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3,379,361

CARTON

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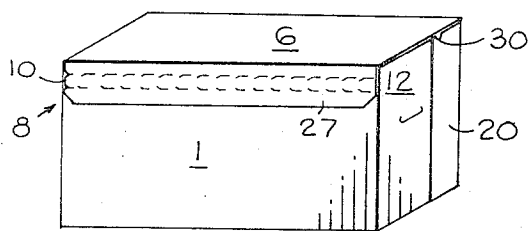


FIG. 1

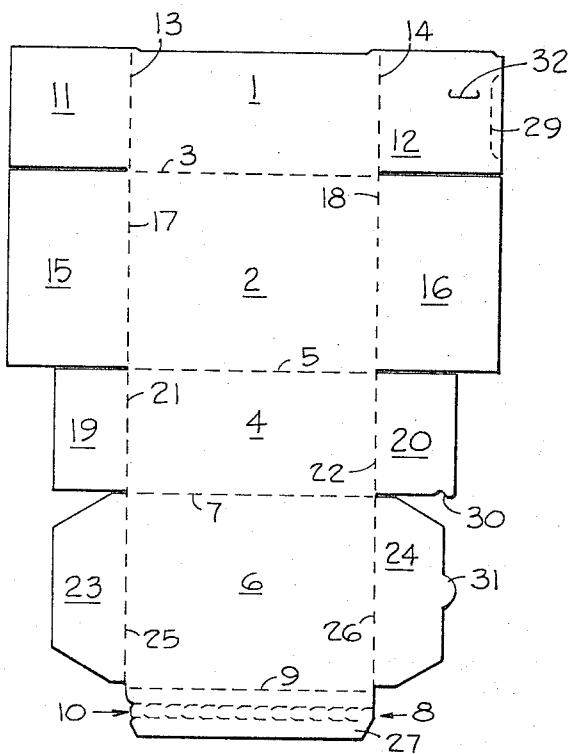


FIG. 2

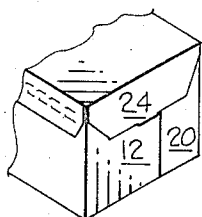


FIG. 7

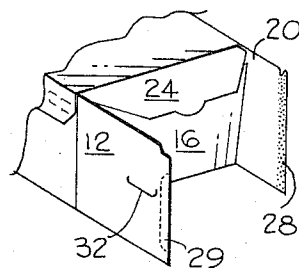


FIG. 3

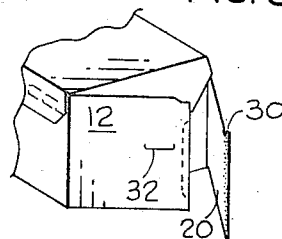


FIG. 4

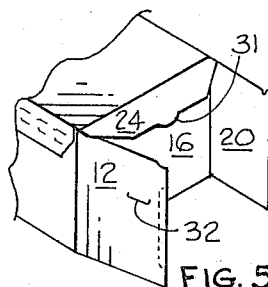


FIG. 5

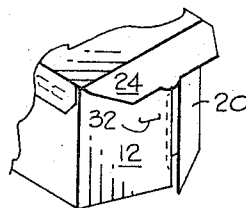


FIG. 6

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1

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CARTON

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ABSTRACT OF THE DISCLOSURE

The invention in one form as applied to a folding box of the so-called trunk style and having bottom, front, rear and lid panels comprises a bottom end panel foldably joined to each end of said bottom panel, a lid end panel foldably joined to each end of said lid panel and normally disposed in overlapping face contacting relation to the adjacent bottom end panel, a front end panel foldably joined to each end of said front panel, a rear end panel foldably joined to each end of said rear end panel and normally disposed in overlapped face contacting relation with the adjacent one of said front end panels and secured thereto by a disjointable connection, a closing tab formed on at least one of said lid end panels and a closing slot formed in at least one of said overlapped panels and disposed to receive said closing tab, said one of said lid end panels being arranged to occupy alternate positions inside and outside said overlapped panels and said closing tab being disposed for insertion into said holding slot when said lid end panel is disposed outside said overlapped panels and when said overlapped panels are detached from each other whereby said overlapped panels are held closed by said lid end panel. According to a feature of the invention, one of said overlapped panels is wider than the other and the holding slot is disposed in the wider one of said overlapped panels and the cooperating locking tab is disposed medially of said lid end panel. According to another feature of the invention a pull tab is formed along an edge of one of the overlapped panels and a weakened severance line is formed in the other overlapped panel in the overlapped area thereof whereby said overlapped panels are rendered readily separable. Of course it is within the contemplation of the invention that the conventional severable fastening means may also be utilized to hold the lid panel in a closed condition.

This invention relates to cartons and more particularly to folding cartons of the trunk type which preferably are constructed from paperboard and which are used for certain packaging operations, the carton being particularly well adapted for packaging ice cream.

Folding cartons for packaging ice cream ordinarily are of the trunk type wherein a body portion is provided with a hinged lid portion which is telescopically related therewith, the lid being held in its closed or unopened condition by a lid panel secured to a panel of the body portion of the carrier and which incorporates a weakened severance line whereby the lid panel is severed in order to open the lid. Such trunk style cartons ordinarily are filled from one end, the other end having been closed previously. The end panels of currently used cartons may either be held in their closed condition by suitable locking tabs and cooperating locking slots or such panels may be held closed by heat sealable material applied to the end panels in a predetermined pattern. Where heat sealable material is used it is necessary to apply sealing heat through the panel or panels to which the heat sealable material is applied and such application of heat results in "heat shock" and the accompanying deleterious effects on the product. Furthermore additional time is required to remove the heat from the board, eating through the end

2

panels precludes the use of high gloss coatings thereon. Since heating through the end panels is eliminated by the invention, high gloss coatings are feasible as a result of the invention.

If the contents of the carton are but partially used, it is desirable to reclose the carton so as to afford protection for the unused contents. Should the carton be opened from one of its ends, a reliable reclosing operation is virtually impossible in the case of a carton whose ends are closed initially by heat sealable material applied in a predetermined pattern on the end panels because there simply is no means by which the panels may be bonded to each other again in the reclosed condition.

A principal object of this invention is to provide a folding carton of the sealed trunk style which is adapted for end opening or for opening from the top and which also is adapted for reclosing.

Another object of this invention is the provision of an improved folding box of the trunk style which eliminates the requirement for a pattern application of sealable coating and the attendant close control necessitated thereby insofar as the initial sealing of the carton is concerned.

Still another object of the invention is to provide a sealable carton which is virtually free of "heat shock" or product deterioration.

For a better understanding of the invention reference may be had to the following detailed description taken in conjunction with the accompanying drawing in which FIG. 1 is a perspective view of a folding box constructed according to the invention and wherein the condition of the box is depicted after the carton is filled and closed initially; FIG. 2 is a plan view of a unitary blank from which the carton of FIG. 1 is formed; FIGS. 3 and 4 depict the sequential steps in the folding of the end panels of the carton depicted in FIG. 1 whereby the end panels of the blank of FIG. 2 are manipulated in a manner to form the carton depicted in FIG. 1; FIGS. 5 and 6 depict the folding operations respecting the end panels which are performed in reclosing the carton after it is opened initially; and in which FIG. 7 depicts the reclosed carton formed by the steps depicted in FIGS. 5 and 6.

In the drawings the numeral 1 depicts the front panel of the carton to which the bottom panel 2 is foldably joined along folding line 3. Rear panel 4 is foldably joined to an edge of bottom panel 2 along fold line 5 while lid panel 6 is foldably joined to the rear panel 4 along fold line 7. A lid front panel generally designated by the numeral 8 is foldably joined to the lid panel 6 along fold line 9 and conventional weakened severance lines are formed in lid front panel 8 as designated generally at 10. As is well understood in the art structure 10 may constitute a tear strip or other known means by which the lid front panel 8 is severed so as to render the lid panel 6 readily openable.

Front end panels 11 and 12 are foldably joined to front panel 1 along fold lines 13 and 14 respectively while bottom end panels 15 and 16 are foldably joined to bottom panel 2 along fold lines 17 and 18. Similarly, rear end panels 19 and 20 are foldably joined to rear panel 4 along fold lines 21 and 22 while lid end panels 23 and 24 are foldably joined to the ends of lid panel 6 along fold lines 25 and 26. End panels 12 and 20 and end panels 11 and 19 are normally outside the inner end panels 16 and 24 and 15 and 23 and hence constitute outer end panels.

In order to assemble the carton, an application of heat sealable material of glue or of any suitable fastening means is made along the portion 27 of front lid panel 8 and part 27 of lid front panel 8 is then affixed to the front surface of front panel 1 as shown best in FIG. 1.

In order to condition the carton for filling, one end is

3

first closed and the carton is set upright with the closed end down. Thereafter the contents are inserted through the open end of the carton and that end subsequently is closed. In order to close the carton at one end before filling and at the other end after filling, the bottom end panel such as 16 is folded along fold line 18 and the lid end panel such as 24 is folded into overlapping relationship with the bottom end panel such as 16 as is best shown in FIG. 3. Following this operation, the front end panel such as 12 is folded about its fold line 14 into flat face contacting relation with the panels 16 and 24 and an application of glue is made to the inner surface of rear end panel 20 or to the outer surface of panel 12 as indicated by stippling at 28 or 29 in FIG. 3. By this means rear end panel 20 is secured in overlapped relationship to front end panel 12 and the end of the carton then appears as is depicted in FIG. 1.

In order to condition the end structure of the carton as just described for opening, a severance line as indicated by the dotted line 29 is formed along an edge of front end panel 12. Preferably the severance line is formed so that it extends but partially through the panel 12. In addition, a finger gripping pull tab or projection 30 may be formed at one corner of rear end panel 20. Thus when it is desired to open the carton from its closed condition depicted in FIG. 1, it is simply necessary to engage the pull tab or projection 30 and to force it outwardly away from the associated front end panel 12. This operation tends to break the glue bond between rear panel 20 and the front end panel 12 or to separate the board liner and the breaking of the seal is facilitated by the weakened severance line 29.

After the carton as depicted in FIG. 1 is opened from one of its ends initially, the carton may be reclosed and held in the reclosed condition according to this invention by simply folding the end panels in the sequence depicted in the FIGS. 5 and 6. Of course either panel 12 or 20 could be outside the other panel. Thus to reclose the carton the bottom end panel such as 16 is first folded upwardly along its fold line 18 into the position depicted in FIG. 5. Thereafter the front end panel 12 is folded into its closed condition following which rear end panel 20 is folded into overlapping relationship with front end panel 12 as is depicted in FIGS. 6 and 7. Following the folding of the overlapped panels 12 and 20 into their reclosed positions, the lid end panel such as 24 is folded downwardly and over the overlapped front end panel 12 and rear end panel 20 to occupy the position depicted in FIG. 7. The lid end panel 24 is held in its closed condition in accordance with this invention by means of a closing tab 31 formed along the lower edge of lid end panel 24 and a cooperating closing slot 32 formed in front end panel 12. Preferably closing tab 31 is disposed midway between the ends of lid end panel 24 and closing slot 32 is formed in the wider one of the overlapped panels 12 and 20 which as depicted in the drawing is the front end panel 12. It will be understood of course that rear end panel 20 could be the wider of the two panels. Furthermore, it will be understood that, ordinarily, the narrower of the end panels such as 20 is folded into its reclosed position before the wider end panel such as 12 is folded so as to cause the wider panel to occupy a position outside the narrower panel. Thus when the locking tab 31 is inserted into the locking slot 32 a secure end closure structure is provided.

While the carton shown in the drawings is disclosed as being reclosable from one end only according to the invention, it will be understood that a closing slot such as 32 could be formed in the front end panel 11 and a closing tab such as 31 could be formed along an edge of the end panel 23 if desired. Furthermore a projection such as 30 could be formed on rear end panel 19 and if desired a weakened severance line such as 29 could be formed in front end panel 11. By this means the carton

4

could be opened from either end or by simply severing the tear strip 10 and subsequently opening the lid 6.

From the description above, it is apparent that added versatility for the user is afforded by the invention due to the fact that the sealed carton may be opened from the top or from one or both ends. Furthermore it is apparent that reclosing of the carton at its ends is greatly facilitated by the invention and the reclosed carton according to a feature of the invention is specially adapted to afford a secure closure structure for the end of the carton which is neat in appearance and which may readily be opened subsequently. In addition the costly and difficult patterned application of heat sealable material and accompanying "heat shock" is eliminated according to a feature of this invention, it being necessary to apply heat sealable material or glue to area 28 of panel 20 or to area 29 of panel 12 and to the area 27 of the lid front panel 8 which applications are along straight lines and hence susceptible of easy application.

While a particular embodiment of the invention has been shown and described, the invention is not limited thereto and it is not limited thereto and it is intended in the appended claims to cover all such changes and modifications as fall within the true spirit and scope of the invention.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A carton comprising a bottom panel, front and rear panels foldably joined to the front and rear edges respectively of said bottom panel, a lid panel foldably joined to the edge of said rear panel remote from said bottom panel, a lid front panel foldably joined to the edge of said lid panel remote from said rear panel and secured to said front panel along an edge of said lid front panel remote from said lid panel, a bottom end panel foldably joined to each end of said bottom panel, a lid end panel foldably joined to each end of said lid panel and normally disposed in overlapping face contacting relation to the adjacent bottom end panel, a front end panel foldably joined to each end of said front panel, a rear end panel foldably joined to each end of said rear panel and normally disposed in overlapped face contacting relation with the adjacent one of said front end panels and secured thereto by a disjointable connection, a closing tab formed on at least one of said lid end panels, and a closing slot formed in at least one of said overlapped panels and disposed to receive said closing tab, said one of said lid end panels being arranged to occupy alternate positions inside and outside said overlapped panels and said closing tab being disposed for insertion into said holding slot when said lid end panel is disposed outside said overlapped panels and when said overlapped panels are detached from each other whereby said overlapped panels are held closed by said lid end panel.

2. A carton according to claim 1 wherein one of said overlapped panels is wider than the other and wherein said holding slot is disposed in the wider one of said overlapped panels.

3. A carton according to claim 1 wherein a pull tab is formed along an edge of one of said overlapped panels and adjacent the overlapped areas thereof and wherein a weakened severance line is formed in the other of said overlapped panels and in the overlapped area thereof whereby said overlapped panels are rendered readily separable.

4. A carton comprising bottom, lid, front and rear panels interconnected to form a tubular structure, end panels foldably joined to each end of said bottom, lid, front and rear panels, opposite end panels at one end of the carton being folded inwardly toward each other and into overlapping relation and constituting inner end panels, the remaining end panels at said one end of the carton being folded inwardly toward each other and into overlapping relation and constituting outer end panels normally

5

disposed outside said inner end panels, means for disjointably connecting said outer panels to each other, a closing tab formed on one of said inner end panels, and a closing slot formed in one of said outer end panels and disposed to receive said closing tab, said one inner end panel being arranged to occupy alternate positions inside and outside said outer end panels and said closing tab being disposed for insertion into said holding slot when said one inner end panel is disposed outside said outer end panels and when said outer end panels are detached from each other whereby said outer end panels are held closed by said one inner end panel.

6

References Cited

UNITED STATES PATENTS

1,908,251	5/1933	Inman et al. -----	229—51 XR
1,992,222	2/1935	Grua -----	229—51
2,923,454	2/1960	Pupke -----	229—51
3,040,957	6/1962	Meyers -----	229—33 XR
3,071,304	1/1963	Brastad -----	229—51 XR
3,201,026	8/1965	Travis et al. -----	229—39
3,235,167	2/1966	Svensson -----	229—51

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