

Aug. 28, 1956

J. D. ANDREWS

2,760,713

CARTON

Filed May 6, 1952

2 Sheets-Sheet 1

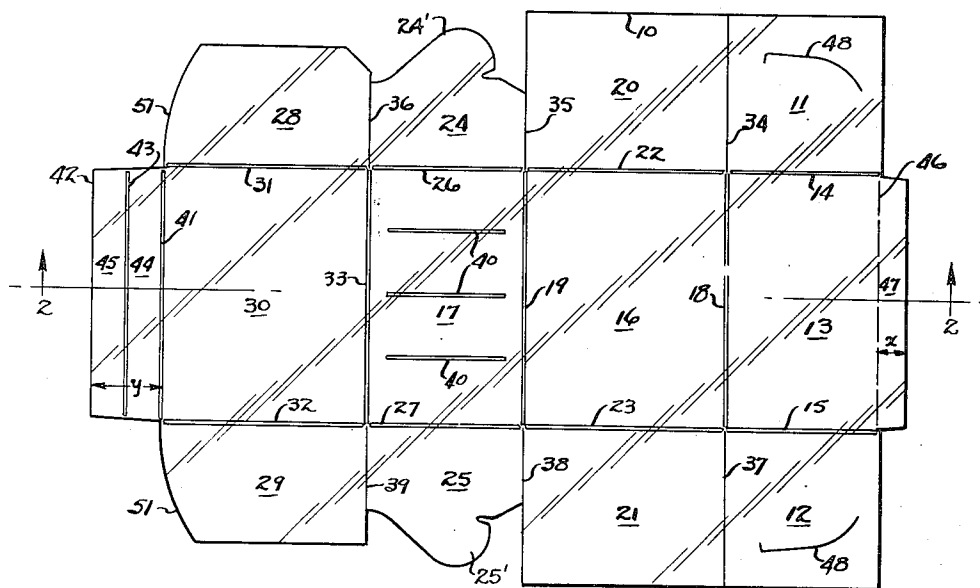


Fig. 1

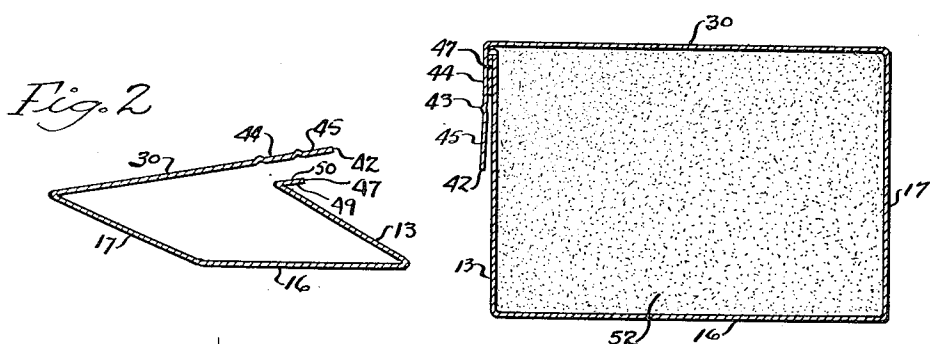


Fig. 2

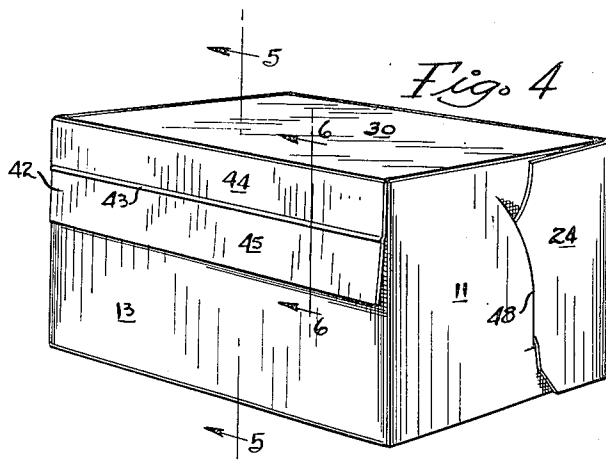


Fig. 4

Fig. 5

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2 Sheets-Sheet 2

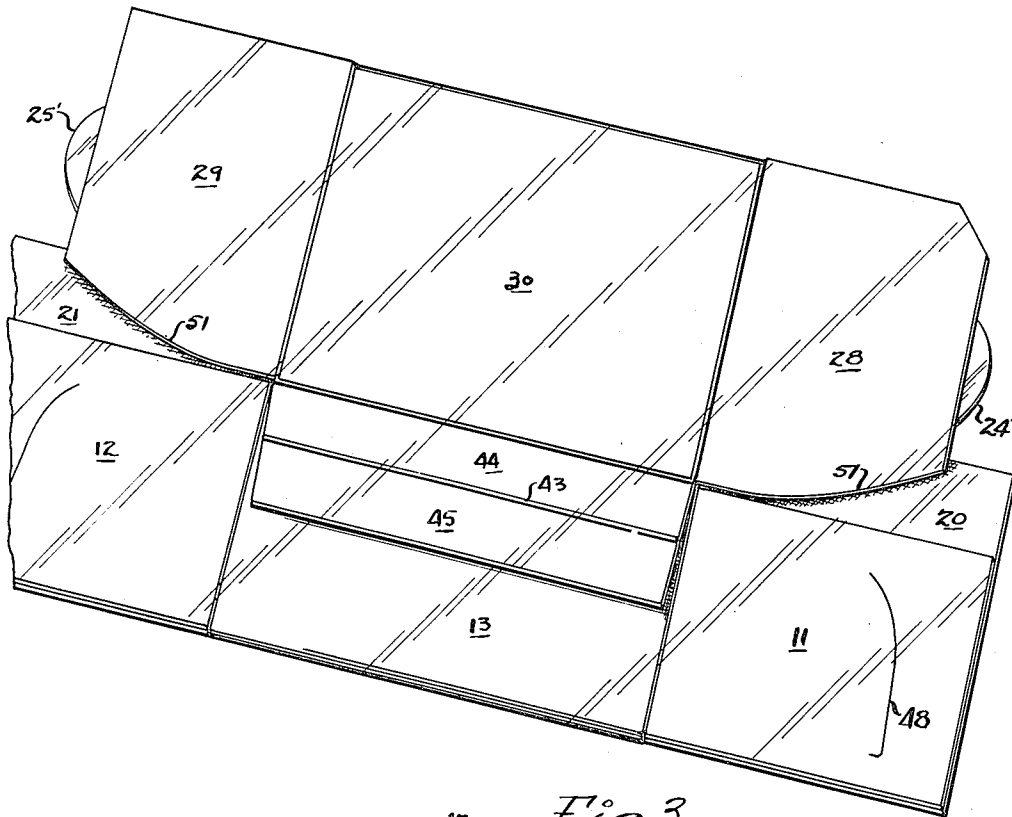


Fig. 3

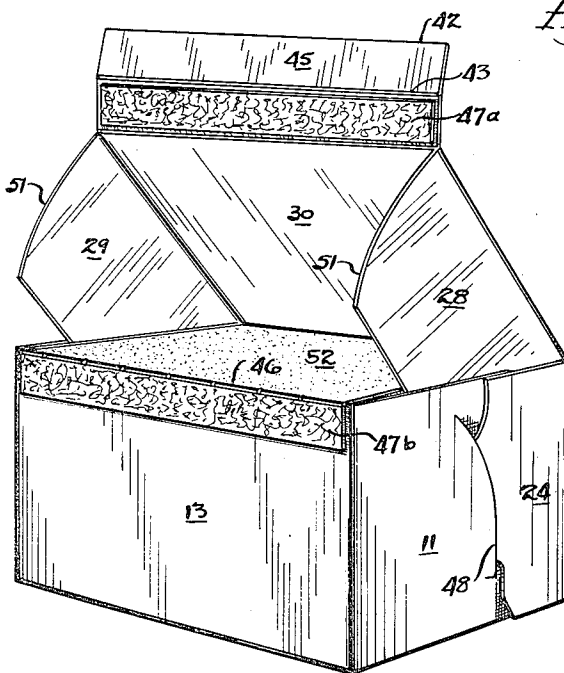


Fig. 6

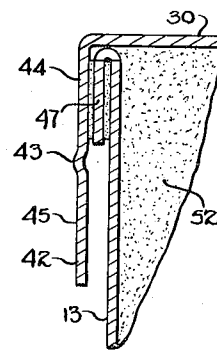


Fig. 7

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2,760,713

CARTON

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1 Claim. (Cl. 229—51)

This invention relates to cartons, and particularly to linerless cartons of the type used for packaging ice cream and other food commodities.

In cartons of this type, customarily formed from coated moisture-proof paperboard, it is highly desirable that the carton be so formed as to be substantially leak proof, and yet so that it may be readily opened either for dipping of the ice cream out of the carton or for exposing the entire contents of the carton for slicing or the like. As a practical and commercial matter, the opening of such cartons should be easy and rapid, requiring no great exercise of force. Since these cartons are used in immense quantities, as a matter of economics it is very essential that the carton require the very minimum of paperboard and other materials, and of labor, in its manufacture.

My invention provides a carton which presents these features to a high degree and in a very satisfactory manner. Other advantages and features of my invention will be readily apparent from the following description and the accompanying drawings, in which the same reference numeral is used to identify the same or similar parts.

Figure 1 is a plan view of the blank from which my carton is formed,

Figure 2 is a cross-section view taken along the line 2—2 of Figure 1 but showing the carton in partially assembled form,

Figure 3 is a perspective view showing the carton in an intermediate stage of assembly,

Figure 4 is a perspective view showing the finally assembled and filled carton,

Figure 5 is a cross-section view of the filled carton taken along the line 5—5 of Figure 4.

Figure 6 is a sectional view taken on line 6—6 of Figure 4, and

Figure 7 is a perspective view showing the carton partially open to present its contents.

Referring first to Figure 1, it is seen that my carton is formed from a blank generally represented by the numeral 10 which is divided by a plurality of cut and score lines into various panels or walls and flaps or tabs. End flaps 11 and 12 are hingedly connected to the side edges of front panel 13 along score lines 14 and 15, respectively. Bottom panel 16, which is hingedly connected to front panel 13 and rear panel 17 by score lines 18 and 19, has end flaps 20 and 21 hingedly connected to its side edges along score lines 22 and 23, all respectively. End flaps 24 and 25 are connected to the side edges of rear panel 17 along score lines 26 and 27, respectively. End flaps 24 and 25 are formed to provide tongue portions 24' and 25', respectively. End flaps 28 and 29 are hingedly connected to top panel 30 along score lines 31 and 32, respectively, the top panel 30 in turn being connected to rear panel 17 along score line 33. The various end flaps are separated from each other by cut lines 34, 35, 36, 37, 38 and 39. The panels may be scored to provide additional stiffness and to provide

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cutting markers for slicing the contained product, as illustrated by spaced score lines 40 in rear panel 17.

A closure flap or tab 42 is hingedly connected to the outer edge of top panel 30 along score line 41. Flap 42 is laterally divided by a score line 43 into inner and outer closure panels 44 and 45. A glue flap or tab 47 is hingedly connected to the outer edge of front panel 13 along perforation line 46. Although I prefer to use perforations 46 in which the dimensions of the perforations greatly exceed those of the continuous fiber, a continuous cut-score may be substituted without departing from the spirit of my invention. The width x of glue flap 47 is substantially less than the width y of closure flap 42, and as shown is substantially equal to the width of inner panel 44 of closure flap 42.

With additional reference to Figure 4, end flaps 11 and 12 have internal cut lines or slits 48 which cooperate with end flaps 24 and 25 respectively to provide carton end closing means, which means are well known in the art and need not be further explained.

Referring to Figure 2, my carton is assembled by first applying glue to the entirety of the surface 49 of glue flap 47 and then gluing flap 47 outwardly and downwardly to adhere it to the outer surface of front panel 13. Glue is also applied to the entirety of the opposite surface 50 of flap 47, to which the inner portion only of flap 42, such as panel 44, is adhered. When the carton is glued by automatic machine, glue is first applied to surface 49 of glue flap 47 of the flat carton blank (Figure 1), and flap 47 is folded under and adhered to front panel 13. Front panel 13 is then folded along score line 18 to overlie bottom panel 16, and glue is then applied to the inner surface of closure panel 44 or alternatively to surface 50 at flap 47, surface 50 at this time lying above front panel 13 by the thickness of flap 47, as will be evident from Figure 6. Top panel 30 is then folded along score line 33 to overlie rear panel 17, which brings inner panel 44 of closure flap 42 into contact with glue surface 50 of glue flap 47, to which panel 44 is then adhered. The cross-sectional periphery of my carton, illustrated in Figure 5 as filled with a contained product 52 such as ice cream, is thus completely sealed and leak proof.

My carton may then be shipped flat, as illustrated in Figure 3, to the food manufacturer for final setting up and filling. By thus shipping the carton in flat condition, a great saving in shipping expense is obtained. By machines of well known manufacture, my carton may be set up and filled by the food manufacturer, and presented to the purchaser and ultimate consumer in the attractive form illustrated in Figure 4.

Referring particularly to Figures 4 to 7, it is seen that flap 42 adjacent its free edge provides a ready pull flap for opening the carton. Although not essential, score line 43 provides a line of weakness in flap 42 to define the grasping outer panel 45 which more readily facilitates the opening of the carton.

Referring particularly to Figures 5, 6 and 7, it will be seen that, due to the wide perforations 46, glue flap 47 is essentially an independent piece of paperboard, only connected to the edge of front panel 13 sufficiently to maintain its connected relationship until it is glued to the face of panel 13. Thus closure flap 42 is connected to front panel 13 only through being glued to glue flap 47 which in turn is glued to panel 13, and the connection between flap 47 and panel 13 along perforation line 46 may be neglected for purposes of opening the carton as will be described below. A deep cut score line originating in the inner surface of blank 10, that is, the surface in which the surface 50 of glue flap 47 lies, might be substituted for perforation line 46.

When the outer portion of flap 42, such as panel 45, is pulled to open the filled carton, glue flap 47 will split or separate internally in a plane parallel to its glued surfaces, since the glue connections between flap 47 and panel 13 and flap 42 are of greater strength than the internal fiber strength of the paperboard. This strength differential is not necessarily a function of a particular glue, but is a factor well known to those skilled in the art. This splitting of flap 47 in its planar dimension leaves a portion 47a of flap 47 glued to panel 44 of flap 42 and a portion 47b of flap 47 glued to front panel 13. Since perforation line 46 provides an essentially complete separation between flap 47 and panel 13, there is no tendency of the separation of the fibers of the paperboard to continue into the inner face of panel 13. Thus a relatively small separating force of short duration need be applied, and a clean line of separation free from fibrous "tails," after-connections and stripping of the surfaces of the carton is obtained.

In order to assure that this splitting or separation of glue flap 47 will occur, it is essential that the surfaces of the flap adjacent its free outer edge be positively adhered to front panel 13 and closure flap 42 respectively. Preferably the entire surfaces of flap 47 should be so adhered. If this adherence adjacent the free edge of flap 47 is not obtained, the separation upon opening will tend to occur at the juncture of the adhesive means with a surface of flap 47 and one of flap 42 or panel 13. This will necessitate a substantially greater opening force, and the opening will result in stripping of the surface of the carton and a generally unsatisfactory carton opening.

It will be noted that the cut edges 51 of end panels 28 and 29 are curved to eliminate any binding when the carton is open as illustrated in Figure 7. When opened as described, the contained product may be dipped or scooped from the carton, or in addition the ends of the carton may be opened in the conventional manner and the carton layed flat substantially as shown in Figure 1 whereupon the product may be sliced or otherwise handled. Also, closure flap 42 may be completely neglected, and the carton only opened at one end in the conventional manner.

While my carton is particularly useful in the packaging

of articles such as ice cream, it is obvious that it also has great utility in the packaging of many other items. It is equally obvious that instead of gluing flap 47 to front panel 13 and flap 42, other means of adhesion such as heat- or pressure-sensitive adhesive strips might well be utilized.

While I have illustrated and described a preferred embodiment of the invention, various changes may be made in detail therein without departing from the scope of my invention.

I claim:

A carton formed from a single paperboard blank having an upper surface and a lower surface and being cut and scored and foldable into a carton wherein the upper surface of the blank is the inner portion of the carton, the carton having front, rear, bottom and side walls, a cover hingedly connected to said rear wall and having an integrally extending closure flap, and a glue flap hingedly connected to the upper edge of said front wall, the width of the closure flap being substantially greater than the width of the glue flap, said glue flap hinged connection being cut through at least the upper surface of said blank to substantially separate the glue flap from the front wall, said glue flap being folded over and adhered throughout its entire one face to the outer face of said front wall, and an inner portion of said closure flap being adhered to the entire other face of said glue flap, to leave a freely extending portion of said closure flap adjacent the free edge thereof, the carton being opened by grasping the freely extending portion of said closure flap to separate said glue flap planarly intermediate its faces.

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