Aug. 13, 1963 W. R. SAIDEL ETAL 3,100,597

BACON CARTON

Filed June 25, 1958 2 Sheets-Sheet 1

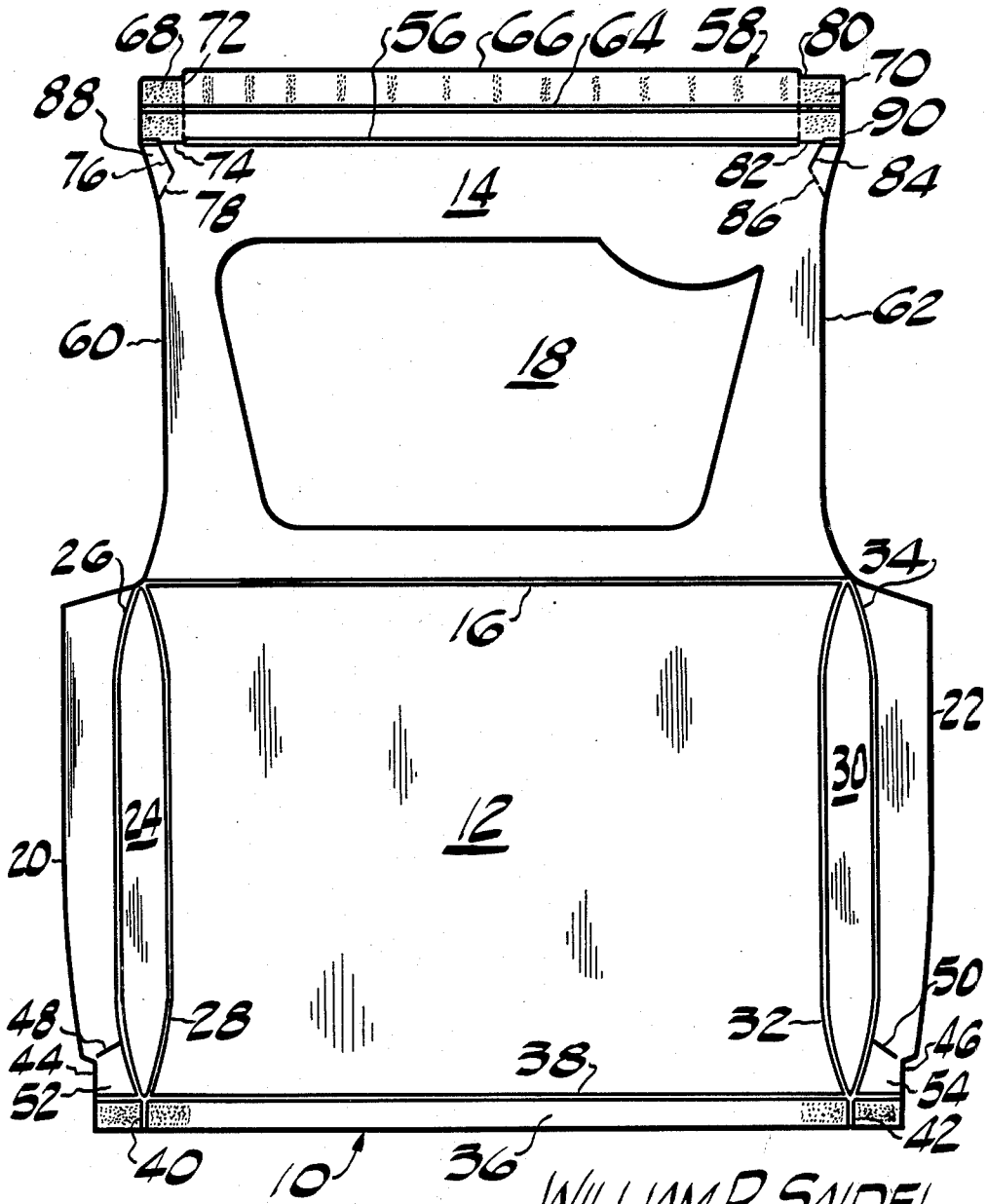


FIG. 1

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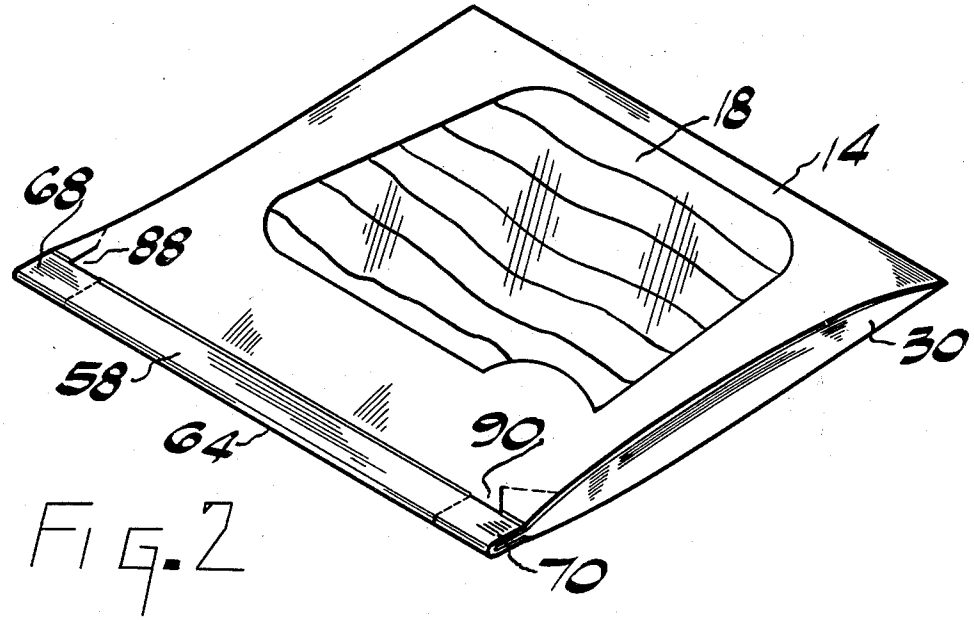


FIG. 2

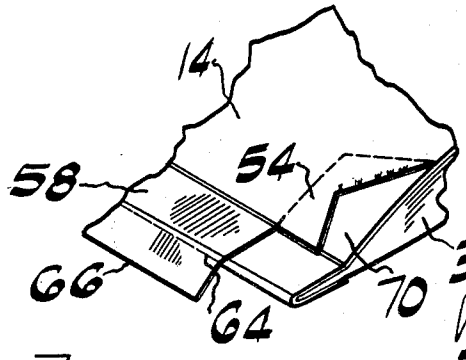


FIG. 3

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United States Patent Office 3,100,597 Patented Aug. 13, 1963

3,100,597

BACON CARTON

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Filed June 25, 1958, Ser. No. 744,440
7 Claims. (Cl. 229—87)

This invention relates in general to improvements in the art of packaging and more particularly to improvements in folded cartons adapted to enclose and conform generally to the shape of a group of shingled strips of material such as bacon.

In the packaging of food products such as bacon, sliced beef, and other materials packed in flat, layer-type packages, it is important that the package present a neat and attractive appearance and be convenient for consumer use. To this end, the package should closely conform to the shape of the material packaged, and it should be easily opened to facilitate removal of all or a part of the contents. Further, it is preferable that the package be capable of reclosure so that after it has once been opened and the contents inspected or partially removed, the remaining portion of the contents may be retained and stored within the original package. Also, it is obvious that where a greasy product such as bacon or other meat is to be packaged, the package should be made of a greaseproof material such as paperboard having a coating of wax or polyethylene.

Several packages have been devised to meet these requirements; however, a continuing search is under way for improvements in the structure of the package and means to reduce the cost of packaging product. Products which have been marketed in the form of a layer of slices, such as bacon, have been packaged heretofore by placing a stack of bacon slices on a card and completely enclosing the card and bacon with a snug-fitting overwrap of transparent material. Usually the overwrap is destroyed when the package is opened; however, to the extent that it is not destroyed, such a package becomes difficult to reclose after several slices have been removed since the inner surface of the transparent material will become smeared with grease which hinders proper sealing. Further, this type of overwrap package is subject to damage from deformation and crushing of the product where a plurality of packages are stacked atop one another, since there are no protective upstanding sidewalls which would tend to support the stacked packages independently of the contents.

Other types of packages have been devised to overcome this latter problem. For the most part these packages are either a combination of a cardboard structure, enclosing the product about three sides, and a protective overwrap enveloping both the product and cardboard structure; or a cardboard structure for completely enclosing the product wherein one edge of the structure may be severed or opened for removal of the product. In general, the latter type of package is relatively uneconomical to use since it requires relatively complex operations to load and close the package. Further, the means by which the latter type packages are reclosed have been found to be impractical and short-lived in actual practice.

While the present invention is directed to a package in the latter class, that is, one which completely encloses the product, it has been devised to overcome the deficiencies of the prior art. Therefore, it is a primary object of this invention to provide an improved package for shingled, sliced material which is adapted to be reclosable after being first opened.

Another object of this invention is to provide an improved package for sliced product which is economical to manufacture and use.

An additional object of this invention is to provide a bacon folder having an improved means for initially closing, opening, and then reclosing the package.

Still another object of this invention is to provide an improved bacon package adapted to be folded about and completely enclose a shingled group of bacon slices, which generally conforms to the shape of the draft of product.

Further, in many instances where a greaseproof package material is used it is difficult to secure the portions of the package together by an adhesive. This is particularly so with wax coated paperboard since the wax coating tends to prevent a good adhesive bond. However, wax coated paperboard has been found to be one of the best practical packaging materials since it is both economical and possessed of the desirable characteristics of grease resistance, strength, and flexibility. Therefore, it is an even further object of this invention to provide an improved wax coated package blank which may readily be secured together by adhesive.

Additional objects and advantages, if not specifically set forth herein, will be readily apparent to one skilled in the art from the following description taken in conjunction with the drawings in which:

FIGURE 1 is a plan view of the interior surface of the package blank in unfolded condition.

FIGURE 2 is a perspective view of a package comprising the blank of FIGURE 1 folded about a group of product as it appears after being initially closed and sealed; and

FIGURE 3 is a partial perspective view of one corner of the package, along the side which may be opened, showing the package as it appears reclosed.

Fundamentally, the package blank is stamped from a sheet of any suitable packaging material to provide joined top and bottom portions, upstanding sidewalls at both ends thereof, and a reclosable margin along one edge. The top and sidewall portions extend from three adjacent sides of the bottom portion. The reclosable margin extends across the edge of the top opposite the side common with the bottom portion, and is adapted to be folded under and secured to the open edge of the bottom section.

Referring to FIGURE 1, the blank, generally **10**, exhibits a plurality of die-cut, crease scored, cut scored, perforated and cut lines. By "crease scored" lines we mean those lines which are pressed or indented in the surface of the paperboard, or other equivalent suitable material, by a relatively blunt die and which are provided to enable the material to be folded along those lines. The term "cut scored" refers to fold lines wherein only the surface of the paper is severed by partially cutting the material with a relatively sharp die. Perforated or cut lines are lines of weakness and are provided where the blank is to be physically separated or broken rather than merely bent or creased. Preferably the crease scored lines do not cut or break the surface or any other portion of the material, while the cut scored lines do so cut or break the surface of the material. However, both crease scored and cut scored lines are to facilitate bending the package rather than breaking it. Cut scored lines provide an even weaker area at which to bend the material and eliminate "bellying" or distortion of the material surface adjacent the scored line such as is always found with crease scoring. While, in general, crease scored lines are sufficient to provide all of the folds in this package we have found it preferable to cut score the blank at certain points which will be particularly noted in the following description.

The blank **10** is divided into two major portions, namely a bottom **12** and a top **14**, by score line **16**. The top portion **14** may be conveniently provided with a window **18** which is cut from the blank **10** in the single operation which forms the blank. Two side flaps **20** and **22** extend

from the left and right side, respectively, of the bottom 12, adjacent the ends of line 16; and an edge margin 36 is defined by a score line 38 parallel and spaced inwardly from the free edge of bottom 12 opposite line 16. A wall section 24 defined by a pair of bowed score lines 26 and 28, separates the body of side flap 20 from the bottom 12 proper. As may be seen in FIGURE 1, the lines 26, 28 are joined at their ends at lines 16 and 38 and bow outwardly providing midsections which are straight and substantially parallel to and spaced from one another. A similar wall section 30 is provided between the body of the right side flap 22 and bottom 12 by a pair of line 32, 34. The end portions of the pairs of lines 26, 28 and 32, 34 converge and may be either straight or curved crease-scored lines; preferably the ends are curved as shown in FIGURE 1. The midsections of score lines 26, 28, 32 and 34 are preferably cut scored to insure that the wall sections 24, 30 will not be bent along their surface between the bowed score lines. Two additional cut score lines 40, 42 extend from the juncture of lines 26, 28, 38 and 32, 34, 38, respectively, across the width of margin 36. Lines 40, 42 are cut scored to prevent "bellying" of the interior surface of the blank at any point across margin 36 which would tend to disarrange the fold and hinder proper sealing of the package.

Concerning the side flaps 20 and 22 (as viewed in FIGURE 1), the upper edges thereof are inclined downwardly at a slight angle from a projection of score line 16. When the package is folded about its contents the side flaps are bent upwardly, along score lines 28 and 32, and inwardly, along score lines 26 and 34. As may be seen in FIGURE 2, the wall sections 24, 30 will become arcuate and follow the bow described by lines 28 and 32, respectively. At the same time the bottom portion 12 will curve slightly between score lines 16 and 38, and the flaps 20, 22 will also curve across the upper surface of the contents. We have found that if the upper edges of the flaps (as seen in FIGURE 1) should be cut along a projection of score line 16, the folding of the top portion 14 across the package will be made difficult due to interference between the flaps and top. However, by cutting the flaps as we have shown the inclined upper edges will be out of the way of the top 14, at least until it is bent through a position essentially perpendicular to the bottom 12, and will tend to slide under the top as it is folded down upon the contents.

The lower portions of side flaps 20 and 22 taper inwardly slightly and are notched at 44, 46 a short distance above score line 38. A pair of cut lines 48 and 50, inclined upwardly from just inside the point of each notch, extend across flaps 20 and 22 to score lines 26 and 34, respectively. These cut lines 48 and 50 define lower ear portions 52 and 54 of side flaps 20 and 22, which will assist reclosing of the completed package, as will be hereinafter described.

Referring now to the top 14 of carton blank 10, at the upper free edge thereof is a score line 56 defining an upper edge margin 58. The distance between line 16 and line 56 equals the distance between line 16 and line 38 (along the lower edge of bottom 12 as viewed in FIGURE 1) and all of these lines are essentially parallel. Further, the left and right side edges 60 and 62 of the top 14 are shaped to generally correspond to the outline of lines 28, 40 and 32, 42, respectively, when the top 14 is folded down upon the bottom 12. However, the distance between line 16 and the opposite free edge of top 14 is greater than the distance between line 16 and free edge of bottom 12. A second score line 64 is located across the length of the upper edge margin 58 parallel to, and spaced at substantially the latter distance (line 16 to edge of bottom 12) from line 16. Line 64, across the upper edge margin 58, defines what we refer to as an adhesive margin 66, to be later explained.

At the upper left and right corners of top 14 are tabs 68 and 70, respectively, which are defined by the outer

edges of the carton blank 10 and a plurality of perforated and cut lines so as to be detachable from the remainder on top 14. Referring to the left tab 68, a perforated line 72 extends perpendicular to line 56, across the upper edge margin 58 inwardly of the end thereof a distance at least equal to the width of ear 52 along margin 36. A portion of line 56 is cut at 74 from line 72 to a point about midway between that line and the left edge of blank 10. Thence another cut line 76 extends a short distance below and at an angle to line 56 substantially parallel to an immediate section of side edge 60. A perforated line 78 connects the end of cut line 76 and edge 60 at a point thereon spaced a distance from line 16 substantially equal to the distance between line 16 and the intersection of cut line 48 and score line 26 on side flap 20. Tab 70 at the upper right corner is similarly defined by a plurality of perforated and cut lines 80, 82, 84 and 86. It will be seen that the configuration of the cut lines 74, 76 and 82, 84 form a pair of tongues 88 and 90, respectively. As will hereinafter become clear, the tongues 88 and 90 are used to lock the top 14 in place when the completed package is reclosed after first having been broken open.

A suitable adhesive is applied to the portion of tabs 68 and 70 above score line 56 and along the adhesive margin 66 above score line 64. Further, it is usually desirable to glue a transparent film across the window 18. Suitable films include cellophane, rubber hydrochloride, polyester films, and other greaseproof and transparent material having a high gloss, low water absorption and resistance to stretching and wrinkle development.

The adhesive is applied solidly across the aforementioned portions of the tabs 68, 70. However, it is preferable to stripe the adhesive along margin 66 only at separated, relatively small areas. An alternative is the substitution of a resealable pressure-sensitive type adhesive across margin 66. Either type of adhesive provides a margin seal that can be readily grasped and broken by the consumer to open the package. A further alternative is to stripe the adhesive on the undersurface of edge margin 36 between lines 40 and 42 rather than to the adhesive margin 66 between perforated lines 72 and 80. The latter may be desirable under certain carton blank manufacturing conditions. Also, it is preferable to apply adhesive to edge margin 36 on the ears 52, 54, and slightly inwardly thereof to secure the ears to the bottom 12 when folded thereon.

After the blank has been cut a suitable thermo-responsive adhesive, such as a vinyl acetate resin emulsion, is applied to the aforementioned areas including the margin 36 at both the ears 52, 54 and striped on the underside of the margin 36. A paraffin wax coating of substantially uniform thickness is then applied to the entire blank, including the areas to which adhesive has been applied, and quickly chilled by immersing the blank in cold water with the result that the wax is retained as a coating on the surface rather than penetrating the paperboard.

Then a major portion of the thickness of the wax coating is removed from the adhesive areas. The wax may be removed simply by scraping the margin areas 36, 66 with a doctor blade or the like. It is desirable to leave a thin layer of wax on these areas to protect the thermo-responsive adhesive until the sealing heat is applied to the package. Thus any tendency of the adhesive to stick to other blanks, when stacked, is reduced.

In operation it is usually advantageous to prebend the carton blank 10 before undertaking the actual packaging steps. The blank 10 is then positioned on a flat surface with the interior side disposed upwardly as viewed in FIGURE 1. The desired quantity of shingled sliced material is placed upon the bottom 12 within the boundaries defined by score lines 16, 32, 38, and 28. The side flaps 20 and 22 are then folded upwardly and inwardly across the top of the product leaving end walls 24 and 30 substantially vertical. Top 14 is then folded across the product (and folded side flaps 20, 22) and the adhe-

sive margin 66, including the portions along tabs 68 and 70, is folded across the edge of bottom 12 and pressed against the undersurface of edge margin 36 forming the closed package of FIGURE 2. In this manner tabs 68 and 70 will be secured to ears 52 and 54, respectively, and the underside of bottom 12 while the adhesive margin 66 will be secured to the undersurface of bottom 12 throughout its length.

The wax coated carton having a heat sensitive adhesive is folded in the same manner; and then the folded edge, including margins 58, 66 and 36, is passed between a pair of closely spaced heated members, such as a pair of rollers or irons, to join the adhesive areas. It may be observed that the folded corners of the package consist of four layers of paperboard as compared to only three layers along the sealed edge between perforated lines 72, 80. Thus when the waxed carton is passed between relatively fixed sealing members a greater pressure will be exerted at the corners (across tabs 68, 70) than across the connecting edge. Therefore, the effect will be to make a relatively weaker bond along the edge between perforated lines 72, 80.

It should be particularly noted that in accordance with any of the described alternatives, tabs 68 and 70 will be substantially permanently secured to the undersurface of bottom 12. However, the intermediate portion of adhesive margin 66 between perforated lines 72 and 80 will be less firmly affixed to the undersurface of bottom 12 and may be readily broken away therefrom. In some instances it may even be suitable to secure tabs 68, 70 and ears 52, 54 to the bottom 12 by means of a fastener rather than by an adhesive. Ordinary staples and/or metal clips have been found to adequately perform this function.

Regardless of the manner by which it is closed, the package may be easily opened preparatory to the removal of the contents. Side flaps 20 and 22 will normally remain in their folded position partially covering the contents by reason of the fact that ears 52, 54 will be secured to the bottom 12. When part of the contents is to be removed the consumer merely breaks the side flaps from the ears at the uncut portion between the ends of lines 48, 50 adjacent the points of notches 44, 46 to gain access to the sliced material.

At the time that it is desired to reclose the package the side flaps are merely turned down upon the remaining contents and the top 14 refolded across the package. Tongues 88 and 90 are then inserted beneath ears 52 and 54 to hold the top in the closed position as in FIGURE 3. It has been found that the package will remain closed even when the adhesive margin 66 is not resecured, due to the grip between the tongues and the ears. However, if a pressure sensitive adhesive is used the margin 66 may be turned under and resealed. Further, should the consumer so desire, the package may be temporarily reclosed by either merely turning the margin 66 under the edge of bottom 12 (without inserting the tongues beneath the ears), or by folding the flaps 20, 22 over the outer surface of the top 14 and then inverting the package and resting it upon the flaps and top portions.

Obviously, many modifications and variations of the invention as hereinbefore set forth may be made without departing from the spirit and scope thereof, and therefore only such limitations should be imposed as are indicated in the appended claims.

We claim:

1. A paperboard package blank for wrapping sliced and shingled food material, said blank being scored transversely to form a bottom portion and a top portion adapted to be folded thereacross, detachable tabs at the corners of said top opposite said bottom portion, said tabs being defined by a plurality of lines of weakness positioned to leave a tongue at each corner of said top when the tabs are detached therefrom, and ears extending from about the corners of said bottom opposite said top foldable inwardly across said bottom at locations generally corresponding to the position of said tabs when the top is folded across said bottom, said ears being engageable with said tongues when said tabs are detached to secure the blank in a folded condition.

2. A paperboard package blank for wrapping sliced and shingled food material, said blank being scored transversely to form a bottom portion and a top portion adapted to be folded thereacross, a closure margin extending across an edge of said top opposite said bottom, detachable tabs at the corners of said top including portions of said closure margin, said tabs being defined by a plurality of lines of weakness positioned to leave a tongue at each corner of said top when the tabs are detached, a second closure margin extending across said bottom opposite said top and corresponding to said first-mentioned closure margin, and ears extending from the sides of said bottom at least between said second margin and said top foldable inwardly across said bottom at locations generally corresponding to the position of said tabs when the top is folded across said bottom, said ears being engageable with the tongues when said tabs are detached to secure the blank in a folded condition.

3. A paperboard package blank for wrapping sliced and shingled food material, said blank being generally elongated in shape and divided transversely into a bottom and a top adapted to be folded thereacross, a scored line extending across said top opposite said bottom defining a margin adapted to be turned under said bottom, a pair of detachable tabs located at the corners of said top including portions of said margin, said tabs being defined by a plurality of perforated and cut lines positioned to leave a tongue at each corner of said top when the tabs are detached therefrom, and a pair of ears extending from the sides of said bottom foldable inwardly across said bottom at a location generally corresponding to the position of said tabs when the blank is folded whereby to cooperate with said tongues when said tabs are detached from said top to hold the blank folded.

4. A paperboard package blank for wrapping sliced and shingled food material, said blank being generally elongated in shape and scored transversely to one side of the center thereof to form a bottom portion at the shorter side and a top portion adapted to be folded across said bottom, a narrow edge margin along the bottom opposite said top, a corresponding top margin across an edge of the top opposite said bottom, said latter margin being scored throughout its length and adapted to be folded thereat about said bottom edge margin, detachable tabs at the corner of said top including said top margin defined by lines of weakness disposed to form tongues on said top adjacent the corners when said tabs are detached, side flaps coextensive at either side of said bottom adjacent said top, each of said side flaps being further characterized by a pair of bowed scored lines intersecting at substantially both ends of the side flap to form a tapered wall section when said flaps are folded inwardly of said blank, an earpiece at the bottom of each side flap roughly corresponding to said tabs separable from said side flap and adapted to receive said tongues of said top after said tabs are detached.

5. A paperboard container for sliced and shingled food material, comprising a generally elongated blank scored transversely to one side of the center thereof forming a bottom portion at the shorter side and a top portion folded across said bottom, a narrow edge margin along the bottom opposite said top, a corresponding top margin across an edge of the top opposite said bottom, said latter margin being scored throughout its length and folded thereat about said bottom edge margin, detachable tabs at the corners of said top including said top margin, said tabs being defined by perforated and cut lines situated to form tongues on said top adjacent the corners when said tabs are detached, side flaps coextensive at either side of said bottom adjacent said top and folded inwardly of said

bottom, each of said side flaps having a pair of bowed, creased lines intersecting at substantially both ends of the side flap forming upstanding tapered wall sections, an earpiece at the bottom of each side flap roughly corresponding to said tabs, said earpieces including portions of said edge margin and being separable from said side flap along a line spaced above and inclined to said edge margin and adapted to receive said tongues of said top after said tabs are detached, and means to secure said tabs to said bottom with the ears secured therebetween whereby to form a detachable closure for said package.

6. A paperboard package blank for wrapping sliced and shingled food material, said blank being scored transversely to form a bottom portion and a top portion adapted to be folded thereacross, one of said portions having a closure margin adapted to be folded about an edge of said opposite portion, a thermo-responsive adhesive disposed across at least part of the surface of said margin and the opposing surface of said other portion when folded thereabout, for initially sealing said package, a relatively thin coating of wax covering all surfaces of said blank, said coating being of substantially less thickness across the surfaces to which said adhesive has been applied whereby to permit bonding between said surfaces and said adhesive, and separate reclosure means forming parts of said top portion and said bottom portion for releasably securing said package blank in the closed position with

said top folded across said bottom after the adhesive bond has been broken.

7. An improvement in wax coated paperboard package blanks for wrapping sliced and shingled food material, said improvement comprising: a generally elongated paperboard blank scored transversely thereof to form top and bottom portions, marginal areas at either end of said blank situated to cooperate when said blank is folded to form a closure, a thermo-responsive adhesive disposed across at least portions of the cooperating surfaces of said margins, and a relatively thin coating of wax covering all surfaces of said blank, said coating being of substantially less thickness across the adhesive surfaces whereby to permit an effective bond to be made between said cooperating surfaces upon the application of heat.

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