

July 25, 1944.

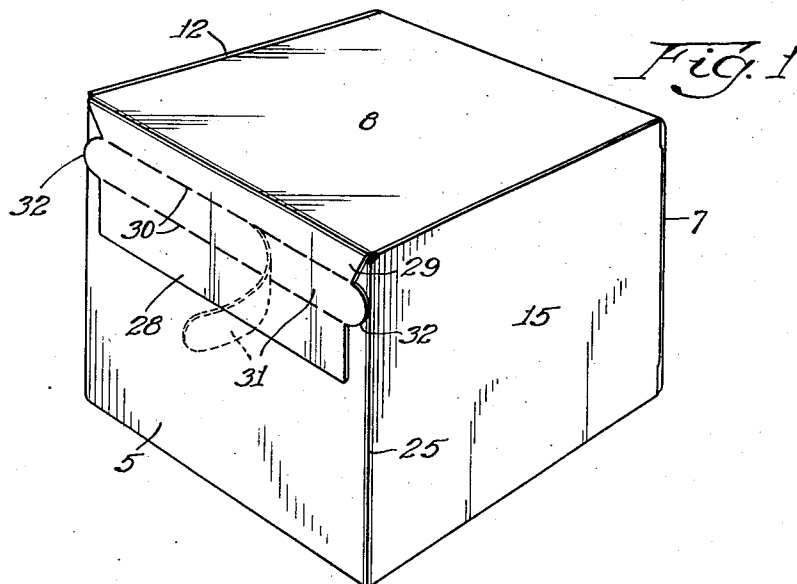
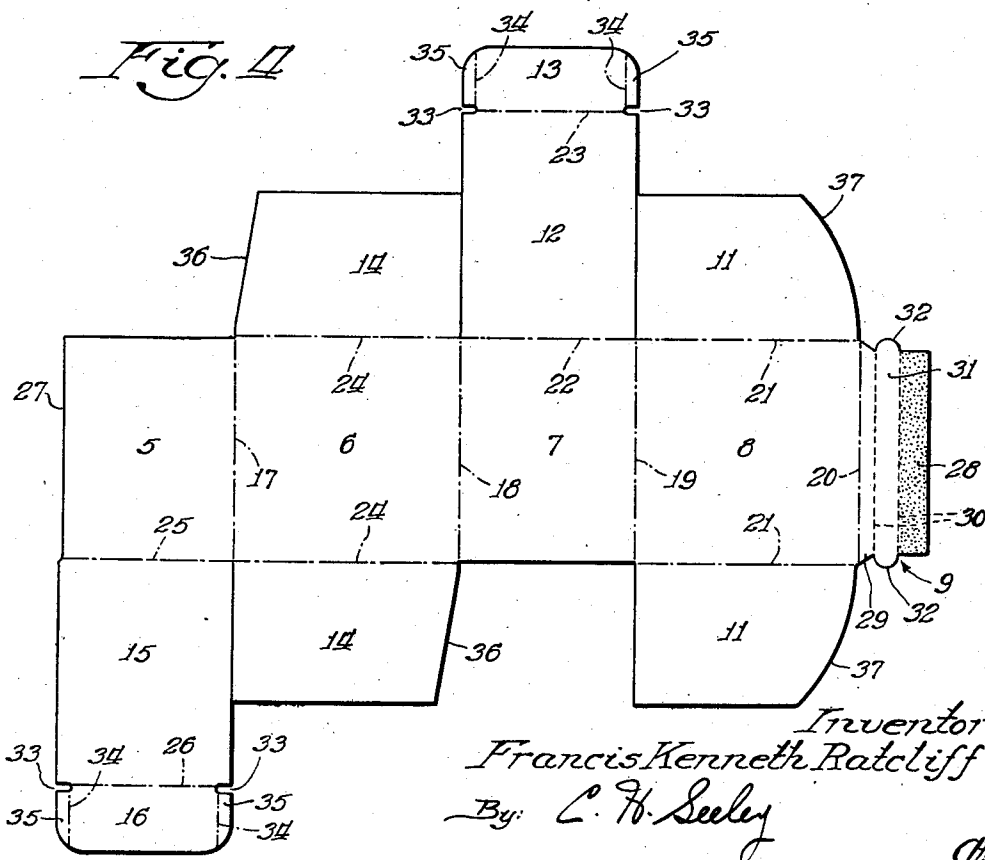
F. K. RATCLIFF

2,354,543

CARTON

Filed May 1, 1941

2 Sheets-Sheet 1



Inventor:
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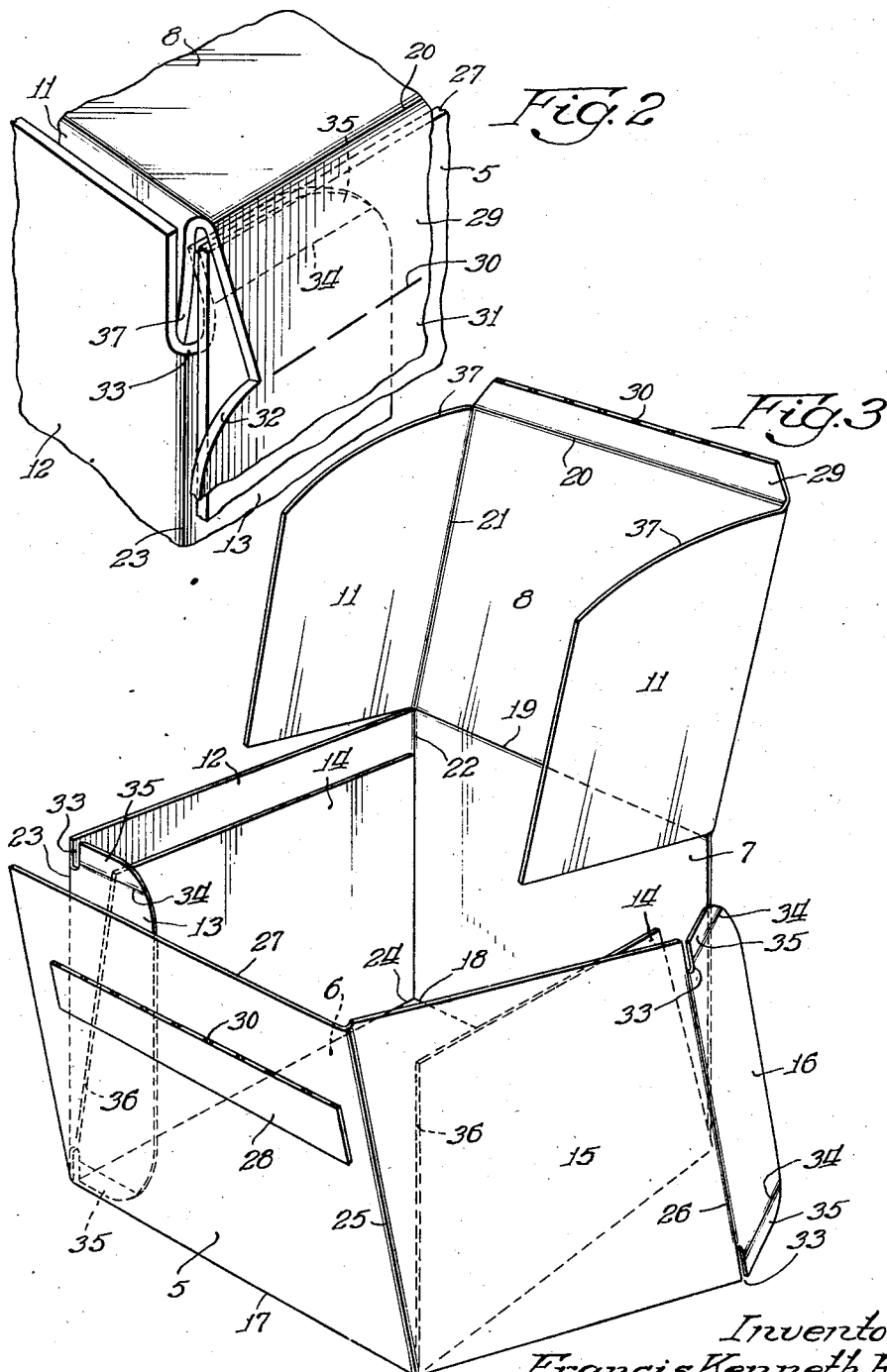
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UNITED STATES PATENT OFFICE

2,354,543

CARTON

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Application May 1, 1941, Serial No. 391,247

1 Claim. (Cl. 229—51)

This invention relates to paper or fiberboard cartons adapted to be readily and quickly opened to a flat or blank form to permit immediate and full access to the contents. Cartons of this type are especially useful for packaging commodities such as ice cream, lard, butter, and the like. Ice cream in particular is a commodity offering peculiar difficulties in packaging and dispensing from cartons made of fiberboard and the like, and the invention will, therefore, be described primarily with reference to such use.

One of the primary objects of the invention is to provide an inexpensive and easily constructed carton in which the desired commodity may be packed, sealed and stored ready for sale and from which the commodity may be quickly and readily removed for use. Another object is to provide a carton so constructed that effects of tampering therewith will be readily apparent, although it may be easily opened in the proper manner. Still another object is to provide a carton so constructed that by the simple removal of a tear or "zipper" strip and an equally simple and easy manipulation of the carton walls, the entire carton may be opened out flat, so as to expose the contents fully. The attainment of this objective makes the invention of especial value in the packaging of ice cream, which is often difficult to remove from conventional paper or fiberboard cartons.

Many other objects, advantages and uses of the invention will become apparent from the following detailed description read in connection with the accompanying drawings, in which:

Figure 1 is a perspective view of a carton adapted to contain ice cream or the like and embodying a preferred form of the invention.

Figure 2 is a large scale view of a corner fragment of the carton of Figure 1 showing the construction of a corner adjacent to a tuck flap.

Figure 3 is a perspective view of the carton of Figure 1 after it has been partially opened, and

Figure 4 is a developed view of the carton blank cut and scored for folding into box form.

The material of which the carton is to be made may be any that is satisfactory for the purposes to which the carton is to be put. Suitable cutting and scoring dies are used in the usual manner and arranged to form blanks each of which may be similar to the preferred form of blank illustrated in Figure 4. The cutting and scoring result in the provision of a front side wall panel 5, a bottom wall panel 6, a rear side wall panel 7, a top wall or cover panel 8, a sealing flap generally designated 9 and attached to the front

or forward edge of the top panel 8, a pair of similar end closure flaps 11 attached to the lateral edges of top panel 8, an end wall panel 12 carrying a tuck flap 13 at its outer or free end and attached to one lateral edge of the rear panel 7, correspondingly similar end flaps 14 attached to the lateral edges of bottom panel 6, and an end wall panel 15 carrying a tuck flap 16 at its outer or free end and attached to one lateral edge of the front panel 5. Lines 17, 18, 19, 20, 21, 22, 23, 24, 25 and 26 are crease or score lines segregating from one another the panels and parts so far mentioned and about or along which the said panels or parts are folded in setting up the carton from the blank.

The front side wall panel 5 is reduced in height, in the preferred form, by cutting off a strip in width approximately equal to the thickness of the material of the blank thereby to form the edge 27 to permit sealing flap 9 to be folded along score line 20 without danger of tearing along the latter. The sealing flap 9 is arranged to overlap the outer surface of the front side wall panel 5 and to be secured thereto, more or less permanently, by an adhesive-coated securing strip 28 which forms the outer portion of the flap 9. An inner strip or portion 29 connected directly to the top wall panel 8 along score line 20 is of such width as to overlap the front side wall 5 for a substantial distance below the top edge 27 and is segregated from the outer strip 28 by a pair of spaced and, preferably, parallel lines of weakness 30 between them providing a tear strip 31. Strips 29 and 31 are unsecured to the front side wall panel 5 so that the top panel may be freed from the front side wall panel when the tear strip 31 is torn off. Finger-grasping tabs 32 may be provided on the ends of tear strip 31 to permit easy gripping of the strip when it is to be torn off and, if desired, the perforations or cuts, forming the weakened lines 30, may be staggered with respect to one another, so as to increase the ease of tearing off strip 31.

It will be noted that the end wall panels 12 and 15 are attached to the rear and front side walls, respectively, at opposite ends of the carton; that each of tongues 13 and 16 is notched as shown at 33 at opposite ends of the score lines 23 and 26 and scored along lines 34 extending at right angles to score lines 23 and 26 from the bottoms of the notches 33 to provide marginal portions or lock tabs 35; that each of the end flaps 14 secured to the bottom panel 6 has one side edge bevelled off as shown at 36, these bevelled edges being opposite one another, that is,

along those edges remote from the respective adjacent panels 12 and 15; and that the end flaps 11 have their side edges 37 cut in convexly arcuate shape, the arcs being struck on substantially equally radii from centers preferably lying on and between the ends of score lines 21 and adjacent to the juncture of score lines 21 with score line 19. These features of construction are of considerable importance in the attainment of some of the objectives of the invention as will become apparent.

In some cases the blanks may be shipped in wholly flat or open form, while in other cases the blanks may be partially folded and flattened along alternate of the score lines 17, 18, 19 and 20 after the securing flap 9 is attached to the front side panel 5 and shipped in that form. Regardless of the manner in which the cartons are prepared for shipping it is usually preferable to fill the same with the commodity, such as ice cream, to be packaged from one or the other of its ends after sealing the sealing flap 9 in proper position and closing the other end. Ice cream is usually flowed into cartons of this character in a mushy or semi-solid state and, when the package is full, the end flaps at the filling end are folded in over the contents whereupon the end wall panel is folded over and its tongue inserted into place, the filled package then being stored at sub-freezing temperature until the ice cream becomes hard. In such condition it is very difficult for the consumer to remove the ice cream from the carton unless the package can be opened fully and easily or the block can be removed bodily from the package, the latter operation usually being difficult if not impossible without tearing the ordinary carton to pieces with undesirable results.

When the carton is being closed and sealed it is preferable to give each pair of locking tabs 35 a slight "set" toward the hinge connection between the end wall panel by which they are carried and the rear or front wall panel, as the case may be, so that those edges of these tabs which define the notches 33 may engage behind marginal portions of the bevelled or tapered edges 36 of end flaps 14 adjacent thereto. After the end wall panels 12 and 15 have been closed and the tongues 13 and 16 have been pushed into place, the tabs 35 will tend to "spring" into locking positions behind (inside the carton) the marginal edges 36 to prevent ready release and re-opening of the end walls without first releasing the top panel, all as illustrated in the large scale view of Figure 2. Of course, as will be observed, the lowermost or bottom tabs 35, when the carton stands in the position of Figures 1 and 3, will be engaged with the bottom portions of the inner faces of flaps 14 while the upper tabs 35 will be similarly engaged with upper portions of the inner faces of flaps 11. The arrangement is such that the carton is relatively securely closed against unapparent tampering.

The carton disclosed herein is designed to be

opened to its fullest extent, that is, to its flat or blank form so as to expose all but the bottom side of the packaged commodity, which may then readily be released from the bottom panel upon which it stands. This is done simply by removing (tearing off) the tear or "zipper" strip 31, raising the cover or top panel 8, and pressing outwardly and downwardly in a somewhat diagonal manner on those diagonally opposite corners at which the end wall panels 12 and 15 are connected to the back and front side wall panels 7 and 5, respectively. Manipulation in such manner tends to cause the end wall panels 12 and 15 to swing upwardly in their own planes to effect release of tongues 13 and 16, these tongues sliding (or being positively moved) upward along the inclined or tapered edges 36 to such points as will disengage or release the lower disposed locking tabs 35 from engagement behind (inward sides) the end flaps 14, the upward movement of the top or corner panel 8 having previously raised the end flaps 11 and removed them from interlocking engagement with the upper disposed locking tabs 35 and the tongues 13, 16. While the flaps 14 may fall away from the package contents during the manipulation, should they not do so it is a very simple matter to run a knife or other instrument between the flaps and contents so as to free the flaps.

The invention has been shown and described in what is at present considered to be the preferred form but, as will be appreciated, it is susceptible of other embodiments and of variation and modification without departure from its spirit and the scope of the appended claim.

I claim:

A carton formed from a foldable paperboard blank cut and scored to provide front, bottom, back and top wall panels, readily releasable means for securing said top wall panel to said front wall panel, an end flap on each of the lateral edges of said top and bottom wall panels, an end wall panel on one lateral edge of said front wall panel, a second end wall panel on the opposite lateral edge of said back wall panel, a tuck flap on each of said end wall panels, each of said tuck flaps being disposed against the inner surface of the wall panel opposite that to which its end wall panel is attached, and a notch at each end of the junction line between said tuck flaps and said end wall panels adapted to engage said end flaps and lockingly engage the same, the forward edges of those end flaps attached to said top wall panel being convexly arcuate to permit said top wall panel to be raised when said securing means has been released, and each of those end flaps attached to said bottom wall panel being tapered along that one of its edges which is adjacent to a tuck flap whereby slight outward bending of said front and back walls adjacent their junction with said end wall panels will allow said notches to be disengaged from said last-mentioned end flaps.

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