

Jan. 27, 1959

W. H. INMAN

2,870,950

CARTON

Filed April 24, 1957

2 Sheets-Sheet 1

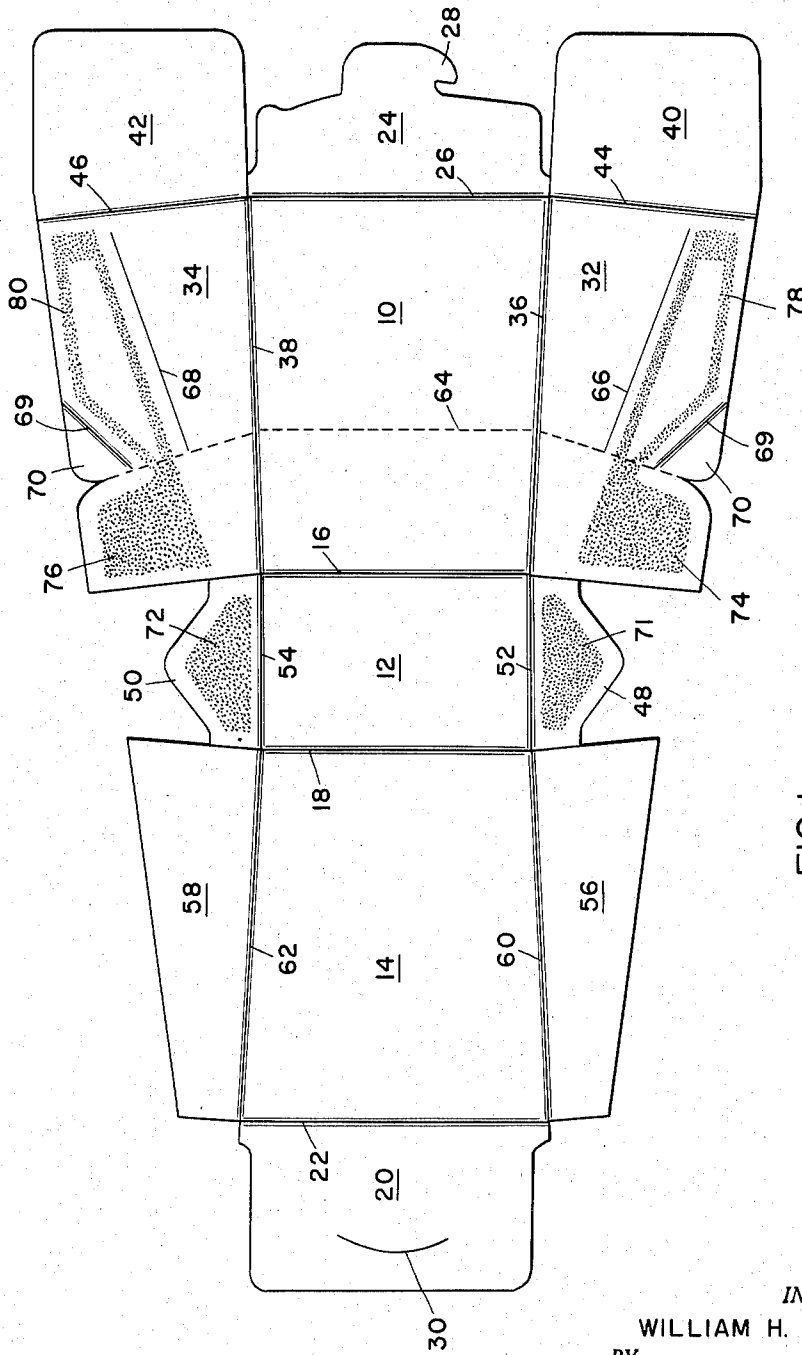


FIG. 1

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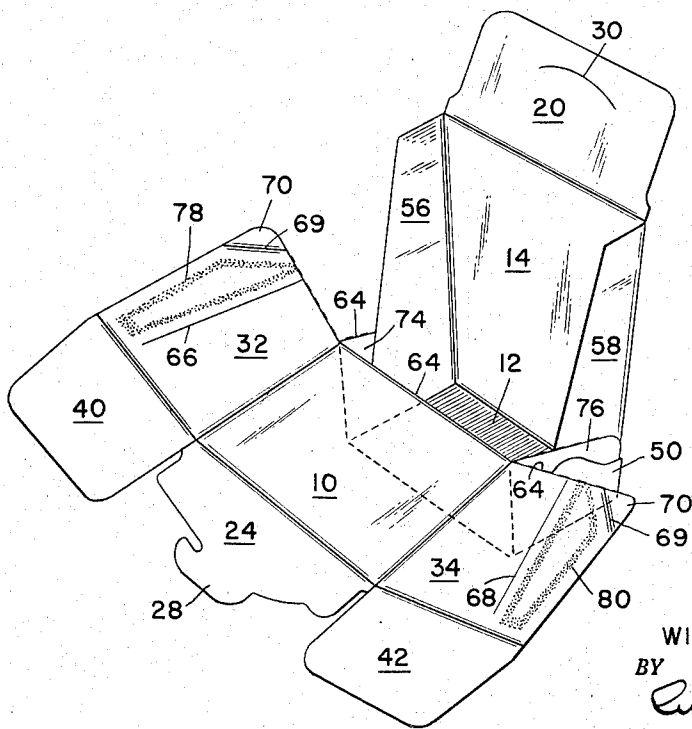
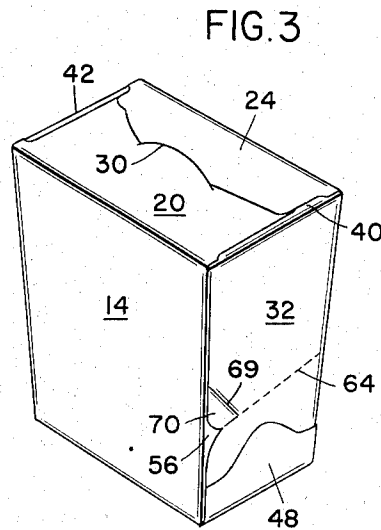
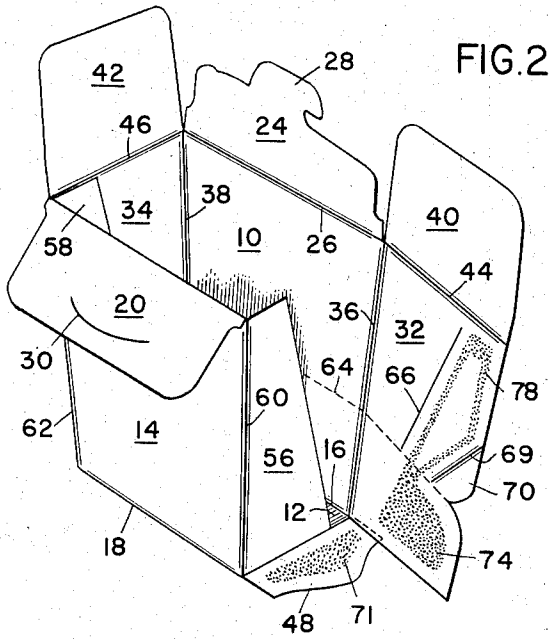


FIG. 4

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CARTON

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7 Claims. (Cl. 229—16)

This invention relates to cartons, and particularly to those adapted to contain liquid or semi-liquid food materials, such as ice cream, one object of this invention being the provision of a more satisfactory carton of this nature.

Liquid or semi-liquid food products, such as ice cream, are frequently packaged in set up cartons made of paper-board or the like and known in the trade as "pails." These containers are of slightly tapered shape so that they may be shipped nested inside of one another when empty with a great saving of space. They are generally provided with detachable sealing flaps on top through which the contents are removed by scooping or dipping.

When the contents are frozen hard, considerable difficulty is frequently experienced in removing the contents by dipping as described above. Further, in certain cases, it is desirable to remove the contents as a unit in the form of a brick which is very difficult to do through the top of the container. For these reasons, it is desirable to produce a carton which may be conveniently unfolded to expose other surfaces of the contents, and the provision of such a carton is another object of this invention.

Unfoldable cartons have heretofore been produced which may be opened to expose the contents for removal. However, cartons of this nature have in some cases been unsatisfactory because of leakage around the detachable parts. Since the contents are often of a liquid or semi-liquid nature, leakage is particularly apt to occur, especially after the cartons have been opened for partial removal thereof. For this reason, it is desirable to produce a carton having a leak-proof bottom closure which remains intact while the carton is opened, in order to prevent leakage when the carton is reclosed after partial removal of the contents, and the provision of such a carton is a further object of this invention.

Unfoldable cartons heretofore known in the art have in some instances come completely apart when they are opened to expose the contents for removal. This renders the refolding operation difficult, and affords only partial protection for the unused portion of the contents. For this purpose, it is a still further object of this invention to produce a carton having a basic bottom structure which remains intact while the carton is opened, and which provides a base for the effective reclosing of the carton after partial removal of the contents for more complete protection of the unused portion of the contents.

Another object is to provide a novel means for securely retaining the carton walls in assembled relation, but which will allow these walls to be easily and quickly separated for exposing the contents.

Further objects include the provision of a carton as described above that may be manufactured from a one-piece paper-board blank by standard machinery with a minimum usage of stock.

To these and other ends the invention resides in certain improvements and combinations of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

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In the drawings:

Fig. 1 is a plan view of a cardboard blank used in manufacture of the container embodying this invention;

Fig. 2 is a perspective view of the carton formed from the blank of Fig. 1 prior to the gluing of one of the side walls;

Fig. 3 is a perspective view of a completed carton embodying this invention, and

Fig. 4 is a perspective view of a carton opened to expose the contents for removal as a unit.

A carton embodying this invention and herein disclosed for purposes of illustration is preferably formed from a one-piece cardboard blank comprising a front wall 10, bottom 12, and a rear or back wall 14 connected by score lines 16 and 18. A top closure flap 20 is foldably connected to back wall 14 by means of a score line 22, and a front closure flap 24 is foldably connected to front wall 10 by score line 26. Front closure flap 24 is provided with a hook-like extension 28, and back closure flap 20 is provided with an arcuate slit 30 for cooperation therewith as hereinafter described. Front wall 10 and back wall 14 are preferably trapezoidal in shape, to impart a taper to the erected carton.

Front wall 10 carries a pair of side flaps 32 and 34 foldably connected thereto by means of score lines 36 and 38, respectively. Side flaps 32 and 34 carry side closure flaps 40 and 42 connected thereto by means of score lines 44 and 46, respectively. Bottom wall 12 carries a pair of side bottom flaps 48 and 50 foldably connected thereto by means of score lines 52 and 54, respectively. Back wall 14 carries a pair of side flaps 56 and 58 foldably connected thereto by means of score lines 60 and 62, respectively.

A line of weakening 64 extends across front side flap 34, front wall 10, and side flap 32, as shown in Fig. 1. Line 64 may take any of the well known forms of weakening such as a slit partially cutting the paper board, a line of short slits completely through the paper board, or a row of closely spaced perforations, as well known in the art. However, it is preferable that this line of weakening be applied in a manner that will not permit leakage, or contamination of, the food product in the container. A pair of score lines 66 and 68 extend transversely across front side flaps 32 and 34 at substantially right angles to line of weakening 64, for preventing peeling when the adhesive connections are broken, as hereinafter described. In addition, a pair of short score lines 69 extend diagonally from line 64 to the outer edges of flaps 32 and 34, forming a pair of triangular tabs 70.

Adhesive is applied to bottom side flaps 48 and 50 as indicated at 71 and 72, respectively, in Fig. 1. In addition, adhesive is applied to the lower zones of flaps 32 and 34 as indicated at 74 and 76, and relatively narrow bands of adhesive are applied along and spaced inwardly from the free edges of and spaced from their score lines 66—69 and 68—69, side flaps 32 and 34 as indicated at 78 and 80, respectively.

The carton is set up as follows. Front and back walls 10 and 14 are folded upwardly at substantially right angles to bottom 12 at lines 16 and 18, respectively. Back side flaps 56 and 58 are then folded at substantially right angles to the front and back walls 10 and 14, and front side flaps 32 and 34 are folded inwardly over back flaps 56 and 58. A connection is made between the front and back side flaps by the adhesive applied at 74, 76 and 78 and 80. Fig. 2 illustrates a carton at this stage of assembly with one side completely assembled and the other side just prior to gluing.

Bottom side flaps 48 and 50 are then folded upwardly over the lower portions of flaps 32 and 34, and the adhesive connection is made therebetween by the adhesive

at 71 and 72, respectively, forming a leak-proof bottom closure. The carton is now completely assembled and is ready for filling.

After the cartons are filled, the top is closed by folding flaps 40 and 42 inwardly to cover the contents. Flaps 40 and 42 are held in position by means of flaps 20 and 24 which are folded down over them and locked by engaging hook 28 in slit 30, as shown in Fig. 3.

When the consumer wishes to use the contents of this carton, he may open the same by disengaging hook 28 from slit 30 and opening flaps 20 and 24. Flaps 40 and 42 then may be lifted to expose the top of the contents of the carton. The required amount of the contents may then be dipped out by means of a scoop or spoon, and the carton then may be reclosed by folding flaps 40, 42, 20 and 24 downwardly and by inserting hook 28 in slit 30.

However, in certain cases it may be desirable to remove the contents by slicing rather than by dipping, or it may even be desirable to remove the entire contents in the form of a single brick. In this case, the top of the carton is opened as described above, exposing the top surface of the contents. The sides are then opened by grasping tabs 70 on flaps 32 and 34 and pulling them outwardly. This pull will easily detach the relatively weak adhesive connection formed by the narrow bands of adhesive 78 and 80, and at the same time side flaps 32 and 34 will rip along line of weakening 64. However, because of the relatively greater strength of the adhesive bond formed by large areas 74 and 76, and the reinforcing effect of bottom flaps 48 and 50, the lower portion of side walls 32 and 34 will remain in place maintaining the shape of the bottom of the carton and preventing complete unfolding of the same. As may be seen from an inspection of Fig. 4, line 64 extends upwardly and forwardly across side walls 32 and 34. This corresponds toward the front wall to the direction of the tearing force and the line along which each wall would normally tear when tabs 70 are pulled, and this fact assures smooth, clear tearing along the desired line. Score lines 66 and 68 serve to limit any surface peeling that may occur when the adhesive bonds are broken. Front wall 10 is then folded on itself outwardly and downwardly about its weakened line 64 to expose the main portion of the front surface of the contents as shown.

The carton is then in the form shown in Fig. 4, wherein the top and front surface and substantial portions of the side surfaces of the contents are exposed. The contents may then be easily removed as a single unit, if desired, or one or more portions may be removed therefrom by slicing or cutting. In the latter case, the carton may be reclosed for protection of the remaining contents by folding front wall 10 upwardly over the contents, folding side walls 32 and 34 inwardly to their original position, and folding flaps 40 and 42 downwardly. Flaps 40 and 42 are then frictionally retained in position by means of flaps 20 and 24 which are fastened by hook 28 and slit 30. The carton is then held in substantially its original condition as shown in Fig. 3, and serves to protect the remainder of the contents.

The carton herein described may be manufactured by existing machinery at relatively low cost. In use, the carton serves to protect the contents during storage and shipment, and yet may be easily opened by the consumer for access thereto. The top may be easily opened in the normal fashion for access to the top of the contents for scooping or dipping, or the sides may be rapidly and easily torn to allow a substantial portion of the carton to be folded away from the contents for access thereto.

The reinforcement of the bottom portion of the sides of the carton by means of the bottom flaps preserves the integrity of the bottom structure of the carton, including the lower portions of the front and back walls and of their side flaps relative to the carton bottom thereby maintaining its shape and allowing the carton to be re-

folded about the unused contents for protection of the same.

The triple thickness at the sides of the bottom provides a tight, leak-proof closure that prevents leakage of the contents during filling and storage. Further, since the bottom is not disturbed during the unfolding of the carton, the carton remains leak-proof throughout its use, preventing loss or contamination of the contents even after repeated opening and refolding.

It will thus be seen that the invention accomplishes its objects and while it has been herein disclosed by reference to the details of a preferred embodiment, it is to be understood that such disclosure is intended in an illustrative, rather than a limiting sense, as it is contemplated that various modifications in the construction and arrangement of the parts will readily occur to those skilled in the art, within the spirit of the invention and the scope of the appended claims.

I claim:

1. A carton having a bottom, and front, rear and side walls extending upwardly from said bottom, said side walls comprising overlapping inner and outer flaps, a line of weakening extending across said front wall and said outer flaps and dividing the same into upper and lower zones, adhesive connections between the lower zones of said outer flaps and the corresponding portions of said inner flaps, and detachable adhesive connections between the upper zones of said outer flaps and the corresponding portions of said inner flaps, said upper zones being detachable from said inner flaps and concomitantly separable from said lower zones along said lines of weakening to allow said upper zones and the upper portion of said front wall to be swung forwardly for exposing the contents of said carton.

2. A carton having a bottom, and front, rear and side walls extending upwardly from said bottom, said side walls comprising overlapping inner and outer flaps, a line of weakening extending across said front wall and diagonally across each of said outer flaps upwardly from said rear wall to said front wall in spaced relation with the top and bottom of the carton and dividing said outer flaps into upper and lower zones, adhesive connections between the lower zones of said outer flaps and the corresponding portions of said inner flaps, and detachable adhesive connections between the upper zones of said outer flaps and the corresponding portions of said inner flaps, said upper zones being detachable from said inner flaps and concomitantly separable from said lower zones along said lines of weakening to allow said upper zones and the upper portion of said front wall to be swung forwardly for exposing the contents of said carton.

3. A carton having a bottom, and front, rear and side walls extending upwardly from said bottom, said side walls comprising overlapping inner and outer flaps, a line of weakening extending transversely across said front wall and said outer flaps and dividing the same into upper and lower zones, adhesive connections between the lower zones of said outer flaps and the corresponding portions of said inner flaps, and detachable adhesive connections disposed between the upper zones of said outer flaps and the corresponding portions of said inner flaps and spaced from the free edges of said outer flaps said edges being adapted to be grasped and pulled for separating the upper zones of said outer flaps from said inner flaps and for separating said upper zones from said lower zones along said lines of weakening for swinging said upper zones and the upper portion of said front wall outwardly for exposing the contents of said carton.

4. A carton having a bottom, and front, rear and side walls extending upwardly from said bottom, said side walls comprising overlapping inner and outer flaps, a line of weakening extending transversely across said outer flaps from said back wall to said front wall dividing the same into upper and lower zones, a score line extending across said front wall and meeting said lines of weakening

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in said outer flaps, adhesive connections between the lower zones of said outer flaps and the corresponding portions of said inner flaps, and detachable adhesive connections between the upper zones of said outer flaps and the corresponding portions of said inner flaps, whereby said upper zones may be detached from said inner flaps and separated from said lower zones along said lines of weakening for swinging said upper zones and the upper portion of said front wall outwardly about said score line for exposing the contents of said carton.

5. A carton having a bottom, and front, rear and side walls extending upwardly from said bottom, said side walls comprising overlapping inner and outer flaps, a line of weakening extending transversely across said outer flaps dividing the same into upper and lower zones, adhesive connections between the lower zones of said outer flaps and the corresponding portions of said inner flaps, detachable adhesive connections between the upper zones of said outer flaps and the corresponding portions of said inner flaps, and a line of surface weakening in the upper portion of said outer flaps between said detachable adhesive connections and the fold lines connecting said outer flaps to said front wall for preventing surface peeling of said outer flaps, whereby said upper zones may be detached from said inner flaps and separated from said lower zones along said lines of weakening for swinging said upper zones and the upper portion of said front wall outwardly for exposing the contents of said carton.

6. A tapered carton having a bottom, and front, rear and side walls extending upwardly and outwardly from said bottom, said side walls comprising overlapping inner and outer flaps, a line of weakening extending transversely across said front wall and said outer flaps and dividing the same into upper and lower zones, adhesive connections between the lower zones of said outer flaps and the corresponding portions of said inner flaps, and detachable

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adhesive connections disposed between the upper zones of said outer flaps and the corresponding portions of said inner flaps and spaced from the free edges of said outer flaps said edges being adapted to be grasped and pulled to separate said upper zones from said inner flaps and to separate said upper zones from said lower zones along said line of weakening for swinging said upper zones and the upper portion of said front wall outwardly for exposing the contents of said carton.

7. A carton having a bottom, and front, rear and side walls extending upwardly from said bottom, said side walls comprising overlapping inner and outer flaps, a pair of bottom flaps foldably connected to said bottom and overlapping the lower portions of said outer flaps, a line of weakening extending transversely across said outer flaps above the upper edge of said bottom flaps for dividing said outer flaps into upper and lower zones, adhesive connections between said bottom flaps and the lower zones of said outer flaps, adhesive connections between the lower zones of said outer flaps and the corresponding portions of inner flaps, and detachable adhesive connections between the upper zones of said outer flaps and the corresponding portions of said inner flaps whereby said upper zones may be detached from said inner flaps and separated from said lower zones along said lines of weakening for swinging the upper zones and the upper portion of said front wall outwardly for exposing the contents of said carton.

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