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CARTON OPENING MEANS

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3 Sheets-Sheet 1

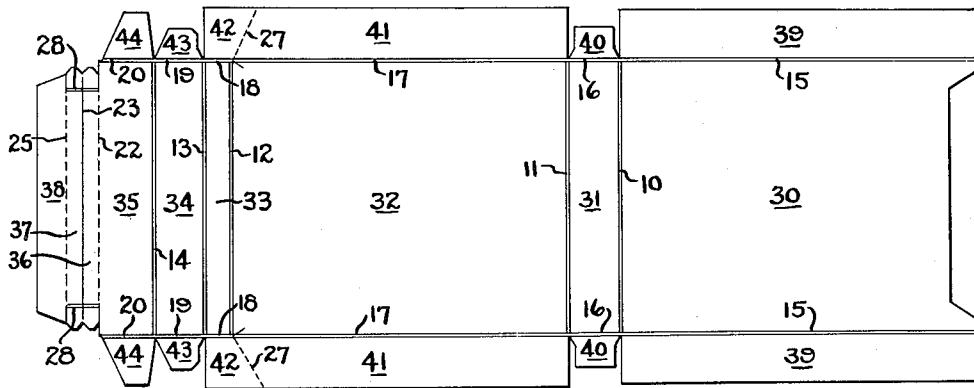


Fig. 1

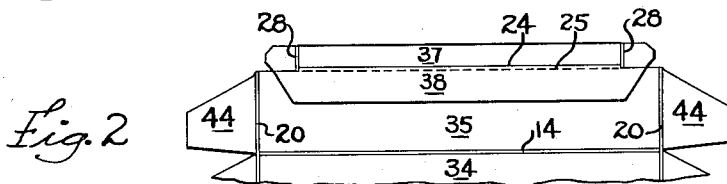


Fig. 2

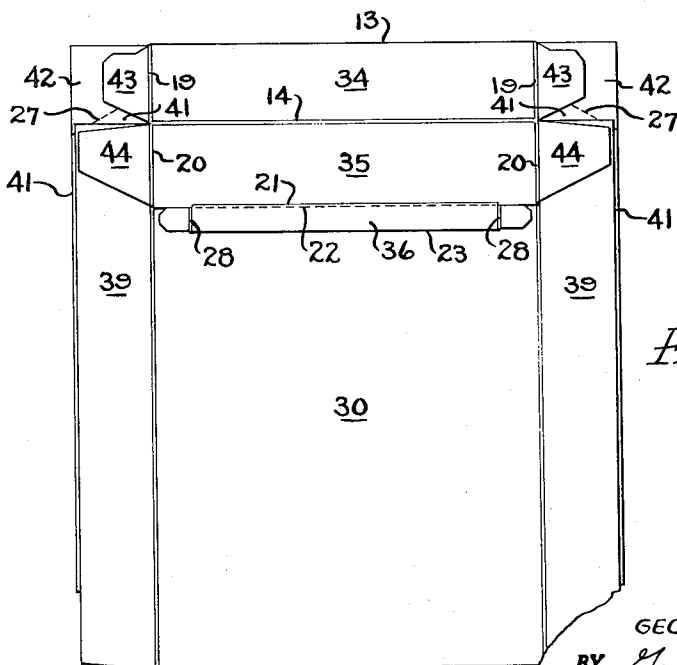


Fig. 3

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3 Sheets-Sheet 2

*Fig. 4*

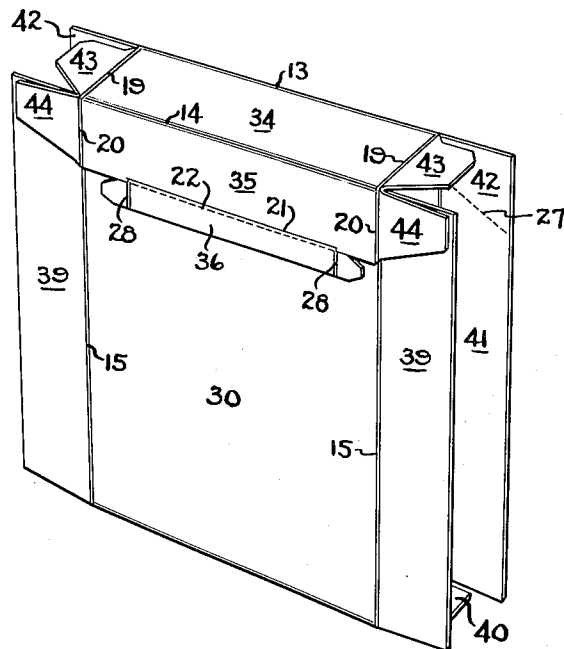
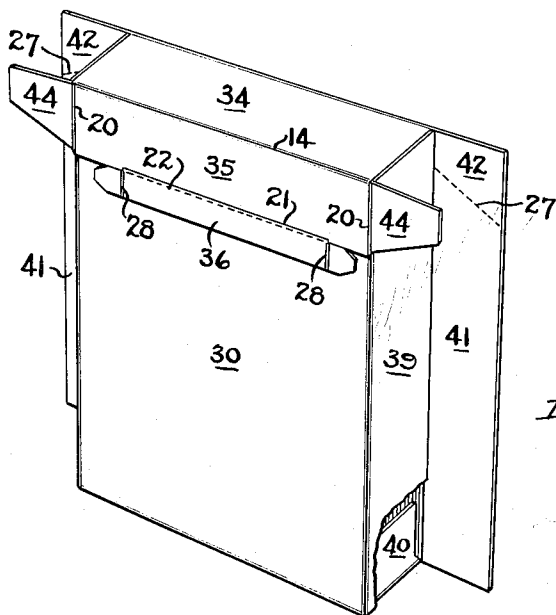


*Fig. 5*

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1

3,085,736

## CARTON OPENING MEANS

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6 Claims. (Cl. 229—51)

This invention relates to a tamperproof opening means for cartons. More specifically, the invention relates to an opening means employing a tear strip and which is suitable for use on cartons having a reclosable cover or lid.

When employing an opening means on a carton, several features are desirable. The opening means should be essentially tamperproof so that any opening prior to that of the user is readily ascertainable. Further, the means employed should not materially weaken the carton construction so as to impair the overall strength of the unopened carton. Also, the means should be easy to open as well as readily accessible. Undesirable ripping or tearing otherwise than at the desired areas should be avoided. Finally, the construction of the means should be such as to present a neat appearance of the carton after it has been opened. This result is particularly important from the sales standpoint in the case of a carton which is to be opened and reclosed a number of times by the consumer and not thrown away after the initial opening.

One of the principal objections to many of the opening means previously employed on ice cream, butter and frozen food cartons is that the carton shape is distorted when opened. In the case of prior glued opening means frequently tearing or peeling of the glued portion of the carton panels occurs. Such tearing not only weakens the carton and in many cases exposes the contents in unintended areas, but also leaves an unsightly looking package.

The general object of the present invention is to provide an opening means employing a tear strip which is cleanly detachable without a tearing or peeling of the carton panels.

Another object of the invention is to provide an opening means that is essentially tamperproof.

Yet another object of the invention is to provide an opening means which is readily accessible and which ensures a complete detaching action.

Still another object of the invention is to provide an opening means which does not substantially weaken the initial carton construction.

A further object of the invention is to provide an opening means which when employed does not distort the shape of the carton.

Yet another object of the invention is to provide an opening means which when employed presents a neat appearance of the carton after opening.

This invention provides means for readily and cleanly detaching a two-ply tear strip formed of one strip connected to one of the carton panels and having another portion adhered to another carton panel, the latter panel being in subposed relationship to the first mentioned carton panel. Because the tear strip is connected to said panel only by perforated score lines, when the tear strip is detached it cannot tear or peel the adjacent carton panels. The adhered portion to which the tear strip is connected is covered by the free edge of the aforementioned carton panel, and hence when the tear strip is removed the reclosed carton has a neat appearance.

Further details and advantages of the invention will be apparent from the following specification and appended drawings wherein:

2

FIGURE 1 is a plan view of an integral blank suitably cut and scored to form a tamperproof carton having a tear strip opening means,

FIGURE 2 is a fragmental view of the upper portion of the blank of FIGURE 1 folded and glued,

FIGURE 3 is a plan view of the blank of FIGURE 1 folded upon itself and having certain superposed portions adhered together as a step in making a carton from the blank,

FIGURE 4 is a perspective view of the folded blank of FIGURE 3 partially set up,

FIGURE 5 is a perspective view of the same partially set up blank at still a further stage,

FIGURE 6 is a perspective view of the completed carton in closed and sealed condition.

FIGURE 7 is a perspective view of the closed carton with the tear strip partially removed, and

FIGURE 8 is a perspective view showing the carton opened.

Referring to FIGURE 1, the opening means are shown with a carton which is made of a single foldable blank of flexible material, such as paperboard. The blank is divided by score lines 10—20 and perforated lines 27 into hingedly connected panels and flaps, including front panel 30, bottom panel 31, back panel 32, back cover panel 33, top cover panel 34, front cover panel 35, side wall panels 39, bottom flaps 40, side wall panels 41, side cover panels 42, top cover flaps 43, and front cover flaps 44.

The opening means constituting this invention are connected to the free edge of front cover panel 35 along perforated line 22.

The opening means comprises tear strip panel portions 36 and 37 which are hingedly connected together by score line 23 and glue flap 38 connected to tear strip portion 37 along perforated line 25. Panel portions 36 and 37 preferably have the same dimensions. Partial cut line 24, shown in FIGURE 2, and partial cut line 21, shown in FIGURE 3, facilitate detachment of the tear strip, as will be described more fully hereinafter. Score lines 28 aid in removing the tear strip when opening the sealed carton as will be described later herein.

In forming the carton from the blank as described adhesive is first applied to tear strip portion 37. This strip is then folded about score line 23 and is adhered to tear strip portion 36 in the position shown in FIGURE 2. These two adhered panel portions, 36 and 37, together constitute what is hereinafter referred to as a two-ply tear strip. If desired these panel portions are merely folded over but not adhered. Glue flap 38 and front cover panel 35 to which the two-ply tear strip is connected remain unadhered to each other.

Next, adhesive is applied to the outside surface of the glue flap 38 which is shown in FIGURE 2. Front panel 30 is then folded about score line 10 to lie directly superposed on bottom panel 31 and back panel 32. Top cover panel 34 with the elements attached thereto lying in a common plane are then folded about score line 13 so that adhesive bearing surface 38 overlies and is adhered to front panel 30. The two-ply tear strip is directly superposed on front panel 30 with no intervening panel to separate them. This stage of construction is shown in FIGURE 3.

The carton shell of FIGURE 3 is then squared as shown in FIGURE 4. In this position the carton panels are all at right angles. At this point the carton is side loaded prior to complete closure. Bottom flaps 40 and top cover flaps 43 are folded inwardly to lie parallel with the side edges of front and back panels 30 and 32, re-

spectively. Side wall panels 39 are then folded about score lines 15 to overlie in superposed relationship the previously infolded bottom flaps 40 and top cover flaps 43. FIGURE 5 shows this further stage with a portion of one of the bottom corners cut away.

Front cover flaps 44 are infolded along score lines 20 to overlie side wall panels 39 in superposed relationship. Following this step adhesive is applied on the exposed portions of both side wall panels 39 and front corner flaps 44. The carton is completed by infolding side wall panels 41 and side cover panels 42 to abut the adhesive bearing portions in adhered relationship. The closed and sealed carton is shown in FIGURE 6. It is apparent that any tampering with the carton is readily ascertainable since no portion can be opened without permanently showing the point of entry.

Referring to FIGURE 8, the carton is unsealed by removing the two-ply tear strip 36, 37. This is done by grasping the strip at either end and pulling upward and away from one side to the other. Score lines 28 facilitate the bending out of the end portion of the two-ply tear strip, which are attached only by score lines 28, enabling the user to grasp the ends more readily. The strip is detached easily along the perforated lines 22 and 25. Partial cut lines 21 and 24 prevent a tearing or peeling of the elements involved. Any tendency to tear or peel either up into front cover panel 35 or down into tear strip portion 37 is stopped when the partial cut lines are reached. This eliminates a jagged or torn appearance on the edges of the glue flap 38 and front cover panel 35. If the two-ply tear strip should accidentally break prior to its complete detachment, it can either be detached by starting at the other end or grasping the remaining portion and continuing in the original direction. These features are missing in prior cartons that employ a tear strip which is attached along both edges and which can be torn from only one end.

When the tear strip is completely detached, the carton has the appearance of a conventional flip top or hinged cover box. Essentially the carton looks like the portions of FIGURE 7 which has the tear strip detached. Glue flap 38 is covered by the lower edge of front cover panel 35 and is visible only when the cover is opened. Since front cover panel 35 is no longer attached, only the connection between side wall panels 41 and side cover panels 42, namely perforated lines 27, prevents opening of the carton. Separation of panels 42 from panels 41 along perforated lines 27 enables the cover of the carton which is hingedly connected along score line 12 to swing upward. The outside surface area of the hinged cover is comprised of back cover panel 33, top cover panel 34, front cover panel 35 and side cover panels 42. As shown in FIGURE 6, only glue flap 38 remains of the original opening means employed. This flap again becomes invisible when the carton cover is reclosed.

The opening means of the present invention is particularly adaptable to reclosable, flip-top or hinged cover cartons as demonstrated in the described embodiment. Although shown only on one side of the carton, the opening means may extend around on as many sides as desired. Thus the whole cover portion of a carton may be released to come away free from the rest of the carton by employing the tear strip around the entire perimeter of the carton. It is not necessary that a reclosable, flip-top carton be employed since the opening means is useful with a variety of carton constructions. The size and shape of the cartons utilizing the opening means of the present invention may be varied as desired since the opening means rather than the specific size and shape of the cartons themselves without said means comprise the invention.

The present invention provides an opening means which does not materially weaken the initial carton construction, is essentially tamper-proof, readily accessible, and easy to detach. Either of the ends or a portion in the center

may be grasped to continue detachment if the tear strip breaks at any point between the ends. The carton with the tear strip removed has a neat appearance without disfiguration due to peeling and tearing initiated by the opening means. The size and shape of the elements employed in the opening means may be varied in numerous ways by those skilled in the art without departing from the spirit of the invention.

I claim:

1. An opening means for a tubular carton, the carton including a receptacle portion having a front panel and a cover portion having a front cover panel overlying said front panel; said means comprising a first tear panel connected to said front cover panel along a first line of weakening, a second tear panel hingedly connected to said first tear panel and a glue panel connected along a second line of weakening to said second tear panel, said second tear panel and said glue panel being folded under said first tear panel and said front cover panel respectively with said glue panel adhered to said front panel and said first and second lines of weakening being substantially coincident in superposed relation.

2. The means of claim 1 wherein the tear strip is detachably connected by said lines of weakening.

3. The means of claim 1 wherein said front cover panel has a partial cut line on the outer side adjacent said line of weakening connecting said front cover panel and said first tear panel, and said second tear panel has a partial cut line on the side facing said front panel adjacent said line of weakening connecting said second tear panel and said glue panel.

4. A tamperproof, reclosable carton formed of a single blank suitably cut and scored to provide a receptacle portion having an opening at the top thereof and a hinged box-like cover portion telescoped over the open top of the receptacle portion; said receptacle portion comprising a front panel, a bottom panel, a rear panel and side panel, said cover portion comprising a rear panel hingedly connected to the upper edge of said rear receptacle panel, a top cover panel, a front cover panel and side cover panels, a first tear panel connected to the edge of said front cover panel along a line of weakening, a second tear panel having the same shape as said first tear panel and hingedly connected to said first tear panel and a glue panel connected along a line of weakening to said second tear panel, said second tear panel being folded underneath and adhered to said first tear panel and said glue panel being folded underneath said front cover panel with the surface adjacent thereto unadhered and having the opposite surface adhered to the overlapped portion of the front receptacle panel adjacent said front cover panel and said first and second lines of weakening being substantially coincident in superposed relation.

5. The carton of claim 4 wherein said front cover panel has a partial cut line on the outer side adjacent said line of weakening connecting said front cover panel and said first tear panel, and said second tear panel has a partial cut line on the side facing said front receptacle panel adjacent said line of weakening connecting said second tear panel and said glue panel.

6. An opening means for a tubular carton, the carton including front, side, back and bottom panels, and a cover portion including a front cover panel; said means comprising a tear strip folded back and adhered upon itself along a score line equidistant from its longitudinal edges and being detachably connected by lines of weakening along one longitudinal edge to said cover portion and along the other longitudinal edge to a flap that is adhered to a front panel adjacent said cover portion, said tear strip being in direct superposed relationship with said adjacent front panel, said front cover panel having a partial cut line on the outer side adjacent said line of weakening connecting said front cover panel to said tear strip and said tear strip having a partial cut line on the side facing said front cover panel adjacent said line of

3,085,736

5

weakening connecting said tear strip and said flap, said lines of weakening being substantially coincident in superposed relation.

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