Sept. 6, 1966 J. R. REDPATH ETAL 3,270,946

ICE CREAM CARTON

Filed April 13, 1964 2 Sheets-Sheet 1

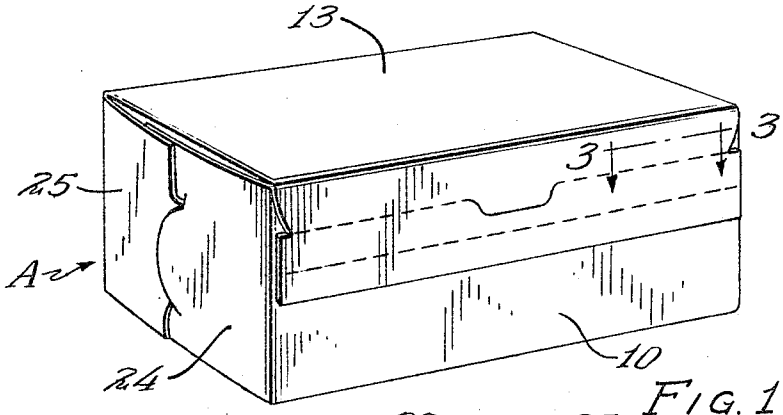


FIG. 1

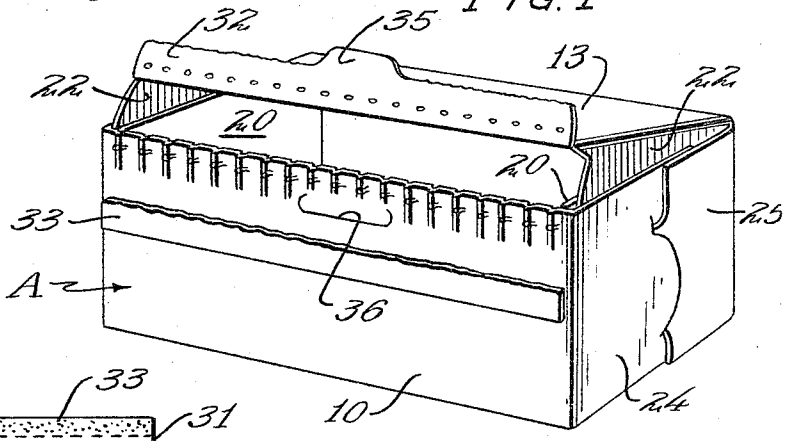


FIG. 2

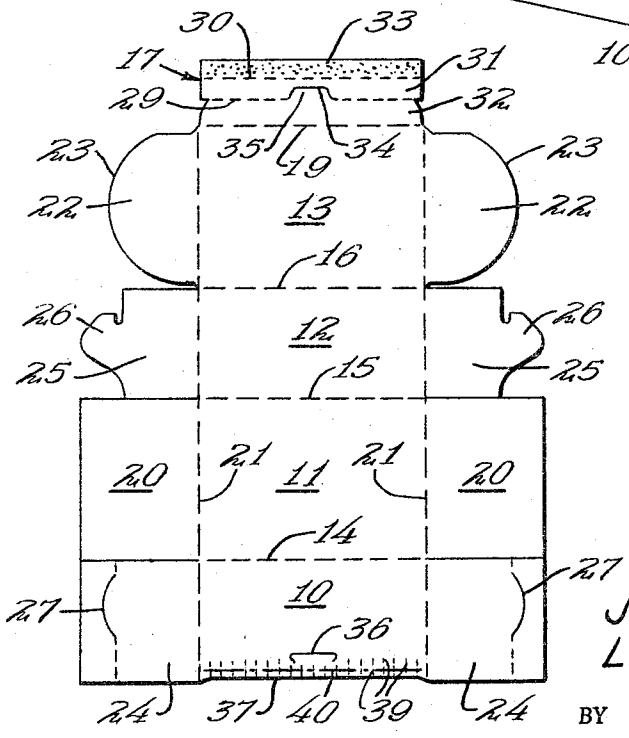


FIG. 4

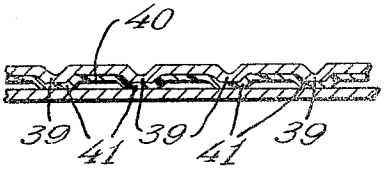


FIG. 3

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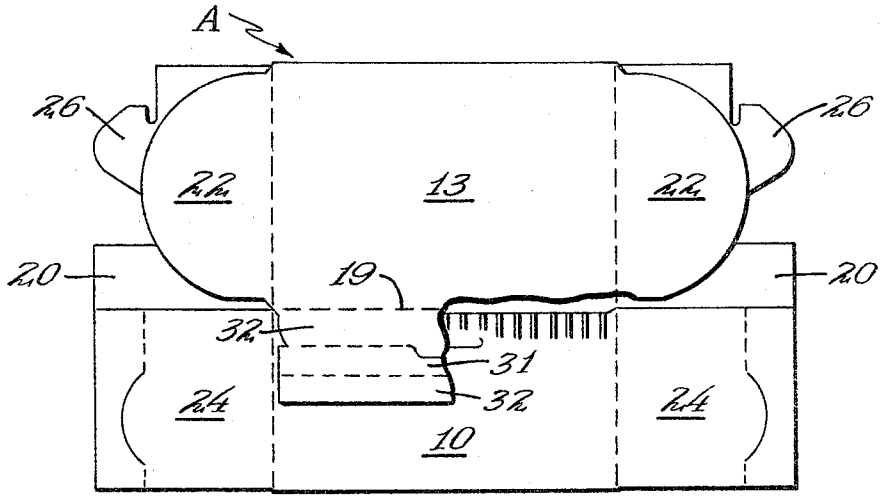


FIG. 5

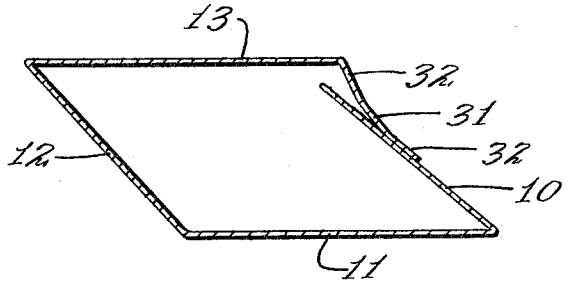


FIG. 6

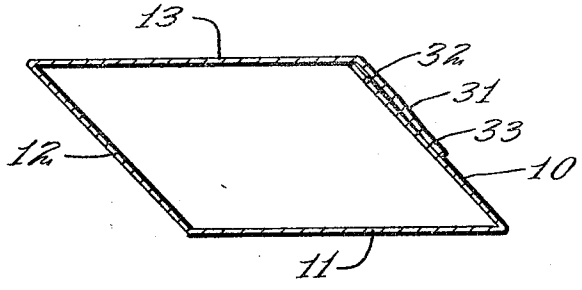


FIG. 7

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ICE CREAM CARTON

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3 Claims. (Cl. 229—51)

This invention relates to an improvement in ice cream cartons and deals particularly with a reclosable carton useful in containing ice cream or similar material.

Ice cream cartons of the type designed to hold a half gallon of ice cream have for many years been made with reclosable end flaps so that the carton bay be reclosed after a portion of the contents have been removed. More recently, trunk style cartons have become popular, such cartons having a top panel which may be opened to expose a much greater area of the contents than is exposed by opening a carton end. It has also been found that cartons may be readily made combining the two previous structures so that the cartons may be opened either from the end or from the top. It is this general type of carton which forms the basis of the present invention.

In order to produce a combination carton of the type described, a tubular body is formed having a glue flap which overlies the outer surface of one of the carton walls which normally comprises the front carton wall. Closure flaps are provided on the ends of these tubularly arranged walls, and the outermost pair of opposed flaps are interlocked to hold the carton end closed. By disengaging the lock of these flaps, an end of the carton may be reopened if desired. Furthermore, by detaching the glue flap from the wall to which it is secured, the panel bearing the glue flap may be hinged upwardly to expose a greater area of the product.

With the cartons of this type, it is necessary to provide some simple way of detaching the glue flap to open the top of the carton. Many ways have been devised to accomplish this result, usually by limiting the adhesive coated areas connecting the glue flap to the front wall of the carton to simplify the separation. However, in the larger packages, where substantial weight is involved, it is desirable to provide an effective and continuous seal between the glue flap and the front panel. It has therefore, been proposed to elongate the glue flap to cover a greater area of the front panel, and to anchor the marginal edge of the glue flap to the front panel and to provide a removable tear strip between the anchored area and the hinged edge of the glue flap. While such a construction works effectively as an opener, difficulty is experienced in opening the cartons from a flat state in which they are stored to a tubular form. This is caused by the tendency for the glue flap to hinge intermediate its edges rather than along its line of connection with the top panel.

It is an object of the present invention to provide an ice cream carton of the trunk style which has been generally described and which lacks the objections made to most cartons of this type. To accomplish this result, a glue flap is hinged to the top panel and extends a substantial distance down over the front panel. A detachable tear strip extends across the length of the glue flap midway between the upper and lower edges thereof. The lower edge of the glue flap is securely adhered to the front panel. The upper portion of the glue flap, between the tear strip and the line of hinge connecting the tear strip to the top panel, is secured to the front panel along small areas of engagement or by a relatively weak area of attachment. This connection is sufficiently strong to hold the glue flap in face contact with the front panel throughout its area during the opening or folding of the carton from a flat form to an erected form. At the same time, after the tear strip has been removed, the portion of the glue flap between the

tear strip and the top panel may be readily detached from the front wall of the carton.

A further feature of the present invention resides in the provision of a simple means of insuring a limited attachment between the glue flap and the front panel which may function on regular gluing equipment.

These and other objects and novel features of the present invention will be more clearly and fully set forth in the following specifications and claims.

In the drawings forming a part of the specification:

FIGURE 1 is a perspective view of the carton in closed condition.

FIGURE 2 is a perspective view of the same carton in partially opened position.

FIGURE 3 is an enlarged sectional view through a portion of the carton, the position of the section being indicated by the line 3—3 of FIGURE 1.

FIGURE 4 is a diagrammatic view of the blank from which the carton is formed.

FIGURE 5 is a plan view of the folded blank, a portion of the glue flap being broken away to disclose the normally covered portion of the front panel.

FIGURE 6 is a sectional view through a partially open carton showing the manner in which the glue flap flexes in the absence of the upper line of attachment.

FIGURE 7 is a view similar to FIGURE 6 showing the manner in which the two lines of adhesive hold the glue flap in the face contact with the front wall.

The carton A is formed of the blank illustrated in FIGURE 4 of the drawings. The blank includes a front panel **10**, a bottom panel **11**, a rear wall panel **12**, and a top panel **13** connected along parallel fold lines **14**, **15**, and **16**. A glue flap structure which is indicated in general by the numeral **17** is hingedly connected to the forward edge of the top panel **13** along a fold line **19**. The glue flap **17** is designed to overlap the front panel **10** and be adhered thereto as will be later described.

The specific design of the end closures may vary to some extent, but in the form illustrated, end flaps **20** are hinged to opposite ends of the bottom panel **11** along fold lines **21**, the end flaps **20** being of an area substantially similar to the cross sectional area of the carton to form a full unbroken panel against the end of the product. Closing flaps **22** are hinged to opposite ends of the top panel **13** along extensions of the fold lines **21**, these flaps **22** preferably having some form of curved edges which permit the cover panel **13** to swing open without interference. The closure flaps **22** are normally closed outwardly of the bottom panel flaps **20**. The flaps are held in closed position by locking flaps **24** hingedly connected to the front wall **10** along the fold lines **21** and locking flaps **25** are hinged to the rear wall panels **12** along these same fold lines. The flaps **25** are shown as being provided with hook shaped locks **26** designed to extend through slots **27** in the locking flaps **24**. As this structure is generally conventional, the detailed shape of the locks and slots has not been described. As indicated in FIGURES 1 and 2, the locking flaps **24** and **25** hold the ends closed and may be reopened if it is desired to remove the carton contents from the end.

The glue flap structure **17** is divided into three areas by a pair of parallel weakened lines of separation **29** and **30**. The area between the weakened lines **29** and **30** comprises a removable tear strip **31**. The area between the upper weakened line **29** and the fold line **19** connecting the tear strip to the top panel **13** comprises a tuck flap **32**. The area between the weakened line **30** and the end of the glue flap structure comprises an anchoring flap **33**.

The weakened line **29** is preferably interrupted intermediate its ends by a generally U-shaped cut line **34** which defines a projecting tab **35**. The front panel **10**

is provided with a locking slot **36** spaced from the edge **37** which will become the upper edge of the front wall **10**. The slot **36** is adapted to accommodate the tab **35** after the tear strip area **31** has been removed.

The upper portion of the front panel **10** which underlies the tuck flap **32** when the glue flap is secured in overlapping relation with the front panel is provided with a series of parallel outwardly embossed score lines **39**, these score lines being shown in enlarged section in FIGURE 3 of the drawings. These space score lines **39** are designed to provide narrow lines of contact between the upper portion of the front wall **10** and the inner surface of the tuck flap **32**. The score lines **39** are preferably in right angular relation to the upper edge **37**.

By way of explanation, it should be stated that cartons such as ice cream cartons are usually heavily coated with wax or covered with a film which is highly resistant to most adhesives. As a result, during recent years a hot melt adhesive had been used to adhere coated cartons of this type. The use of this adhesive creates a problem where separable areas of connection are desired, as the adhesive bond is unusually strong. In the past, it has been common practice to print portions of the surfaces to be adhered with an ink which tends to repel the glue. However, this ink does not effectively repel a hot melt adhesive. Furthermore, difficulty is experienced in applying spots or small discrete areas of a hot melt adhesive due to its high viscosity and its tendency to cool quickly. Thus the usual means of providing a readily separable attachment using a hot melt adhesive cannot be employed.

We have found that the problem can be effectively solved by the provision of the outwardly embossed lines **39** arranged at generally right angular relation to a thin line of hot melt adhesive indicated by the numeral **40**. By embossing the lines **39** to an extent greater than the thickness of the line of adhesive **40**, only the portions of the crests of these embossed lines which are adhesively coated will adhere to the tuck flap **32**. As a result, the tuck flap **33** is attached only at spaced areas indicated at **41** permitting the manual separation of the tuck flap from the front panel.

With this arrangement, intermittent points of adhesion may be provided even though the line of adhesive is continuous. In the interest of economy, attempts are made to position the glue applicator roller so that glue will be applied only to the crests of the embossed areas. However, due to the nature of the adhesive, some of the adhesive will normally be found in at least some of the areas between the lines of embossment, but these portions of the adhesive merely harden on the surface of the board without adhering to the glue flap.

In the gluing of the manufacturer's joint, adhesive is applied along the line **40** as well as to the inner surface of the anchoring flap **33**. The carton is then folded along the fold lines **14** and **16** to bring the glue flap structure **17** into engagement with the front wall panel **10** of the carton. It should be noted that in the position of the blank indicated in FIGURE 4, the embossed areas extend downwardly from the surface of the sheet and the glue is applied to the under surface of the sheet while the adhesive is applied to the upper surface of the anchoring flap **33**. When sealed, the carton A appears as indicated in FIGURE 5 of the drawings.

FIGURE 6 of the drawings indicates the undesirable condition which exists as the cartons are opened up in the event the tuck flap **32** is not adhered to the front wall. The weakened lines of separation which form the tear strip **31** will usually fold more easily than the fold line **19** due to the fact that the tear strip is defined by perforations or cut lines while the fold line **19** must usually comprise a score line. Thus when the cartons are squared up by the use of suction cups or other conventional means, the upper portions of the glue flaps tend to swing away from the upper portion of the front wall as shown in

FIGURE 6, which action might even sever the carton along one of the weakened lines. This is prevented by the line of adhesive **40** which detachably secures the tuck flap **32** to the front wall, resulting in the normal opening of the cartons as indicated in FIGURE 7 of the drawings.

In using the closed carton shown in FIGURE 1, one end of the tear strip **32** is grasped and pulled forwardly, detaching this area **32**. The cover panel **13** may then swing open to expose the carton contents. In reclosing the carton, the cover panel is swung downwardly, the cover panel flaps **22** sliding between the innermost flaps **20** and the locking flaps **24**, **25**. The locking tongue or tab **35** may be inserted through the slot **36** in the front wall in order to hold the tuck flap **32** against the front wall.

In accordance with the patent statutes we have described the principles of construction and operation of our ice cream carton, and while we have endeavored to set forth the best embodiments thereof, we desire to have it understood that obvious changes may be made within the scope of the following claims without departing from the spirit of our invention.

We claim:

1. A carton including

a sheet of paperboard of substantially uniform thickness cut and creased to provide a series of foldably connected wall panels,

a glue flap hinged to one end wall panel of said series adapted for attachment with the other end panel of the series to form a tubular body,

said glue flap having two spaced weakened lines of separation extending thereacross generally parallel to the end of the glue flap and dividing the glue flap into an anchoring section between one said weakened line and the end of the glue flap, a removable tear strip section between said weakened lines, and a detachable section between the other said weakened line and the fold line connecting said glue flap to said one end wall panel,

adhesive connecting said anchoring section securely in face contact to said other end wall of said series,

said tear strip section being free of adhesive connection to said other end wall of said series, and

one of the overlapping areas of said detachable portion and said other end wall including spaced embossed areas extending toward the other overlapping area and adhered thereto, said embossed areas holding the areas between said embossed areas out of face contact,

whereby when said tear strip section is removed, said detachable section may be easily detached from said other end wall.

2. The structure of claim **1** and in which said detachable section includes a locking tongue extending into the tear strip section, and in which said other end wall includes a slot into which said other end wall includes a slot into which said locking tongue may extend when said tear strip section is removed and said detachable section detached.

3. The structure of claim **1** and in which the spaced embossed areas are parallel.

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