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TEAR STRIP OPENING MEANS FOR PAPERBOARD CARTONS

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2 Sheets-Sheet 1

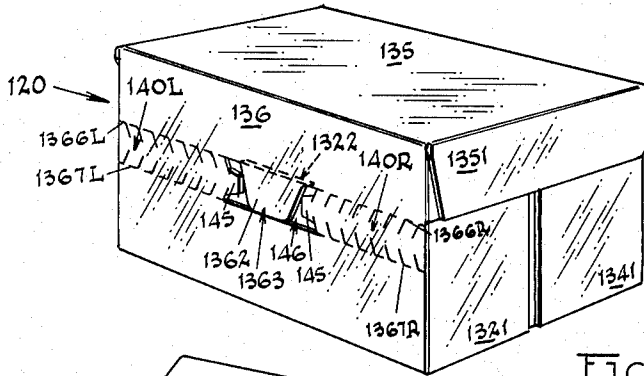


Fig. 1.

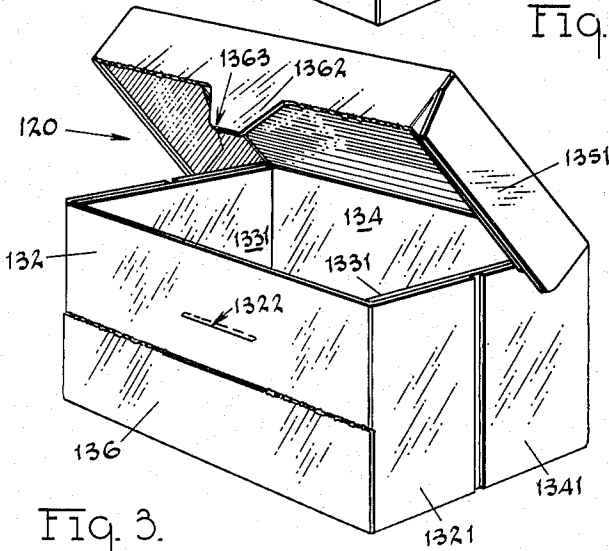


Fig. 3.

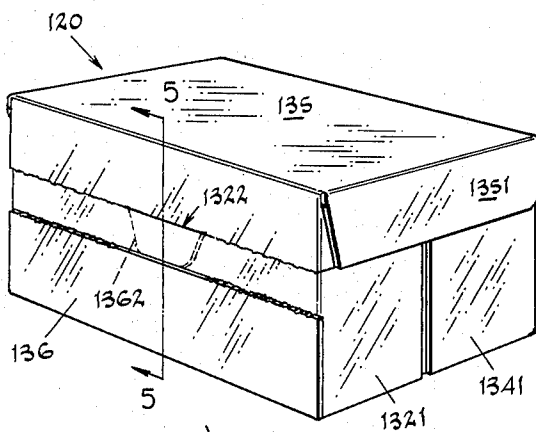


Fig. 4.

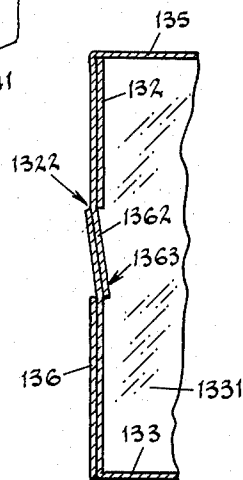


Fig. 5.

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2 Sheets-Sheet 2

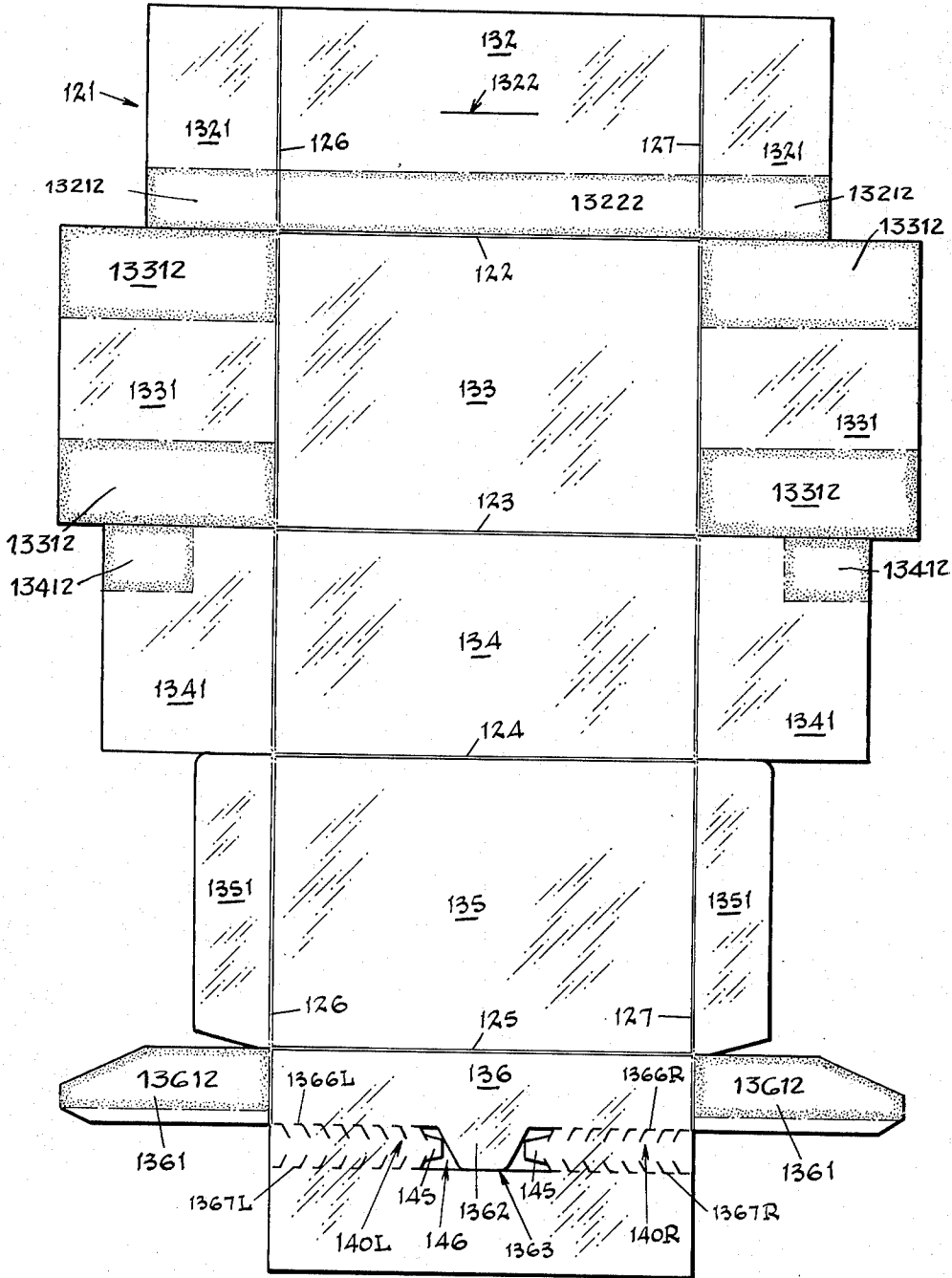


Fig. 2.

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3,235,167

**TEAR STRIP OPENING MEANS FOR  
PAPERBOARD CARTONS**

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2 Claims. (Cl. 229-51)

My invention pertains to an easily openable paperboard carton of the reclosable type such as illustrated in United States Patents No. 3,111,255 to Skowronski and No. 2,218,509 to Goodyear. A carton of this type is characterized by having a hingedly supported cover held closed by a thereto attached flap overlying and adhesively secured, along its outer edge only, to certain adjoining carton wall panels, the flap having two vertically spaced fracturing scores forming a tear strip therebetween by which, when drawn, the cover is freed from the secured portion of the flap and may be opened.

When a carton of this type is used to package ice cream, as the respective patentees thereof recommend, the necessity of keeping the contents cold often results in the carton becoming encrusted with an outer coating of frost. This frost coating presents an objectionable surface by which to grasp the carton because the coating, on original contact, is repulsively cold and icy slick and, thereafter, as the coating melts, becomes liquid slimy.

The nature, however, of the tear strip means, by which cartons of the mentioned type are opened, requires the carton to be grasped and held, while the tear strip is drawn away from the carton walls to free the cover for opening. To cope with this problem it has been proposed, as in the United States Patent No. 3,131,851 to Pace, to provide a carton cover tear strip in which the operation thereof to open the carton generates forces tending to hold the carton stationary without manual seizure of the carton itself. This is accomplished by providing the carton with a pair of tear strips in lineally extending relation, either about or along one side of the central axis of the carton opening closed by the carton cover, each tear strip being on opposite sides of a point substantially midway the length of the carton front panel and adapted to be drawn away from such midway point to free the cover for opening.

It is one of the objects of my invention in such a carton opening means to provide an enframing opening in the carton front panel to contain and space the adjoining or neighboring ends of the tear strips and to provide a locking tongue on the carton cover flap therebetween, which, after initial opening and when the entire carton contents are not dispensed at one time, may be used in holding the cover closed, as the carton is utilized for interim storage. Such spacing of the near ends of the tear strips and the presence of such locking tongue serves to call the user's attention to such ends and their function and may direct and suggest an intended pullaway use thereof.

There are other and more particular objects which my invention serves. These will appear from the following description and a consideration of the drawings that accompany such description. The description and drawings are directed to a preferred form of paperboard carton that now appears to me to be the best mode by which my invention be embodied and its teachings carried out. It is not, however, my intent, by such description or illustration to imply that no other form than those described and illustrated herein is within the contemplation of my invention, except as such may be specifically delineated hereafter.

In the mentioned drawings:

FIG. 1 is a perspective view of the preferred form of a tear strip opening means embodying my invention;

FIG. 2 is a plan view of a blank which, when folded and secured in a manner to be hereinafter explained, forms the carton with the tear strip opening means shown in FIG. 1;

FIG. 3 is a perspective view of the carton shown in FIG. 1 following opening thereof;

FIG. 4 is a perspective view of the carton shown in FIG. 3 on reclosing thereof; and

FIG. 5 is an enlarged section taken on the plane of the line 5-5 indicated in FIG. 4.

The carton 120, illustrated in FIG. 1, is constructed from a blank 121, illustrated in FIG. 2. The blank 121 has width wise extending crease scores 122, 123, 124 and 125 and lengthwise extending crease scores 126 and 127. The mentioned scores form an inner front wall 132, a bottom 133, a rear wall 134, a cover 135 and an outer front wall 136 to which are attached opposite end flaps 1321, 1331, 1341, 1351 and 1361. Preferably in a provision of adhesive securing means the blank 121 has a heat activated, cold setting adhesive applied thereto only in certain areas thereof which adhesive, in the normal handling of the blank, remains dormant until a predetermined heat, as in the carton sealing or forming machines, is applied to activate the same. Such areas would include zone 13222 on the inner front wall 132, zone 13212 on each end flap 1321; several zones 13312 on each end flap 1331; the zone 13412 on each end flap 1341 and the zone 13612 on each end flap 1361.

To provide a tear strip opening means embodying my invention, the portion of the blank 121 forming the outer front wall 136 is slit or notch scored along two sets of two parallel spaced lines, of which score lines 1366R and 1367R is one set and score lines 1366L and 1367L is the other. The score lines of each set extend outward and toward the end of the outer front wall 136 from a point on one side of and spaced from the center of area of such outer front wall 136. The score lines 1366R and 1367R originate on the right side of the counter of area of the outer front wall 136 and score lines 1366L and 1367L on the left side, as may be seen in FIG. 1 of the accompanying drawings. The score lines of each set are preferably axially spaced lineal extensions of the score lines of the other set and extend along lines that, when the blank 121 is erected, the scores will be above the adhesively secured portions of the inner and outer front walls 132 and 136, as will be hereinafter explained.

The sets of score lines, by weakening the material of the blank 121, each define a tear strip between them, the right hand set of score lines 1366R and 1367R defining a tear strip 140R and the left hand set 1366L and 1367L, a tear strip 140L. The inner end of each strip is cut to have a grasp tab 145 which the carton user may seize and then draw upon the tear strip, to which attention for that purpose may be directed, as by suitable instructions printed on or about the tab ends 145. To supplement the attention getting characteristic of the tab ends 145 of the tear strips 140R and 140L and facilitate carton user access thereto and protection thereof, until use is to be made thereof, the material of the outer front wall 136, in the vicinity surrounding the tab ends 145, is preferably removed to form an opening recess 146 which, on erection of the carton will frame and house the tab ends 145.

In addition, the tab ends 145 of the tear strips 140L and 140R in the outer front wall 136 of the blank 121 are spaced a distance from each other and instead of removing all the paperboard material forming the front

wall 136 between the tab ends 145, I utilize such material to provide a downward extending tongue 1362. The base or root of the tongue 1362 substantially coincides with lineal projections of score lines 1366L and 1366R and the tip of the tongue, formed by cut scored lines 1363, with lineal projections of the score lines 1367L and 1367R in the front wall 136.

That provision may be had to cooperate with the tongue 1362, the inner front wall 132 of blank 121 has a slit 1322 therein that is disposed to register with and be covered by the tongue 1362 and tab ends 145, when the carton 120 is first erected and sealed, as may be seen from FIG. 1 of the accompanying drawings. However, after the tear strip 140L and 140R have been drawn and the cover 135 raised to open the carton 121, as shown in FIG. 3 of the accompanying drawings, the slit 1322 is exposed for cooperation with the tongue 1362, in the manner shown in FIGS. 4 and 5 of the drawings.

As there shown, the tongue 1362 is adapted to be inserted, tip 1363 foremost, into and through the slit 1322, when the carton cover 135 is lowered to reclose the carton 120. The inherent resiliency of the paperboard material in the vicinity of the slit 1322 will exert a frictional clamp on the tongue 1362, thereby tending to hold the same against movement and the cover 135 closed, after reclosure.

The tongue 1362 may not only serve to hold the carton cover 135 closed but also to attract the attention of the carton user to the tear strip pulling tabs 145. In this connection, the surface of the tongue 1362 provides a convenient panel upon which instructions, as to opening and reclosing the carton 120, may be effectively printed.

The material of the blank 121 adjacent to the tabs 145 and on opposite sides of the tongue 1362 is removed thus to enlarge the opening recess 146 in the outer front wall 136. When the outer and inner front walls 136 and 132, respectively, overlay each other, as they do when carton 120 is erect, the opening recess 146 will serve to house the tabs 145 and tongue 1362 until use thereof is required. The frame which the recess 146 so provides serves further to bring the attention of the carton user to the tear strip pull tabs 145 and to the locking tongue 1362 and their intended uses.

Preparatory to shipping the blank 121 to the packer, the inner front wall 132 is folded inwardly about crease score line 122 and the remainder of the blank 121 folded inwardly upon itself about crease score 124. This places the outer front wall 136 in overlapping relation to the inner front wall 132 and the adhesive zone 1322 on said inner front wall 132 in facing relation with the inner surface of the outer front wall 136 along a line outside and below the lines of scores 1366R and 1367R and 1366L and 1367L. Also in this position, flaps 1361 will overlay flaps 1321. The end flaps 1361 of the blank 121 are substantially of a width equal to the length of the cover flaps 1351. In this position, heat is selectively applied to activate the then dormant adhesive in the zones 1322 and 13212. The collapsed tube thus formed from the blank 121 is ready to be shipped to the packer for storage and packaging use.

In contemplation of packing, the packer first usually erects the collapsed tubular blank 121, closes and seals one end thereof, up-ends the carton, if the fill is of a semi-liquid nature, as ice cream, fills the carton and then closes and seals the other end. End closing follows, in both instances, substantially, the steps now to be described. Preferably, the end flap 1331 is first folded in, then the rear and inner and outer front wall end flaps 1341, 1321 and 1361, respectively, are folded over the end flaps 1331. The end flaps 1321 and 1361, having been adhesively secured in forming the tube blank move together in end closing. Finally, cover end flap 1351 is folded over end flaps 1341, 1321 and 1361. Now, heat is applied to the thus assembled end flaps activating the

adhesive in the zones thereon to secure the end flaps in their in-fold, overlaying position.

Desiring to open the closed carton 120 shown in FIG. 1, the user inserts both thumbs, tip or nail end first, into the recess 146, between the facing edges of the tabs 145. Then, by a slight lifting movement, bends the tabs 145, outwardly into positions extending at an angle to the outer front wall 136. Now, seizing the tabs 145 between thumb and index fingers of each hand, the user coincidentally draws the tear strip 140R in a rightward direction and the tear strip 140L in a leftward direction. Continued pulling of the tear strips 140R and 140L away from each other separates the tear strips from the carton 120, which remains stationary between the tear strips, without the need of being held. When the tear strips have been drawn free of the carton, portions of the blank forming the outer front wall 136 will have been divided into two parts, an upper and a lower part, the lower part remaining adhered to the carton inner front wall and the other end flaps and the upper part extending, as a skirt, downwardly from the edge of the carton cover 135. The carton cover may now be lifted, as shown in FIG. 3 of the accompanying drawings, to open the carton. The contents of the carton may be dispensed and, if not all, the cover 135 may be reclosed and the carton 120 used for interim storage thereof.

After opening, the skirt on the cover 135 formed, as aforesaid, by the portions of the outer front wall 136 and the thereto connected flaps 1351 above the score lines 1366R and 1366L, operating in conjunction with the tongue 1362 and slit 1322 of the form and in the manner heretofore described and shown in FIG. 4 of the drawing, hold the carton cover 135 closed, upon reclosure.

Thus, it will be seen that I provide a teaching by which the advantages of rendering a carton tamper proof may be utilized, without sacrifice of the comfort of the carton user in effecting an authorized and desired carton opening.

I claim:

1. In a paperboard carton and cover securing means comprising
  - a flap integral with and hingedly connected along one edge thereof to an edge of said carton cover and in overlapping relation with said carton wall adjoining said carton cover edge and adhesively secured to said carton wall only in areas of said flap adjoining and along the edge thereof opposite said hingedly connected edge thereof;
  - the flap having an opening between the hingedly connected and adhesively secured edges thereof and substantially midway the width of the flap and a tongue having its root substantially midway the width of said opening on a line parallel to and spaced from the hingedly secured flap edge and a tip on a line parallel to and spaced from the adhesively secured flap edge whereby the tongue extends through the flap opening in a downward direction with reference to the carton cover;
  - the flap having two pairs of parallel lines of cut scoring, the lines of each of which pairs extend from edges of said flap opening on opposite sides of the tongue to the flap side edges and each line of each said pair being aligned with a line of cut scoring of the other and opposite pair and with one of the root and tip of said tongue whereby the flap portion between each said pair of scorings provides a tear strip having free ends adjoining the flap opening which may be manually seized and drawn upon to part the flap and thereby release the carton cover; and
  - the said adjoining carton wall having a straight line slit therein extending, when said flap is in overlapping relation to said carton wall, parallel to one of the flap hingedly and adhesively secured edges and underlying said tongue and adapted, after the flap has been parted by drawing upon the tear strips, to receive

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the tongue and holds the carton cover in carton closing relation.

2. In a paperboard carton cover securing means, as described in claim 1, in which  
 one of the lines of cut scoring of each pair of said lines of cut scoring is aligned with the root of the tongue and the other of the lines of cut scoring of each said pair is aligned with the tip of the tongue; and  
 the said slit in said adjoining carton wall extends along a line substantially coincident to the root of said tongue.

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GEORGE O. RALSTON, *Primary Examiner.*