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LID FOR EGG CARTON

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Fig.1.

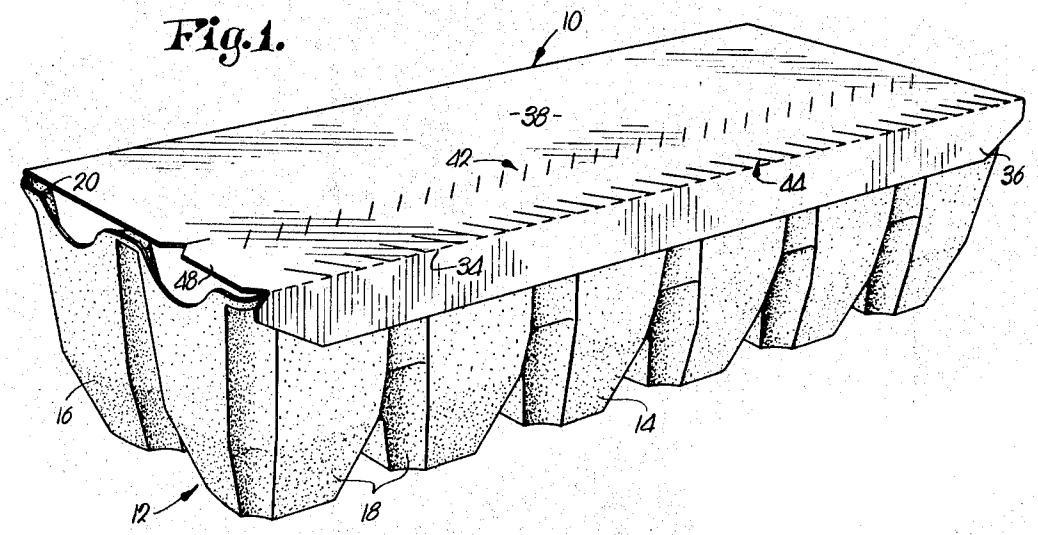


Fig.2.

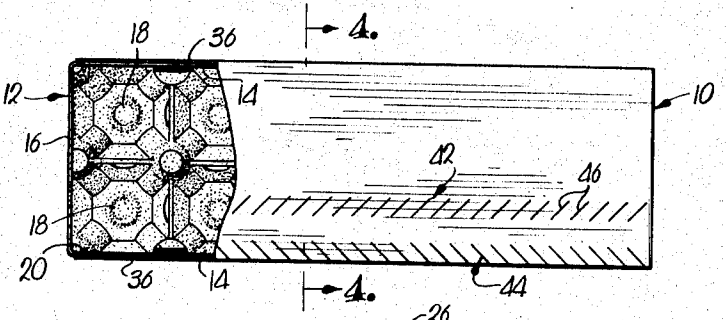
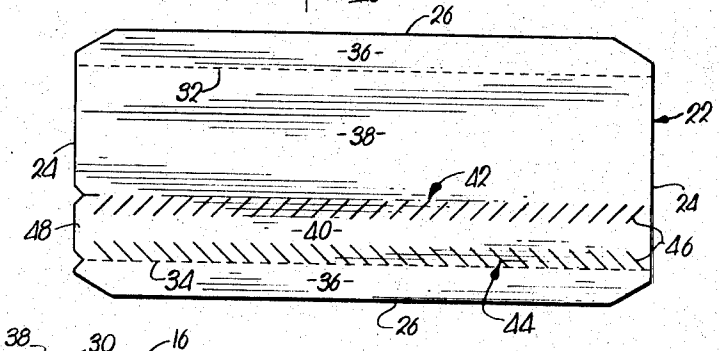


Fig.3.



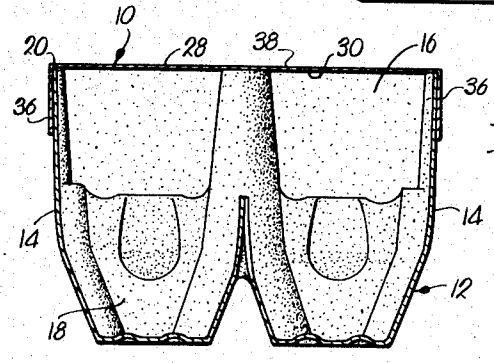


Fig.4.

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LID FOR EGG CARTON

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Continuation-in-part of application Ser. No. 492,442, Oct. 4, 1965. This application May 23, 1967, Ser. No. 649,774

4 Claims. (Cl. 229—51)

ABSTRACT OF THE DISCLOSURE

The rim of a generally rectangular carton bottom provides a seat for a sheet of cardboard material having spaced, parallel fold lines therein overlying the rim and defining a marginal flap between each fold line and the adjacent edge of the sheet. The grain of the cardboard material extends at a right angle to the fold lines. Upon application of the sheet to the carton bottom to form a lid therefor, the flaps are folded downwardly into engagement with the sidewalls of the carton bottom and are attached thereto. A tear strip in the central stretch of the sheet between the flaps is defined by a pair of spaced series of cuts, each of the cuts being angularly disposed with respect to the grain and the fold lines.

This application is a continuation-in-part of application Ser. No. 492,442, filed Oct. 4, 1965, now abandoned.

This invention relates to a lid for egg cartons and, more particularly, to a lid which is initially separate from the carton bottom and which constitutes a single sheet of material which is placed in overlying relationship to the carton bottom whereby to close the same, the lid being provided with a tear strip which may be utilized to gain access to the interior of the egg carton or the like.

The most important object of this invention is to provide a lid for egg cartons or the like which is fabricated from a single sheet of material, the sheet of material being provided with a pair of spaced-apart, substantially parallel lines of weakness whereby to define a pair of opposed, marginal flaps, there being a central stretch of material between said lines of weakness, a pair of spaced-apart series of cuts defining a tear strip throughout the length of said central stretch, the various lines of weakness, series of cuts and cut lines defining said series being arranged in such a manner with respect to the sheet of material and the grain thereof, whereby maximum strength is retained by the lid so that the lid, in both its blank and finished form, may be handled without buckling or giving as the blank is handled and placed upon the carton bottom.

Yet another important object of this invention is to provide a lid for egg cartons or the like which is formed from a substantially rectangular sheet of material, the sheet having spaced-apart lines of weakness formed therein, there being a central stretch of material between said lines of weakness, the central stretch of material having a series of cuts disposed therein, the series of cuts being spaced apart a sufficient distance to define a tear strip of the desired width therebetween, the cuts constituting each series being angularly disposed with respect to the grain of the cardboard forming the lid and the lines of weakness, the angular disposition of the tear strip defining cuts insuring that the said central stretch will not bend or otherwise give when the lid is bent along the above-mentioned lines of weakness as it is being placed upon the carton.

Yet another important object of this invention is to provide a lid for cartons wherein the grain of the cardboard forming the lid is transverse to the longitudinal axis of the lid, all to the end that the lid, and most particularly the central section thereof, will not bow outwardly as the marginal edges of the lid are folded downwardly into engagement with the sidewalls of the carton.

Other objects of the invention will become apparent from the following specification and accompanying drawing, wherein:

FIGURE 1 is a perspective view of an egg carton with the lid in place thereupon;

FIG. 2 is a top plan view on a reduced scale, a portion of the lid being broken away;

FIG. 3 is a top plan view of the blank which forms the lid; and

FIG. 4 is a sectional view taken along line 4—4 of FIG. 2.

The lid **10**, while it may be used in connection with various types of carton bottoms, is illustrated in the accompanying drawing as constituting a cover, lid, closure or the like for a molded pulp egg carton **12**, said carton having a pair of opposed sidewalls **14**, a pair of opposed end walls **16**, said walls and intermediate portions thereof cooperating to define a plurality of pockets or cells **18** for receiving the desired number of eggs in the carton bottom. A rim **20** is defined by the normally uppermost edges of sidewalls **14** and end walls **16**, said rim serving as a seat for the lid **10** when said lid **10** is disposed in overlying relationship to the carton bottom **12**, the lid **10** serving to close the upper end of each of said cells or pockets **18** when positioned thereupon.

Lid **10** is formed from a substantially rectangular sheet of cardboard **22**, shown in its blank form in FIG. 3 of the drawing, which sheet of material **22** is substantially rectangular in plan configuration whereby to present a pair of end edges **24** and a pair of side edges **26**, the blank **22** having a normally uppermost surface **28** and a lower surface **30**.

Blank **22**, as indicated, is fabricated from cardboard or the like and inasmuch as said board has a graining characteristic therein, it is desirable to have the grain of the board from which blank **22** is formed, extending transversely of the blank, that is in perpendicular relationship to the opposed side edges **26**. By forming blank **22** in such a manner, additional strength is imparted thereto, which strength is useful in handling the blank prior to its installation in overlying relationship to the carton bottom **12** and is also useful in adding strength to the lid **10** when it is positioned upon bottom **12**.

Blank **22** has a pair of lines of weakness **32** and **34** formed therein, said lines **32** and **34** each being spaced inwardly from a corresponding side edge **26** whereby to present between each of said lines **32** and **34** and its corresponding side edge **26**, a marginal flap **36**. Said lines of weakness are in the nature of spaced-apart, longitudinally extending, aligned score lines, the score lines being formed by cutting into the cardboard forming the blank at closely spaced intervals whereby the marginal flaps **36** may be bent with respect to the remainder of blank **22** when lid **10** is positioned upon carton bottom

12. It will be noted that the lines of weakness 32 and 34 extend longitudinally of blank 22 and inasmuch as the graining of the cardboard which forms blank 22 is positioned transversely thereof, the graining and the lines of weakness are in perpendicular relationship.

Defined between the lines of weakness 32 and 34 is a central stretch of material 38, said central stretch of material constituting the remaining portion of normally uppermost surface 28 of blank 22, it being contemplated that stretch 38 will be in overlying relationship to the pockets of the carton bottom 12.

A tear strip 40 is defined throughout the length of central stretch 38 by a pair of spaced-apart series of cuts 42 and 44, said series of cuts each consisting of a plurality of individual cut lines such as 46, said cut lines being angularly disposed with respect to the lines of weakness 32 and 34 and also the side edges 26 of blank 22.

It will be appreciated that the tear strip 40 may be of any desired width, depending upon the distance by which the series of cuts 42 and 44 are spaced apart within the transverse limits of the central stretch 38 it being noted that in the embodiment chosen for illustration, the tear strip 40 is relatively narrow and the series of cuts 44 is directly adjacent one of the lines of weakness 34, the other series of cuts 42 being positioned only slightly inwardly from line of weakness 34 whereby to define said narrow tear strip.

It will be appreciated however, that the tear strip could constitute the entire central stretch 38 and that if this were desired, the normally innermost series of cuts such as 42 in the embodiment chosen for purposes of illustration, would be moved into adjacent relationship with line of weakness 32 at the opposite longitudinal edge of the central stretch 38. Thus. by properly arranging the spacing between the series of cuts 42 and 44, a tear strip of any desired width may be obtained.

Positioned at the end of tear strip 40 is a tab 48 which is utilized to remove the tear strip by pulling upwardly, thereby causing said series of cuts to cooperate and tear along the outer edges thereof, thus eliminating a portion of the central stretch 38 after the tear strip has been utilized. It will be noted that in the embodiment chosen for purposes of illustration, the tear strip 40 may be removed and when this has been accomplished, the remaining portion of the central stretch 38 of lid 10 may be hinged about line of weakness 32 to provide a swinging cover for the carton bottom 12.

In use, carton bottom 12 is formed independently and blank 22 is likewise formed independently, bottom 12 being made of a pulp material and blank 22 being of a cardboard material. Lid 10 is then placed in overlying relationship to carton bottom 12, the lower face 30 of the lid resting upon rim 20 of carton bottom 12. The marginal flaps 36 are then folded downwardly into engagement with the corresponding sidewalls 14 of the carton bottom, it being contemplated that the lower surface 30 of the marginal flaps 36 will be provided with an adhesive whereby to secure said flaps, and thereby said lid 10, to the carton bottom 12. The package is then complete and ready for shipment and storage.

When it is desired to utilize the carton, the tear strip is merely removed and access is gained to the interior of the egg carton or similar container which is provided with a lid such as hereinabove described. The specific graining of the cardboard and the relative position of the lines of weakness and series of cuts as hereinabove pointed out, and to be discussed further hereinbelow, are important so that maximum strength may be obtained in the lid while yet providing the same with a tear strip for easy access to the interior of the carton. Furthermore, a carton made as described herein is cheaper than a carton which is made completely of pulp and is also cheaper than a carton which is fabricated entirely from cardboard.

It has been found that the most effective combination of lid rigidity and tearability of the tear strip 40 is provided by disposing each cut of the series of cuts 42 and 44 at an angle of approximately 45° with respect to the direction of tear of strip 40. This also positions the cuts at an angle of approximately 45° with respect to the grain of the cardboard material of blank 22. In general, satisfactory results are obtained as long as the cuts are disposed at an angle from 30° to 60° with respect to the direction of tear. For adequate tearability utilizing cuts disposed at the 45° angular relationship, the spacing between adjacent pairs of cuts 32 or 34 should be approximately ¼ to 5/16 inch, a spacing of 9/32 inch being preferred.

It is also important that the solid or uncut portion of tear strip 40 between the two series of cuts 42 and 44 be at least ½ inch in width to impart sufficient rigidity to blank 22 as the same is applied and secured to carton bottom 12. The preferred material for blank 22 is 0.022 patent coated newsback boxboard, although cardboard stock having a thickness of approximately 0.020 to 0.025 inch is satisfactory from the standpoints of both the necessary rigidity of the material and the required tearability thereof along the series of cuts 42 and 44.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. Carton structure comprising:
a generally rectangular carton bottom having upstanding walls provided with normally uppermost edges defining a rim,
a substantially rectangular sheet of cardboard material having a pair of side edges, a pair of end edges, and a pair of spaced, substantially parallel lines of weakness therein extending from one end edge to the other end edge and disposed adjacent respective side edges in inwardly spaced relationship thereto, to define a marginal flap between each of said lines and its adjacent side edge and a central stretch of said material between said flaps,
the grain of said material extending substantially perpendicularly to said lines,
the spacing between said lines being substantially equal to the distance across said rim transversely of said carton bottom,
said rim presenting a seat for said sheet upon application of the sheet to the carton bottom and when said flaps are folded downwardly along said lines into engagement with corresponding walls of said carton bottom,
said flaps being attached to respective walls, so the sheet forms a lid with said central stretch overlying said carton bottom,
said central stretch including a tear strip extending the length of the stretch and defined by a pair of spaced series of cuts therein, each series being disposed in substantial parallelism to and adjacent one of said weakened lines,
the cuts constituting each series being entirely angularly disposed with respect to said grain and said lines.

2. The invention of claim 1,
said cuts extending at an angle of from 30° to 60° with respect to the direction of tear of said strip,
the width of the strip between the inner terminations of the cuts of one series and the inner terminations of the cuts of the other series being at least ½ inch.

3. The invention of claim 1,
said cuts extending at an angle of approximately 45° with respect to the direction of tear of said strip,
adjacent pairs of cuts of each series being space apart approximately ¼ inch to 5/16 inch.

4. The invention of claim 3,
the width of the strip between the inner terminations of the cuts of one series and the inner terminations

of the cuts of the other series being at least ½ inch, said sheet having a thickness of approximately 0.020 inch to 0.025 inch.

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