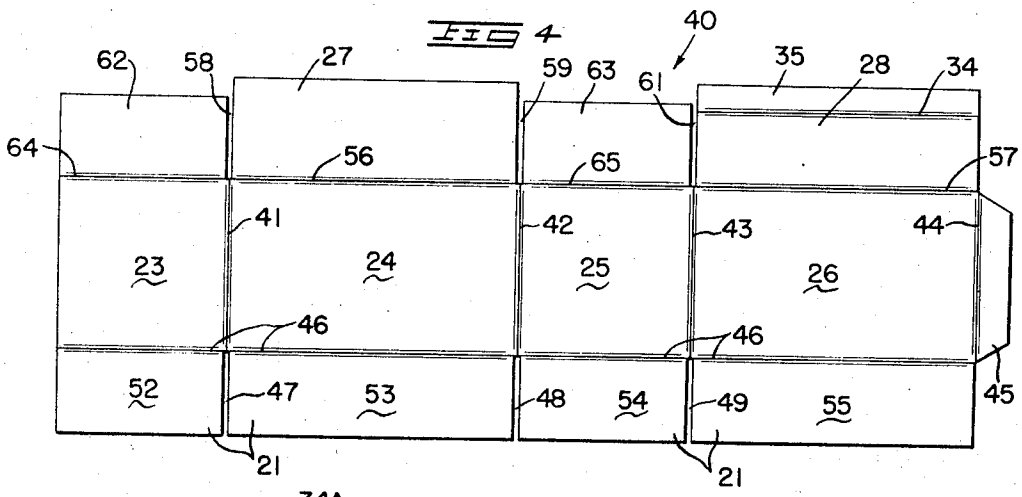


Fig 5

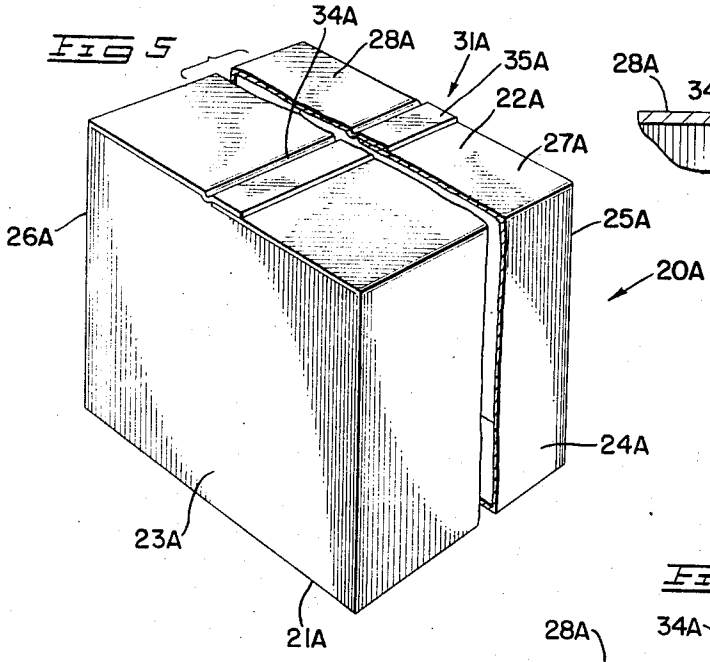


Fig 7

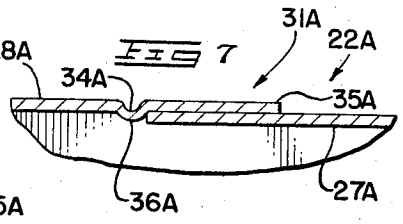


Fig 6

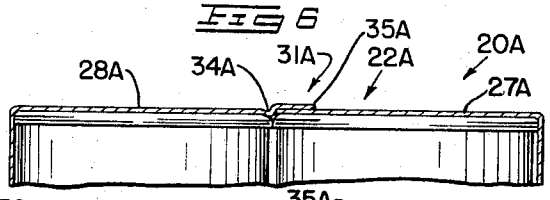
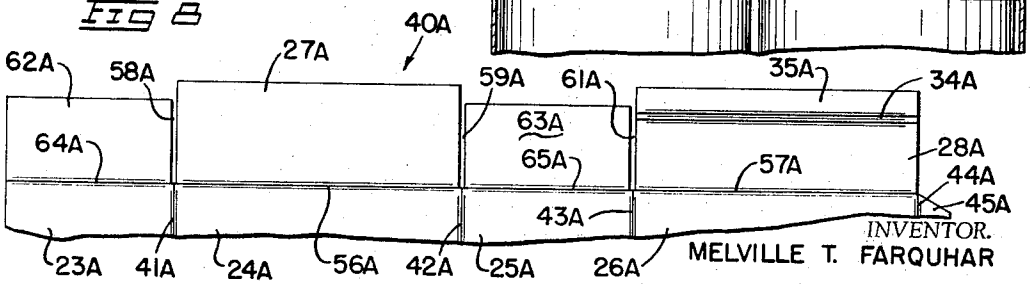


Fig 8



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CONTAINER CLOSURE AND BLANKS FOR MAKING SAME

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ABSTRACT OF THE DISCLOSURE

This disclosure relates to an improved lap joint closure for an exterior wall of a container comprised of a pair of cooperating flaps in which one of such flaps has rectilinear score means provided in its terminal outer end defining an overlapping area means which is overlapped against the terminal end portion of the other of such flaps to enable such pair of flaps to be fastened together substantially in a common plane, whereby a smooth sealed joint is provided having minimum projection transverse such common plane, high strength, and a pleasing appearance.

This invention pertains to junction means for joining cooperating surface means and more particularly to a smooth lap joint closure for container side wall means and to improved blanks for making containers having smooth lap joint closures.

One feature of this invention is to provide a smooth joint between cooperating surface means which is easily and economically formed and which provides a continuous surface of high structural strength.

Another feature of this invention is to provide a smooth lap joint closure for side wall means of a container by overlapping the terminal end portions of a pair of foldable flaps defining such side wall means.

Another feature of this invention is to provide a smooth lap joint closure for a container having rectangular side wall means formed by a pair of generally rectangular flaps in which the terminal ends of such rectangular flaps are fastened together to form a continuous surface for such rectangular side wall means.

Another feature of this invention is to provide a smooth high strength lap joint closure for the top wall of a container which has the shape of a parallelepiped in which such closure has a pleasing appearance yet provides maximum structural strength.

Another feature of this invention is to provide a closure for side wall means of a container in which such side wall means is formed by a pair of foldable flaps which are arranged essentially in a common plane and joined together by overlapping their terminal end portions to provide a smooth joint with minimum protuberance at the overlap area.

Therefore, it is an object of this invention to provide a smooth lap joint closure for side wall means of a container having one or more of the novel features of this invention as set forth above or hereinafter shown or described.

Another object of this invention is to provide improved container blanks for making containers having such a closure.

Other objects, uses and advantages of this invention are apparent from a reading of this description, which proceeds with reference to the accompanying drawings forming a part thereof and wherein:

FIGURE 1 is a perspective view of an improved exemplary container having its top wall formed by two rectangular flap portions fastened together using one embodiment of the lap joint closure of this invention.

FIGURE 2 is a sectional view of the container of FIGURE 1 showing, in solid lines, the positions of cylindrical cans carried within the container with respect to the lap joint closure.

FIGURE 3 is an enlarged sectional view of the embodiment of the lap joint closure shown in FIGURES 1 and 2.

FIGURE 4 is a plan view of an improved blank for making the container illustrated in FIGURE 1.

FIGURE 5 is a fragmented perspective view showing another exemplary container having two flaps forming its top wall fastened together using another embodiment of the lap joint closure of this invention.

FIGURE 6 is a sectional view of the container of FIGURE 5 with parts cut away and showing, in solid lines, the positions of cylindrical cans carried therein relative to the lap joint closure.

FIGURE 7 is an enlarged sectional view of the lap joint closure shown in FIGURE 5.

FIGURE 8 is part of a plan view showing only the flaps forming the top wall of the container of FIGURE 5. The remainder of the blank is identical to the blank of FIGURE 4 except for those top wall details particularly shown and thus are not illustrated again.

While the various features of this invention are hereinafter illustrated and described as being particularly adaptable to provide a smooth lap joint closure for side wall means of a container, such as a container formed from a single sheet of foldable material, it is to be understood that the various features of this invention can be utilized singly or in any combination thereof to provide a smooth lap joint for other surface means which are to be joined.

Therefore, this invention is not to be limited to only the embodiments illustrated in the drawings because the drawings are merely utilized to illustrate one of the wide variety of uses of this invention.

In the exemplary embodiment of this invention illustrated in FIGURES 1–4 an improved container **20** is illustrated which has a pair of flaps defining its top wall fastened together by one embodiment of a smooth lap joint closure of this invention, as well as the improved blank, in FIGURE 4, for making such container and closure.

The lap joint of this invention provides a smooth continuous surface between a pair of joined surfaces and assures that those portions of such surfaces adjoining the overlapped areas are arranged essentially in a common plane. The lap joint thus provided assures that there are no voids or spaces between the adjoining ends of such pair of cooperating joined surfaces while providing smooth transition therebetween with minimum protuberance at the overlap area. The unique manner of scoring employed by this invention enables a pair of cooperating surfaces to be blended together in a nesting or intermeshing manner to provide a strong joint which has a pleasing appearance.

As particularly illustrated in FIGURE 1 of the drawings container **20** has a plurality of six generally rectangular exterior side walls shown as a bottom wall **21**, a top wall **22**, and four vertical walls **23**, **24**, **25** and **26** extending between and fastened to the peripheral edges of such bottom wall and top wall to define container **20**.

Top wall **22** has a first generally rectangular flap **27** and a second generally rectangular flap shown at **28** cooperating with flap **27** to define a continuous surface for top wall **22**. As will be apparent from FIGURES 1–3 of the drawings flaps **27** and **28** are fastened together using the unique lap joint of this invention as shown at **31**, such that both flaps lie in a common horizontal plane with minimum protuberance by joint **31** out of such plane.

Joint 31 provides a top wall 22 having maximum structural integrity as well as providing a smooth joint having a good appearance.

Score means shown as rectilinear score means at 34 is provided in rectangular flap 28. Score means 34 is spaced apart from and parallel to the terminal end of flap 28 thereby defining overlapping area means shown as an overlapping strip 35 (see FIGURE 4) extending beyond score means 34 as will be apparent from FIGURE 3, strip 35 cooperates with the terminal end portion of flap 27 and upon being fastened thereto provides a high strength joint. While any suitable fastening means may be used to fasten the terminal end portions of flaps 27 and 28, a suitable glue is preferably employed. Such glue may be of the resealable type enabling flaps 27 and 28 to be unfastened and refastened without damage.

In this exemplary embodiment of the invention it will be seen that score means 34 provides an offset shown at 36 in the terminal end portion of flap 31 as particularly illustrated in FIGURE 3. This offset extends generally transverse the plane of flap 28 by a distance generally corresponding to the dimensional thickness of the terminal end of flap 27 associating with strip 35.

The overlapping area means or strip 35 extends beyond offset 36 defined by score means 34 in parallel relation to the remainder of flap 28 while lying against the terminal end of flap 27. The terminal end of flap 27 is nested in offset 36 provided in flap 28 and thereby provides a continuous surface for top wall 22 which lies in a horizontal plane with minimum projection transverse such horizontal plane at the overlap area.

Container 20 can be formed in any suitable manner and made from any suitable foldable material. It is preferably formed from the container blank 40, illustrated in FIGURE 4. Blank 40 is made of cardboard or the like having a side such as the exposed surface thereof laminated with metallic foil, such as aluminum-containing metallic foil, or the like, suitably colored, embossed, imprinted, or remaining plain, as desired.

Blank 40 is of a generally rectangular outline suitably cut and scored to define, in this example, six foldably connected exterior side walls 21, 22, 23, 24, 25 and 26 which form a container having the shape of a parallelepiped.

Parallel spaced apart score or fold lines are provided in blank 40 and illustrated at 41, 42, 43 and 44 defining respectively a vertical edge of side walls 23, 24, 25 and 26. A closure flap 45 extends beyond fold line 44 and upon forming container 20 from blank 40 is fastened to side wall 23 to define an open-ended tubular structure.

Bottom wall 21 is defined by a score line 46 extending across the lower end portion of each wall 23–26 normal to the terminal ends of score lines 41–44 and by a series of parallel spaced apart cuts 47, 48 and 49. Cuts 47, 48 and 49 extend from their associated portion of score line 46 and perpendicular thereto to define four foldable flaps 52, 53, 54 and 55 each foldable about their respective portion of score line 46 to form bottom wall 21 upon being folded into a common plane and suitably fastened together.

Top wall 22 is formed by a pair of cooperating generally rectangular flaps 27 and 28 extending respectively from a pair of score lines 56 and 57 arranged transverse the entire upper end of side walls 24 and 26 respectively. Score line 56 cooperates with a pair of cuts 58 and 59 extending respectively beyond the terminal upper end of score lines 41 and 42 to define flap 27. Similarly, score line 57 cooperates with a cut 61 extending from the terminal upper end of score line 43 to define flap 28.

A pair of end tabs 62 and 63 are also provided in blank 40. Tab 62 is defined by score line 64 defining the upper edge of end wall 23 and cut 58 at the side thereof extending normal to a terminal end of score line 64. Tab 63 is defined by a score line 65 defining the upper edge of end wall 25 and cuts 59 and 61 on opposite sides

thereof and extending normal to opposite terminal ends of score line 65.

The generally rectangular flaps 27 and 28 defining top wall 22 are folded against end tabs 62 and 63 and are thus provided additional support.

Rectilinear score means, shown at 34, is provided in flap 28 generally parallel to the terminal end thereof and defines an overlapping slightly offset area means or strip 35 of rectangular outline. Strip 35 cooperates with the terminal end portion of flap 27 upon assembling blank 40 to form container 20 and is fastened thereto to provide a smooth lap joint of strong structural strength.

In the example illustrated in FIGURES 5–8, another embodiment of this invention is shown in a container 20A and its associated blank. For clarity similar parts in both embodiments of this invention are designated by the same numeral, followed in this latter embodiment by the reference letter A. The description in this latter embodiment has been abbreviated for conciseness.

Container 20A has six generally rectangular exterior side walls shown as a bottom wall 21A, a top wall 22A and four vertical walls 23A, 24A, 25A and 26A extending between and fastened to the peripheral edges of such bottom and top walls.

Top wall 22A is formed by a pair of extension flaps 27A and 28A extending respectively from side walls 24A and 26A. Flaps 27A and 28A are fastened together using a lap joint 31A to define a continuous surface for top wall 22A which is free of voids, spaces, and the like at the point of junction.

As will be apparent from FIGURE 7 of the drawings flaps 27A and 28A lie practically in a common horizontal plane with minimum outward protuberance by joint 31A out of such plane. Joint 31A has a smooth outward appearance as well as providing a joint which is of strong structural strength as will be apparent from the following description.

Score means illustrated as a deep score at 34A is provided in the terminal end portion of rectangular flap 28A. Score means 34A is spaced apart from and parallel to the terminal end of flap 28A thereby defining a strip 35A extending beyond such score means 34A. Strip 35A overlaps the terminal end portion of flap 27A and is fastened thereto by any suitable means such as glue or the like.

In this exemplary embodiment of the invention it will be seen that score means 34A forms projection means or a projection 36A in the inner surface of flap 28A. The overlapping area means or strip 35A extends beyond projection 36A such that the terminal end of flap 27A is positioned immediately adjacent projection 36A, preferably engaging such projection along its length upon fastening flaps 27A and 28A together. The extent or height of projection 36A from the plane of flap 28A is generally equal to the thickness of flap 27A along its terminal end portion.

With the terminal end of flap 27A abutted against projection 36A a continuous surface is provided for top wall 22A. Furthermore, the intermeshing of flaps 27A and 28A assures that such top wall lies in a practically horizontal plane with minimum projection transverse such horizontal plane at the overlap area.

Container 20A can be formed in any suitable manner and made from any suitable foldable material such as cardboard having metal foil laminated to a side thereof. Container 20A is formed from the container blank 40A, the top wall portion of which is illustrated in FIGURE 8. Blank 40A is identical, except for the top wall portion illustrated in FIGURE 8, to the blank 40 illustrated in FIGURE 4. Therefore, because of this identical nature the illustration and description of blank 40A will be limited to the portion defining top wall 22A.

Obviously a complete blank has been disclosed for container 20A by making reference to FIGURES 4 and 8. In fact, except for the top wall, the previous description of blank 40 could be read again with the reference letter

A visualized after all numerals and be fully applicable to blank 40A.

Top wall 22A comprises a pair of cooperating generally rectangular flaps 27A and 28A each coextensive in width respectively with side walls 24A and 26A and extending respectively from score lines 56A and 57A in such walls. Score line 56A cooperates with a pair of cuts 58A and 59A extending normal to the terminal ends of score line 56A and to the outer periphery of blank 40A to define flap 27A. Similarly, score line 57A cooperates with a cut 61A extending normal to the inner end of score line 57A and to the outer periphery of blank 40A to define flap 28A.

Rectilinear score means shown at 34A, is provided in flap 28A generally parallel to the terminal end thereof. Score means 34A provides a fairly deep impression forming a projection 36A as previously described and defines an overlapping area means or strip 35A of rectangular outline. Strip 35A cooperates with the terminal end portion of flap 27A upon assembly blank 40A to form container 20A and is fastened thereto to provide a strong lap joint as previously described.

The terms "bottom wall," "top wall," "end wall" and "side wall" have been utilized in this disclosure merely to define the position of the walls as shown in the drawings. It is to be understood, however, that the exemplary container as shown could be oriented in any manner.

Thus, it is seen that a smooth lap joint closure has been provided for side wall means of a container by uniquely forming the terminal end portion of one of a pair of flaps which define such side wall means and then fastening it to the terminal end portion of the other flap of such pair to provide a continuous surface lying essentially in a common plane. The lap joint thus provided is of high structural strength, has a pleasing appearance, and is easily and economically formed.

Further, this invention provides improved blanks for making containers having such smooth lap joint closures.

While the form of the invention now preferred has been disclosed as required by the statutes, other forms may be used, all coming within the scope of the claims which follow.

What is claimed is:

1. A smooth lap joint closure for a generally rectangular top wall of a container comprising, a first generally rectangular flap defining a portion of the exterior surface of said top wall, a second generally rectangular flap cooperating with said first rectangular flap to define the remainder of the exterior surface of said top wall, and score means spaced apart from and parallel to the terminal end edge of said second rectangular flap, said score means providing offset means offsetting the terminal end portion of said second rectangular flap outwardly in a direction generally transverse the plane of said second rectangular flap by an amount equal to the thickness of

said first rectangular flap and defining overlapping area means extending beyond said offset means and parallel to said second rectangular flap, said rectangular flaps being arranged in a common plane upon placing the terminal edge of said first rectangular flap against said offset means and define the exterior surface of said top wall in which only said overlapping area means is arranged outwardly of said common plane and parallel therewith and said overlapping area means provides minimum overlap while assuring the provision of a smooth sealed joint having high strength and of said exterior surface having a pleasing appearance.

2. A blank being suitably cut and scored and adapted to be assembled to define a resulting container, said blank comprising a plurality of foldably connected wall means, a first generally rectangular flap extending from one of said wall means, a second generally rectangular outer flap extending from another of said wall means, and rectilinear score means in said second rectangular flap spaced apart from and parallel to the terminal end edge thereof, said score means defining offset means offsetting said terminal end portion of said rectangular flap in a direction generally transverse the plane of said second rectangular flap by an amount equal to the thickness of said first rectangular flap and defining overlapping area means arranged outwardly of said score means, and upon assembling said resulting container said rectangular flaps are folded into a common plane with the terminal edge of said first rectangular flap being placed against said offset means and said rectangular flaps define the exterior surface of top wall means of said resulting container in which only said overlapping area means is arranged outwardly of said common plane and parallel therewith and said overlapping area means provides minimum overlap while assuring the provision of a smooth sealed joint having high strength and of said exterior surface having a pleasing appearance.

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