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Tolaas

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[54] **WEDGE SHAPED CARTON**

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[73] Assignee: **Hoerner Waldorf Corporation,** St. Paul, Minn.

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[21] Appl. No.: **706,192**

Related U.S. Patent Documents

Reissue of:

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Filed: **July 2, 1973**

[52] **U.S. Cl.** ..... **229/22;** 206/491; 229/17 R; 426/113

[51] **Int. Cl.²** **B65D 5/18;** B65D 85/00

[58] **Field of Search** ..... 229/22, 51 R, 51 AS, 229/51 TS, 51 D, 51 ST, 51 WB, DIG. 14, 17 R; 206/45.32, 45.31; 426/113, 119

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Primary Examiner—Davis T. Moorhead
Attorney, Agent, or Firm—Jerry F. Best

[57] **ABSTRACT**

A carton is provided having opposite side portions which project beyond the lower surface of carton. The lower surface is provided with apertures so that heat may pass through the apertures when the carton is placed in an oven or other heating chamber. A strip of film is secured to the lower surface and along an adjoining wall. The film normally closes the apertures, but is removable to expose the apertures.

12 Claims, 14 Drawing Figures

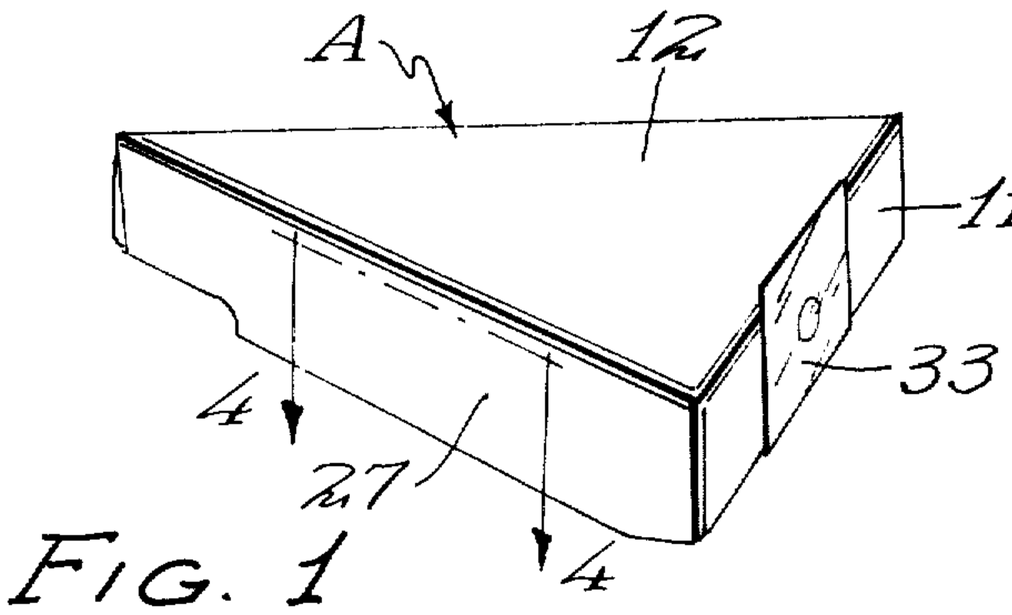

FIG. 1

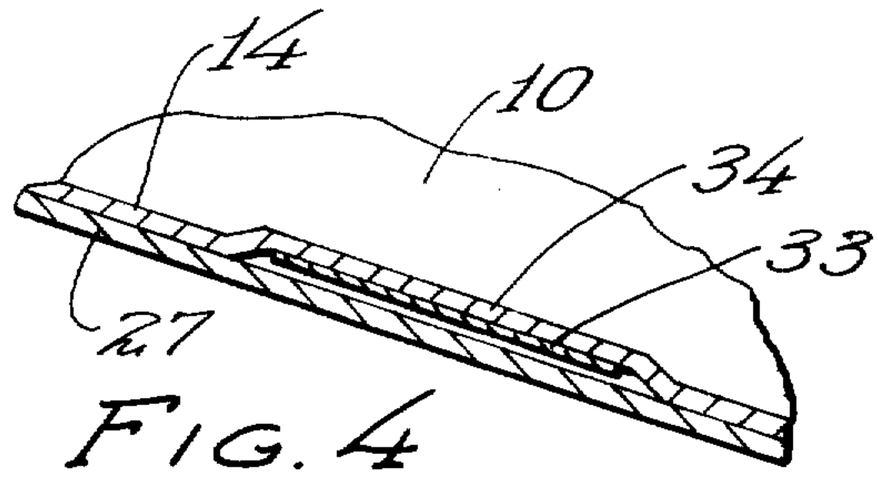

FIG. 4

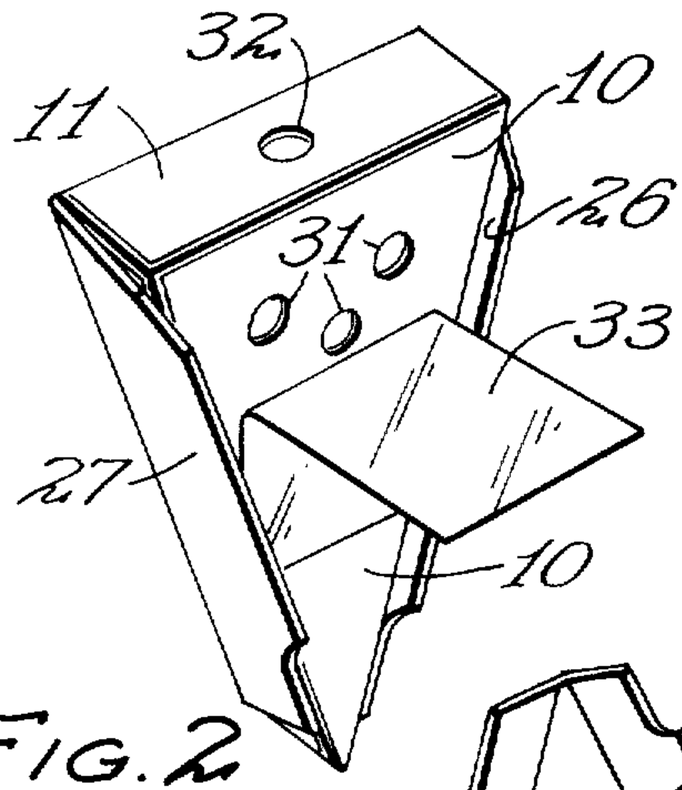

FIG. 2

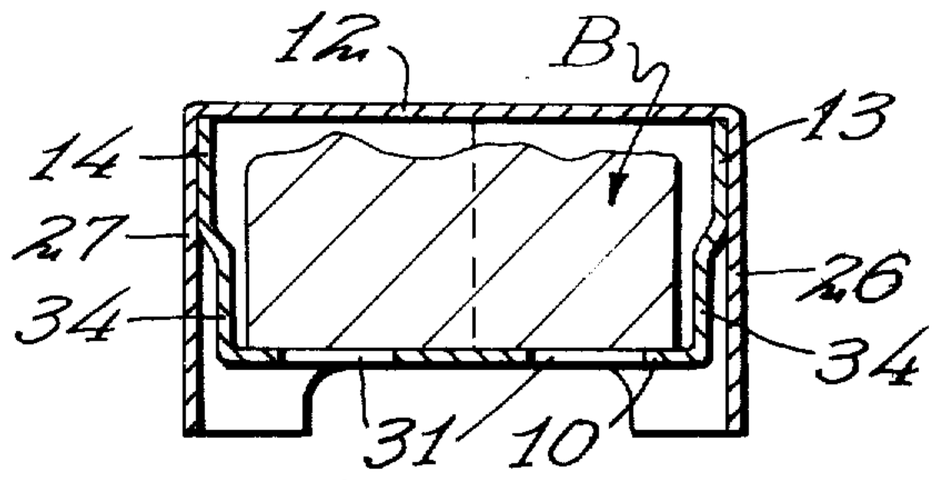

FIG. 5

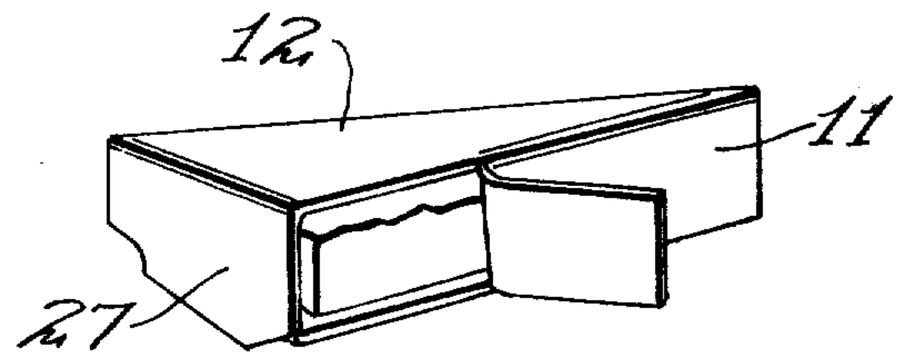

FIG. 6

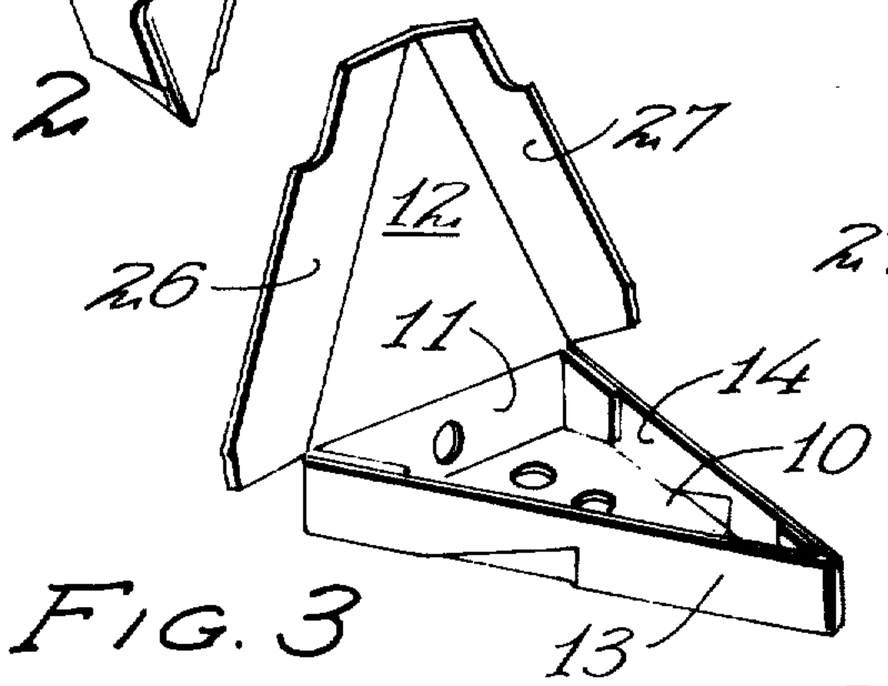

FIG. 3

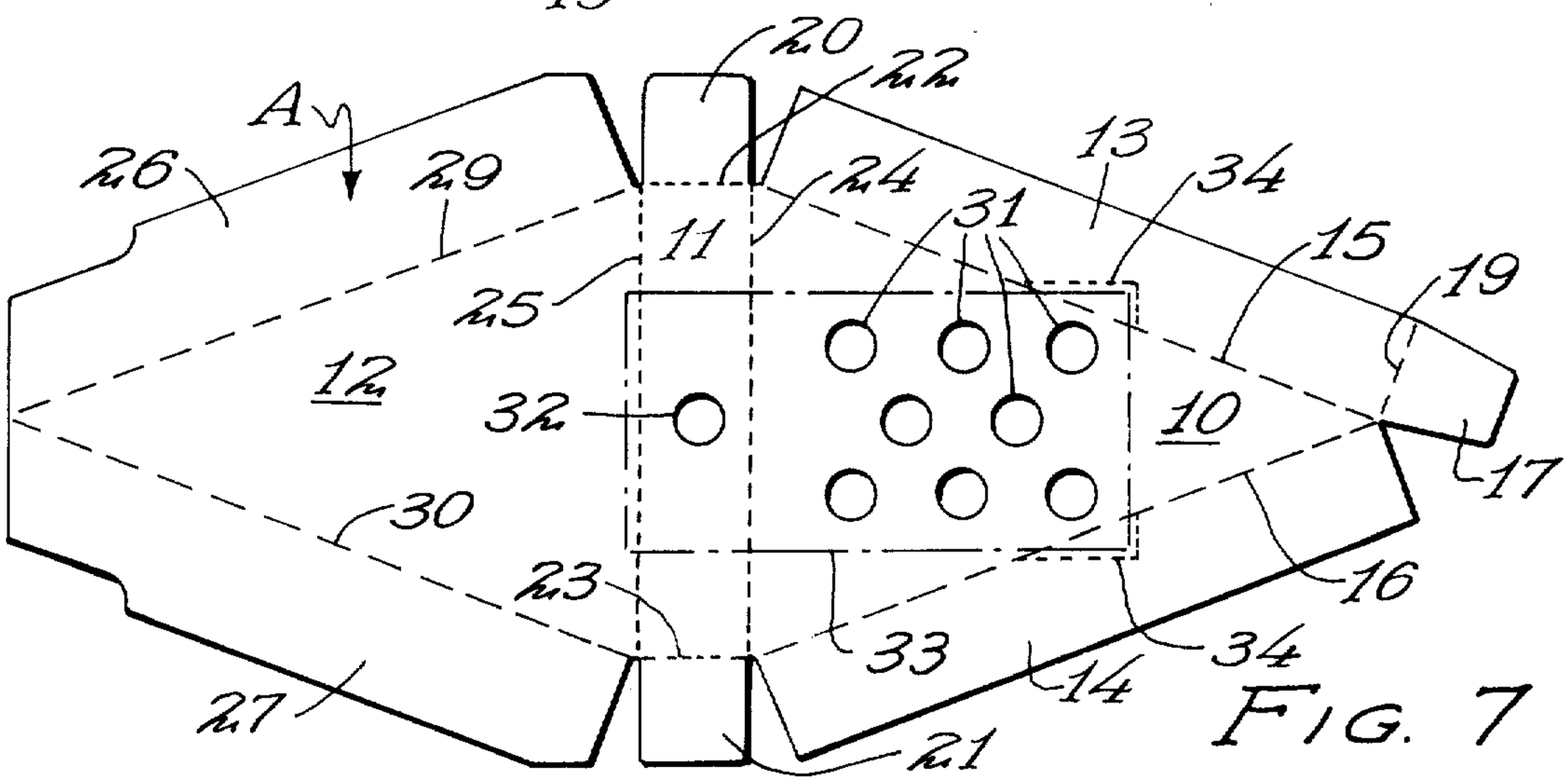

FIG. 7

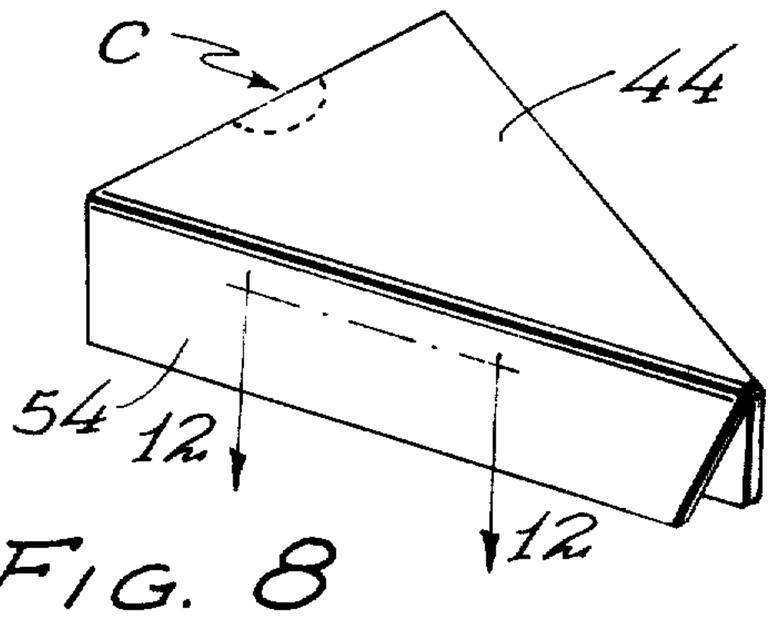

FIG. 8

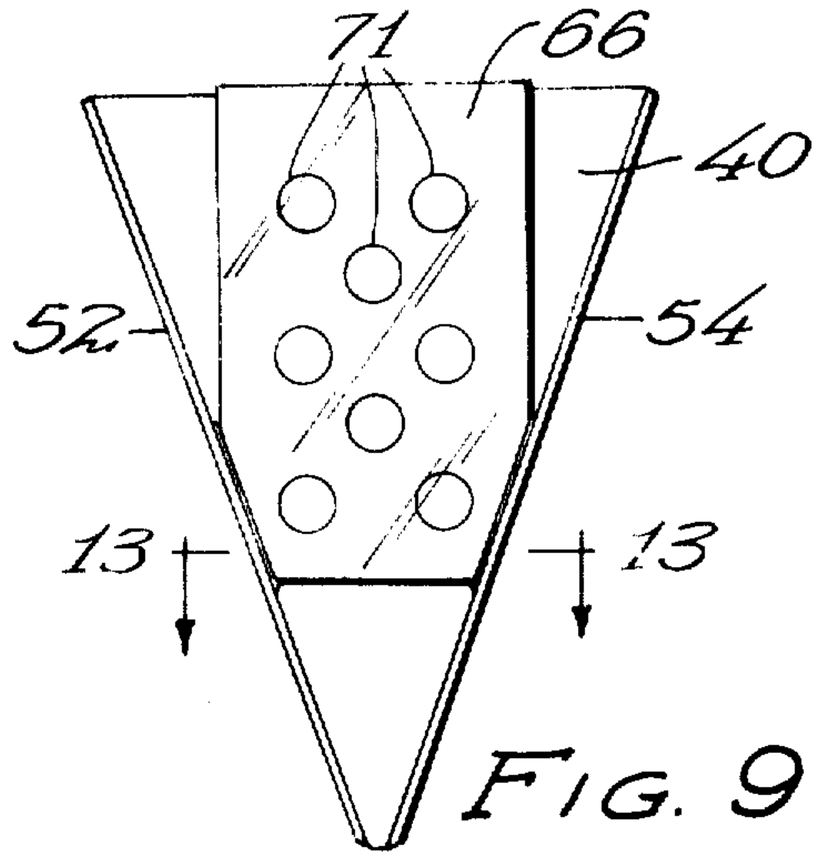

FIG. 9

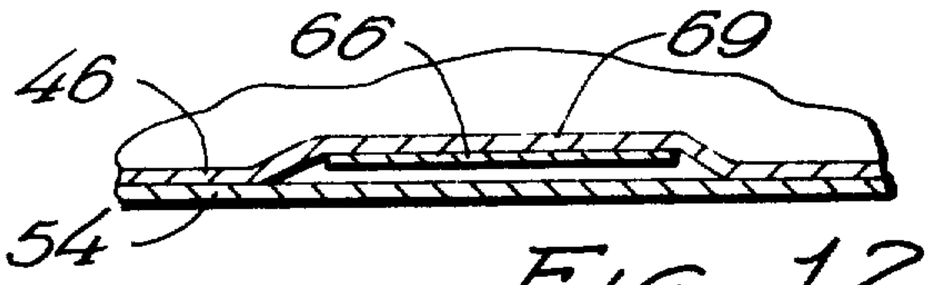

FIG. 12

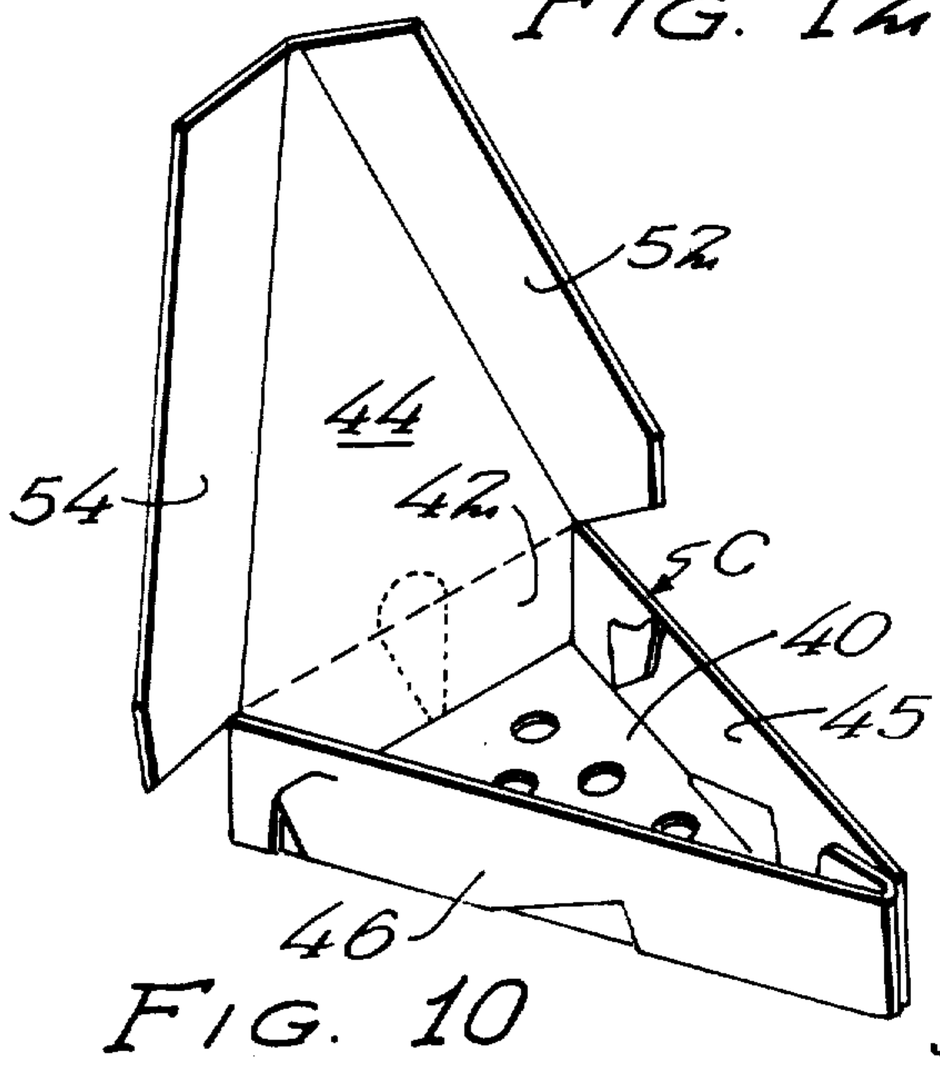

FIG. 10

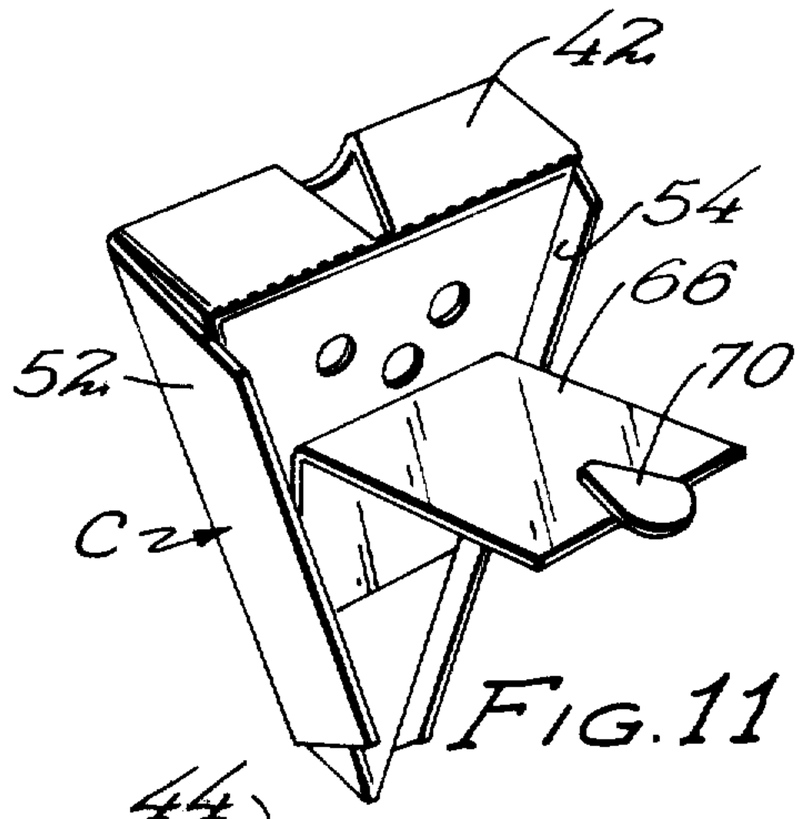

FIG. 11

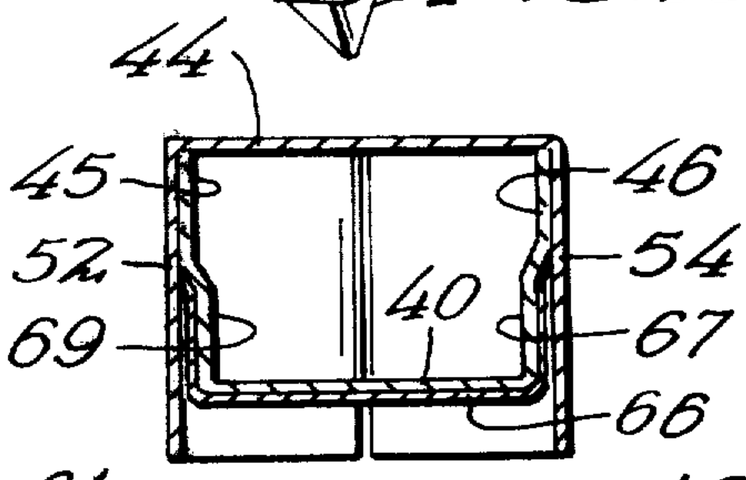

FIG. 13

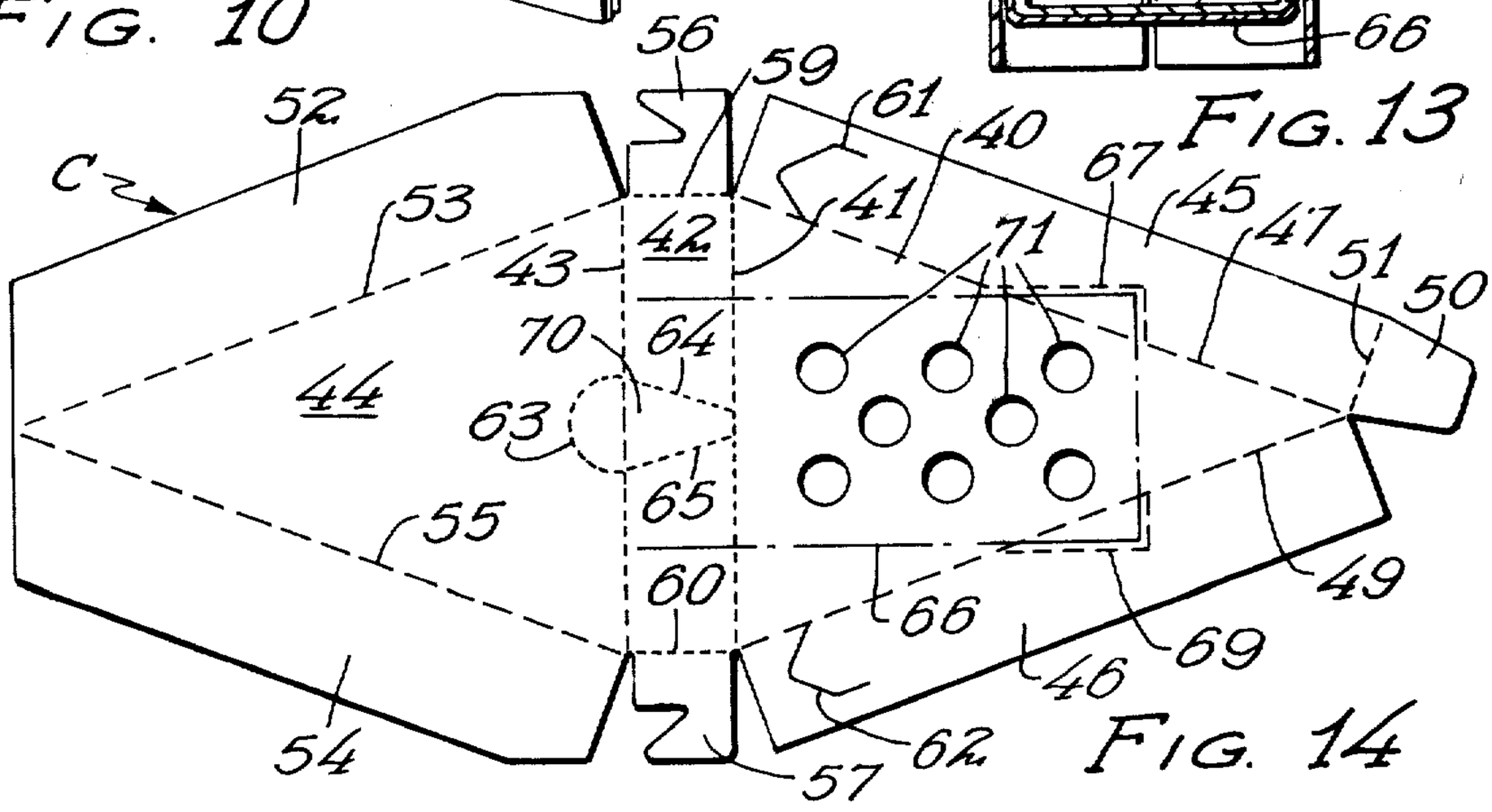

FIG. 14

WEDGE SHAPED CARTON

Matter enclosed in heavy brackets[ ]appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates the additions made by reissue.

This invention relates to an improvement in a carton for use in containing items to be heated such as a wedge shaped piece of pizza pie or the like.

BACKGROUND OF THE INVENTION

Various cartons have been provided for containing products such as frozen pizza pie. For the most part, these cartons comprise a disc of paper board on which the frozen pizza pie is positioned, and the product is over wrapped with a plastic film which is marginally secured to the underside of the disc. Under normal circumstances, the circular pizza is removed from the package, and rested upon a flat sheet in an oven while in its frozen state. It has now been proposed to cut the circular pizza pie into wedge shaped segments and to insert these segments into a generally triangularly shaped carton which may be heated in a very short period of time in a microwave oven or the like. Such ovens are readily available, and are often used in places of business to heat frozen sandwiches and the like.

One of the problems involved lies in the fact that the carton containing the product must be vented so that the moisture vapor escaping from the product during the heating process can escape. At the same time, however, the product must be sealed within the carton during storage and shipment to prevent it from becoming contaminated.

SUMMARY OF THE INVENTION

It is the object of the present invention to provide a carton for containing one or more wedges of pizza pie or the like which is provided with openings permitting the circulation of air through the carton during the heating process, and which will be effectively sealed prior to its use. This is accomplished by providing apertures through the carton, preferably in the bottom panel and in adjoining end wall panel. These apertures are normally covered by a strip of plastic film to protect the product from contamination. When the product is used, the plastic film is removed, opening the various apertures in the carton and permitting the circulation of heated air through the carton during the heating process.

A further feature of the present invention lies in the provision of a carton of the type described in which certain of the carton walls extend below the bottom panel of the carton. As a result, the apertured bottom panel is held in a slightly elevated position when the carton is rested upon a metal panel in the oven so that the apertures are not closed by the supporting panel.

A further feature of the present invention resides in the provision of a carton having a wall panel which is defined by weakened lines of separation which permit the panel to be removed for the dispensing of the product. After the product has been heated, it is only necessary to remove this panel and to slide the product from the carton in which it has been heated.

In view of the fact that the carton is of triangular form, and in view of the further fact that it is difficult to

shape the plastic film, two corners of the film normally overlap the side walls of the carton. It is necessary to secure these corners to the side walls so that the corners of the film will fold with the side walls during the formation of the carton. In order that these corners may not be held tightly between the inner and outer side walls, the portions of the side walls to which the film is attached are preferably embossed so that the film may be released to permit the film to be removed before the heating process is started.

These and other objects and novel features of the present invention will be more fully and clearly sent forth in the following specification and claims.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a perspective view of a carton, showing my construction.

FIG. **2** is a perspective view of the carton in partially opened position.

FIG. **3** is a perspective view of the carton before it is closed.

FIG. **4** is a sectional view, the position of the section being indicated by the line **4—4** of FIG. **1.**

FIG. **5** is a sectional view of the carton after the sealing strip has been removed.

FIG. **6** is a perspective view of the carton with the end wall partially removed for removal of the contents.

FIG. **7** is a diagrammatic view of the carton blank from which the carton is formed.

FIG. **8** is a perspective view of a modified form of carton.

FIG. **9** is a bottom plan view of the carton shown in FIG. **8.**

FIG. **10** is a perspective view of the carton before the contents have been inserted.

FIG. **11** is a perspective view of the carton shown in FIGS. **8** through **11** with the sealing strip partially removed.

FIG. **12** is a sectional view through a portion of the carton, the position of the section being indicated by the line **12—12** of FIG. **8.**

FIG. **13** is a sectional view through the carton, the position of the section being indicated by the line **13—13** of FIG. **9.**

FIG. **14** is a diagrammatic view of the blank from which the carton shown in FIGS. **8** through **13** is formed.

The carton illustrated in its blank form and identified by the letter A. The carton includes a triangular bottom panel **10,** an end wall panel **11** of rectangular shape, and a top wall panel **12** which is triangular and is of similar size and shape to the bottom panel **10.**

Inner side wall panels **13** and **14** are connected to the converging side edges of the triangular bottom panel **10** along fold lines **15** and **16.** A corner flap **17** is hingedly connected to one side wall such as **13** along a fold line **19.** The flap **17,** in the erected form of the carton, lies against the inner surface of the side wall **14** and may or not be adhered thereto.

Corner flaps **20** and **21** are connected to the ends of the end wall **11** along perforated lines **22** and **23** respectively. The fold line **24** which connects the end wall **11** to the bottm panel **10** is also preferably a weakened line of separation, as is also the fold line **25** connecting the end wall **11** to the top panel **12.** The corner flaps **20** and **21** are designed to overlap the side walls **13** and **14** respectively and may be anchored thereto if it is so desired. The top wall panel **12** is connected to

outer side wall panels **26** and **27** along converging fold lines **29** and **30** respectively. In the preferred form of construction, the side walls **26** and **27** are somewhat wider than the side walls **13** and **14,** and accordingly extend somewhat below the level of the bottom panel **10.** The purpose of this arrangement is to permit the bottom panel **10** to be supported somewhat above the level of a surface on which the carton is placed. In other words, when the carton is closed, the bottom panel is held somewhat above the level of the supporting surface so that air may circulate through the carton when the product is being heated.

The bottom panel **10** is provided with a series of apertures **31** extending there through, and another aperture such as **32** is normally provided in the end wall **11.** These apertures **31** and **32** normally closed by a strip **33** of plastic film or the like which is marginally secured to the bottom panel and to the end wall panel **11.** Thus during storage and shipment, the various holes through the carton are closed to prevent any possibility of contamination of the carton contents. The carton contents is indicated in general by the letter B and indicated in FIG. **5** of the drawings. In forming the carton A, the strip of film **33** is applied to the outer surface of the carton A and is secured in such a manner that it may be readily removed therefrom. As indicated in FIG. **1** of the drawings, the film **33** extends slightly above the level of the top panel **12** so that the end of the film may be grasped and pulled free. In view of the fact that the plastic film does not adhere with great tenacity to the paper board, the film will become rather readily removed in the manner indicated in FIG. **2** of the drawings. In order that the corners of the film **33** may be readily removed, generally triangular areas **34** of the side walls **13** and **14** are embossed so as to provide a sufficient space between the inner side walls **13** and **14,** and the outer side walls **26** and **27,** so that the corners of the member **33** will not be clamped securely between the inner side walls and the outer side walls.

When the strip **33** has been removed, the carton may be placed on a suitable support, usually in a microwave oven, and the frozen product may be heated in an extremely short period of time. In other words, the product may be served much in the same manner as a frozen sandwich or the like which is merely placed within the micro oven and heated. In view of the fact that many small restaurants and other eating places have micro ovens available, this is merely an added product which may be served. In view of the fact that the end wall panel **11** is surrounded by weakened lines of separation, this panel may be merely removed after the product has been heated to provide access to the carton contents.

FIGS. **8** through **14** of the drawings disclose a modified form of the construction. In this arrangement, the carton is substantially similar to that previously described, and is indicated in general by the letter C. The carton C includes a bottom panel **40** connected along a weakened line of separation **41** to an end wall panel **42.** This in turn is connected along a weakened line of separation **43** to a top panel **44.** The panels **40** and **44** are substantially indentical in size and shape and are triangular, the base edges of the triangle of each panel being secured to the end wall **42.** Side walls **45** and **46** are hingedly connected to the edges of the bottom wall panel **40** along fold lines **47** and **49** respectively. A corner flap **50** is hingedly connected to an edge of the side wall panel **45** along a fold line **51** and is foldable

inwardly of the side wall panel **46** when the carton is erected. A side wall panel which comprises an outer side wall is hingedly connected to the top panel **44** along a fold line **53,** and a second side wall **54** is hingedly connected to the other converging edge of the top panel **44** along a fold line **55.** The panels **52** and **54** are preferably somewhat wider than the panels **45** and **46,** and accordingly extend below the level of the bottom panel **40** when the carton is erected.

Locking tabs **56** and **57** are connected to the ends of the end wall **42** along weakened lines of separation **59** and **60** respectively. The locking tabs **56** and **57** are designed to interlock into slots **61** and **62** in the side walls **45** and **46.** Alternatively, the corner flaps **56** and **57** may be secured in any other suitable manner to the side walls **45** and **46.**

A substantially semi-circular weakened line of separation **63** is provided in the center portion of the top wall **44,** and communicates with weakened lines of separation **64** and **65** which extend across the end wall **42** in converging relation providing a removable area in the end wall. A strip of film such as plastic sheet film **66** is marginally secured to the bottom panel **40** and to the end wall **42.** The corners of the rectangular sheet of film **66** normally extend into embossed areas **67** and **69** in the side walls **45** and **46** so that the corners of the film will not be clamped between the inner side walls **45** and **46** and the outer side walls **52** and **54** when the carton is erected. The film **66** is secured to the removable area **70** between the weakened lines of separation **64** and **65.**

The carton is set up much in the manner previously described. The side walls **45** and **46** are secured in right angular relation to the end wall **42** as indicated in FIG. **10** of the drawings. The contents are inserted into the carton while in the position indicated in FIG. **10,** and the cover **44** is then folded downwardly, the side walls **52** and **54** being adhered or heat sealed to the side walls **45** and **46** to hold the carton closed.

When the carton and its contents are to be heated, the generally semi-circular portion within the weakened line of separation **63** is pressed downwardly, and the removable area **70** of the end wall is pulled outwardly, removing the film **66** from the end wall **42** and bottom wall **40.** The removal of the film **66** exposes the apertures **71** in the bottom panel **40** and the carton is placed upon a flat surface in a heating chamber such as an oven in which the product is heated. The remaining portions of the end wall **42** are then removed by pulling them outwardly so that the contents may be slid from the carton and consumed.

In accordance with the Patents Statutes, I have described the principles of construction and operation of my improvement in Wedge Shaped Carton and while I have endeavored to set forth the best embodiment thereof, I desire to have it understood that obvious changes may be made within the scope of the following claims without departing from the spirit of my invention.

I claim:

[1. A generally triangular carton for use in containing a wedge-shaped piece of pizza or the like including:

a generally triangular bottom panel having a base edge and converging side edges,

a generally rectangular end wall hingedly connected to the base edge of said bottom panel and extending upwardly therefrom,

a generally triangular top panel hingedly connected to the upper edge of said end wall, said top panel being substantially identical in size and shape to said bottom panel, and extending parallel to said bottom panel,

inner side wall panels secured to the converging edges of said bottom panel and extending upwardly therefrom,

outer side wall panels secured to the converging edges of said top panel and extending downwardly therefrom outwardly of said inner side wall panels,

means securing said inner and outer side wall panels in face contact,

corner flaps connecting the converging ends of side walls, and connecting the ends of said end wall to said side walls,

said bottom panel having a series of spaced apertures therethrough,

a strip of film secured to the under surface of said bottom panel and upwardly along said end wall panel, said strip closing said apertures,

the strip of film being secured in a manner to be readily detachable to expose said apertures.]

[2. The structure of claim 1 and in which said outer side walls extend below the plane of said bottom panel to support said bottom panel in spaced relation to a surface upon which said carton is placed.]

[3. The structure of claim 1 and in which said end wall is defined by weakened lines of contact.]

[4. The structure of claim 1 and in which said end of said strip of film extends beyond the surface of said top panel.]

[5. The structure of claim 1 and in which said top panel includes a detachable area adjoining said base edge thereof, and including a pair of weakened lines of separation extending downwardly from the edges of said detachable area between which said film strip is secured.]

[6. A carton including:

a bottom panel,

first side walls hinged to the edges of said bottom panel and extending upwardly therefrom,

a top panel hingedly secured along one edge to one of said side walls and extending substantially parallel to said bottom panel, said top panel being substantially identical in size and shape to said bottom panel,

second side walls hingedly secured to the remaining edges of said top panel and extending downwardly therefrom and secured in face contact with said first side walls,

said bottom panel having a series of spaced apertures extending therethrough,

a strip of film secured to the under surface of said bottom panel and extending upwardly outwardly of one of said side walls,

said film closing said aperture and being secured in a manner to be readily detachable to expose said apertures.]

[7. The structure of claim 6 and in which said second side walls lie outwardly of said first side walls and extend below the plane of said bottom panel to support said bottom panel in spaced relation to a surface upon which said carton is placed.]

[8. The structure of claim 6 and in which said one side wall is defined by weakened lines of separation.]

[9. The structure of claim 6 and in which an end of said film extends above the surface of said top panel.]

[10. The structure of claim 6 and in which said top panel includes a detachable area adjoining said one side wall, and including a pair of weakened lines of separation extending downwardly from the edges of said detachable area in said one side wall between which said film strip is secured.]

11. A generally triangular carton for use in containing a wedge-shaped piece of pizza or the like including:

a generally triangular bottom panel having a base edge and converging side edges,

a generally rectangular end wall hingedly connected to the base edge of said bottom panel and extending upwardly therefrom,

a generally triangular top panel hingedly connected to the upper edge of said end wall, said top panel being substantially identical in size and shape to said bottom panel, and extending parallel to said bottom panel,

inner side wall panels secured to the converging edges of said bottom panel and extending upwardly therefrom,

outer side wall panels secured to the converging edges of said top panel and extending downwardly therefrom outwardly of said inner side wall panels,

means securing said inner and outer side wall panels in face contact,

corner flaps connecting the converging ends of side walls, and connecting the ends of said end wall to said side walls,

said bottom panel having a series of spaced apertures therethrough,

a strip of film secured to the under surface of said bottom panel,

the strip of film being secured in a manner to be readily detachable to expose said apertures.

12. The structure of claim 11 and in which said outer side walls extend below the plane of said bottom panel to support said bottom panel in spaced relation to a surface upon which said carton is placed.

13. The structure of claim 11 and in which said end wall is defined by weakened lines of contact.

14. The structure of claim 11, wherein said strip of film extends upwardly along said end wall panel, said strip closing said apertures.

15. The structure of claim 14 and in which said end of said strip of film extends beyond the surface of said top panel.

16. The structure of claim 14 and in which said top panel includes a detachable area adjoining said base edge thereof, and including a pair of weakened lines of separation extending downwardly from the edges of said detachable area between which said film strip is secured.

17. A carton including:

a bottom panel,

first side walls hinged to the edges of said bottom panel and extending upwardly therefrom,

a top panel hingedly secured along one edge to one of said side walls and extending substantially parallel to said bottom panel, said top panel being substantially identical in size and shape to said bottom panel,

second side walls hingedly secured to the remaining edges of said top panel and extending downwardly therefrom and secured in face contact with said first side walls,

said bottom panel having a series of spaced apertures extending therethrough,

a strip of film secured to the under surface of said bottom panel,

said film closing said aperture and being secured in a manner to be readily detachable to expose said apertures.

18. The structure of claim 17 and in which said second side walls lie outwardly of said first side walls and extend below the plane of said bottom panel to support said bottom panel in spaced relation to a surface upon which said carton is placed.

19. The structure of claim 17 and in which said one side wall is defined by weakened lines of separation.

20. The structure of claim 17, wherein said strip of film extends upwardly outwardly of one of said side walls.

21. The structure of claim 20 and in which an end of said film extends above the surface of said top panel.

22. The structure of claim 20 and in which said top panel includes a detachable area adjoining said one side wall, and including a pair of weakened lines of separation extending downwardly from the edges of said detachable area in said one side wall between which said film strip is secured.

* * * * *