



(11) **EP 1 799 567 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention
of the grant of the patent:
07.10.2009 Bulletin 2009/41

(21) Application number: **05791559.7**

(22) Date of filing: **18.08.2005**

(51) Int Cl.:
B65D 5/66 (2006.01) **B65D 85/36** (2006.01)

(86) International application number:
PCT/US2005/029489

(87) International publication number:
WO 2006/023692 (02.03.2006 Gazette 2006/09)

(54) **PIZZA BOX**

PIZZA-SCHACHTEL

CARTON A PIZZA

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI
SK TR**

(30) Priority: **19.08.2004 US 602991 P**

(43) Date of publication of application:
27.06.2007 Bulletin 2007/26

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Description

FIELD OF THE INVENTION

[0001] The present invention relates generally to containers for storing and handling product, and more particularly to containers made from a corrugated paperboard blank for retaining, transporting and serving food, especially pizza.

BACKGROUND OF THE INVENTION

[0002] Pizza businesses make and sell millions of hot pizzas for delivery and carryout. The success of these businesses depends to an extent on the cost and functionality of the folded boxes utilized in packaging the pizza product. Ideally, it is recognized that these boxes should be inexpensive, easy to use, stackable, rigid, and crush-resistant.

[0003] Some prior art boxes employ inward-slanting wall constructions in an effort to conserve manufacturing costs, or rely on foldable blanks capable of being manufactured in nested and inverted configuration in order to achieve a minimum of material consumption and to attain maximum stacking strength. Certain cartons employ various rigid cover structures and avoid the use of any tabs projecting above their cover structure so as to allow stacking of multiple cartons one on top of the other. The top and bottom surfaces of these boxes are generally flat and smooth, whereby they tend to slide on top of one another when stacked.

[0004] The construction of prior art folded pizza boxes requires several steps in their use. These steps include pre-erecting the boxes, stacking empty pre-erected boxes on a shelf, removing a pre-erected box from the shelf and opening the pre-erected box, removing a pizza from an oven and placing it on a counter surface for cutting, and after cutting the pizza transferring it from the counter surface to the opened box, and then re-closing the box.

[0005] Conventional pizza boxes have a large one-piece lid that pivots from one side between open and closed positions. This large lid interferes with adjoining structures and makes it awkward to gain access to the pizza. US 2001/0032874 shows a pizza box in line with the present of claim 1.

[0006] Several drawbacks are inherently unavoidable in using the prior art boxes to package pizza. For example, previous box designs require a substantial amount of labor to pre-erect the boxes, place a pizza on a surface to cut it, transfer the cut pizza to the box, and re-close the box. This extra handling of the pizza also results in increased risk of contamination of the pizza. Moreover, the pizza starts cooling during the cutting process, which is undesirable to the consumer. Additionally, the construction of conventional pizza boxes makes it difficult for the consumer to serve the pizza from the box, or to cut the pizza while it is in the box.

[0007] It should also be appreciated that once a pizza

is boxed, it is important to let the moisture out of the carton to prevent soggy pizza. Prior art pizza cartons generally accomplish this task by venting the carton through seams or gaps between the end walls or sidewalls and the cover structure, or through other vent holes formed in the carton surface.

[0008] Mindful of such prior art structures and their use, there is a need for a pizza box that meets the strength and ventilation requirements and uses a minimum amount of material in its construction, is easy to erect, requires minimal handling of the pizza at the food preparation site, and enables the consumer to easily gain access to and serve pizza from the box, and/or to cut the pizza while it is in the box.

SUMMARY OF THE INVENTION

[0009] The box of the invention is inexpensive, meets the strength and ventilation requirements of pizza boxes, uses a minimum amount of material in its construction, is easy to erect, requires minimal handling of the pizza at the food preparation site, and enables the consumer to easily gain access to and serve pizza from the box, and/or to cut the pizza while it is in the box.

[0010] The pizza box of the present invention is formed from a paperboard blank that may be left flat at the food preparation site, and upon which a pizza may be placed directly from the oven so that it can be cut on the flattened box, after which the box can be closed. This eliminates steps in the handling of the pizza, reduces the risk of contamination, and minimizes cooling of the pizza. It also speeds the process of preparing and packaging the pizza.

[0011] The present invention provides a pizza box according to claim 1 of the appended claims.

[0012] The invention improves the crush strength of the lid

[0013] A blank is supplied flat to the food preparer, who stores it flat until it is needed. The flat blank is then retrieved from a stack of the flat blanks and laid on a counter or other surface, and a cooked pizza is moved from the oven directly onto the flat blank. The pizza may then be cut while it is resting on the bottom panel of the blank. After the pizza is cut, the end walls are folded upwardly to an approximately vertical orientation, and the side walls are then folded up and the lid panels are folded inwardly and down over the top of the box, engaging the detents to hold the box in erected position.

[0014] In a preferred construction, opposite end edges of the end wall panels are inwardly inclined, whereby when the side wall panels are folded upwardly against these end edges they are slightly inwardly inclined. This reduces the size of the blank and also ensures that the pizza is tightly contained within the box.

[0015] The blank size for the various forms of the box of the invention is 2% to 15% smaller than the blank size of conventional boxes.

[0016] Because the box of the invention can be folded

from its blank with the pizza in place, it enables the worker to place the pizza directly on the box after baking. This eliminates the extra steps of placing the pizza on the counter or cutting surface and re-scooping the cut pizza to place it into a pre-erected box. In other words, the pizza can be placed directly onto the flat blank for cutting, followed by folding of the box. This reduces the amount of labor and increases the speed of packaging the pizza. It also reduces heat loss and possible contamination that occurs when the pizza is placed on a separate cutting surface.

[0017] The box of the invention is also more convenient to use by consumers, since the full size top panel found on conventional boxes has been split in half, making it easier to gain access to and serve pizza from the box. Additionally, in the serving form the box lies flat and this aids in the folding of the box for disposal. Conventional pizza boxes must be broken down for disposal.

BRIEF DESCRIPTION OF THE DRAWINGS

[0018] The foregoing, as well as other objects and advantages of the invention, will become apparent from the following detailed description when taken in conjunction with the accompanying drawings, wherein like reference characters designate like parts throughout the several views, and wherein:

[0019] Fig. 1 is a top perspective view of a first embodiment of the pizza box according to the invention,

[0020] Fig. 2 is a top plan view of a blank for making the box of figure 1.

[0021] Fig. 3 is a top perspective view of the box of figure 1, shown with the lid panels open.

[0022] Fig. 4 is a top perspective view of a plurality of the boxes of figure 1 in stacked relationship.

DETAILED DESCRIPTION OF THE INVENTION

[0023] The first embodiment of the box of the invention is indicated at 10 in figures 1-4. This box comprises a bottom wall 11 with opposed end walls 12 and 13 foldably connected to opposite ends thereof, opposed side walls 14 and 15 foldably connected to opposite sides thereof, and partial lid panels 16 and 17 foldably connected to the respective side walls.

[0024] Locking tabs 18, 19 and 20, 21 project laterally outwardly from respective opposite side edges of each lid panel, and have outwardly divergent opposite side edges 22 and a rounded outer end 23. A pair of spaced apart, parallel cuts 24 and 25 extend a short distance into the respective lid panels from approximately the center of each locking tab, perpendicular to the side edges of the lid panels, and a transverse cut 26 connects the cuts 24 and 25 at their outer ends, forming a short bendable tab 27 lying in the plane of the respective lid panel at each locking tab, with the free end of the tabs spaced slightly outwardly of the associated lid panel side edge.

[0025] Raised projections 28 and 29 extend upwardly from the top edge of each end wall 12 and 13 in positions to be in aligned registry with the locking tabs when the lid panels are in closed position. Shaped slots 30 and 31 are formed through the projections approximately in line with the height of the top edge of the respective end wall, and a short latching tab 32 projects downwardly from the top center of each slot.

[0026] The free outer edge of each lid panel is stepped or offset at its center, defining a wider leading edge 33 and a recessed edge 34, said edges being connected by an angled shoulder 35.

[0027] To erect the box of figure 1, the opposite side walls 13 and 14 are first folded upwardly, followed by inward folding of the lid panels and interengagement of the angled shoulders 35, whereby the leading edge of one lid panel overlaps the recessed edge of the other. This holds the lid panels in place until the end walls can be erected, and serves to reinforce the lid against collapse when a force is applied on top of it. The end walls 11 and 12 are then folded upwardly, with the locking tabs 18, 19 and 20, 21 being inserted through the slots 30 and 31. As the tabs 18, 19 and 20, 21 are being inserted through the slots, the latching tabs 32 slide along the top of the bendable tabs 27, causing them to flex downwardly until the latching tab passes the free end of the bendable tab, at which time the bendable tab springs back up, latching behind the latching tab 32. This arrangement securely holds the box in its erected position until it is desired to open it, at which time slight downward pressure can be exerted on top of the lid panels just behind the projections 28 and 29, thereby releasing the latching tabs and enabling the end walls 13 and 14 to be folded downwardly and the lid panels opened.

[0028] The overlapped and interlocked free outer edges of the lid panels, and the secure engagement of the locking tabs in the slots formed in the end walls results in increased strength and resistance-to collapse of the lid when a force is exerted on it.

[0029] It will be noted that the opposite side edges 35 and 36 of the end walls are upwardly convergent or angled inwardly. Thus, the side walls will be inwardly inclined when are folded upwardly against these angled edges. This arrangement permits less material to be used in the construction of the box and also more closely constrains the pizza or other product placed in the box.

[0030] Additionally, the opposite end edges 37 and 38 of the side walls are slightly outwardly divergent or outwardly angled, whereby the end walls are outwardly inclined and the top of the box has a slightly greater length dimension than the bottom, enabling the bottom of an upper box to fit between the projections 28 and 29 of a lower box so that the boxes can be more stably stacked than conventional boxes.

[0031] Further, it will be noted that the projections 28 and 29 and the associated slots 30 and 31 on one end wall are offset relative to the projections and slots on the opposite end wall. Similarly, the locking tabs 18, 19 and

20, 21 on the respective lid panels are correspondingly offset. Thus, in the manufacture of the blank, the locking tabs on one blank can be cut from the edge of an adjacent blank, as depicted with a different blank in figure 12, resulting in a saving in material.

[0032] A box embodying the present invention is formed from a blank typically constructed of corrugated paperboard but may otherwise be fabricated of other suitable foldable materials. The intended use for this carton is for the retention, storage and serving of pizza. However, it should be understood that the invention is not restricted in use and may have broader applications for containment of other articles.

[0033] In use, an article such as a pizza taken directly from an oven, is positioned and cut upon the bottom panel of the box while the box remains flat on a supporting surface. The flat orientation of the box facilitates cutting of the pizza without damage to or interference from its end and side walls, it being understood that the bottom panel and box are sized to accommodate the pizza. Once the box has been closed around the pizza, it is ready for delivery to or pick up by a customer. The box can be used by the customer to serve the pizza, either by opening both lid panels, or by opening a single lid panel, or by laying the box completely flat.

[0034] The lid panels interlock with the end walls and overlap one another to reinforce each other and provide strength to the top of the box. It should be appreciated that when boxing hot pizza, it is important to let moisture escape from the box to prevent a soggy product. While some moisture is released by the seams or gaps between the inside surfaces of the walls and the lateral edges of the lid panels, the lower portions of the tab-receiving openings are sized and shaped to further allow for venting of the moisture. With this design, the box is able to retain sufficient heat to keep the pizza at a desirable temperature while preventing condensation from forming thereon.

[0035] From the foregoing, it should be understood that the preferred use of the blank facilitates a highly efficient and economic food packaging operation in comparison with prior art pizza packaging. Use of the present invention eliminates the prior art handling steps of pre-erecting a box, stacking multiple pre-erected boxes on a shelf, removing a pre-erected box from the shelf, opening the pre-erected box, placing the pizza on a counter surface for cutting after removing it from the oven, moving the cut pizza (which may have since cooled) to the open box and then re-closing the box. In addition, loading the pizza directly from the oven reduces labor costs, speed packaging, and prevents potential contamination of the pizza from the counter surface.

[0036] While the invention has been described with reference to preferred embodiment, those skilled in the art will appreciate that certain substitutions, alterations and omissions may be made without departing from the scope thereof. Accordingly, the foregoing description is meant to be exemplary only and should not be deemed

limitative on the scope of the invention set forth in the following claims

5 Claims

1. A pizza box (10) having length and width dimensions and comprising:

10 a substantially flat and rectangular bottom panel (11) having opposite end edges and opposite side edges;
 a pair of opposed end panels (12,13) foldably connected to opposite end edges of the bottom pane (11);
 15 a pair of opposed side panels (14,15) foldably connected to opposite side edges of the bottom pane (11),
 a lid panel (16,17) foldably connected at one edge to each of said side panels (14,15) and having an opposite free edge (33,34), said lid panels (16,17) each having a width substantially less than the width of the box (10) but wide enough to overlap at their free edges (33,34) when the lid panels (16,17) are in closed position; and **characterized by**
 20 cooperating detent means on the lid panels and end panels to lock the lid panels in closed position, wherein said detent means comprises projections (28,29) on an upper edge of each end panel (12,13), said projections extending above the lid panels (16,17) when the lid panels are in their closed position;
 25 slots (30,31) formed in the projections (28,29) substantially coplanar with the lid panels (16,17); and
 30 laterally projecting locking tabs (18,19,20,21) projecting outwardly from opposite side edges of the lid panels (16,17) in positions to extend through the slots (30,31),
 35 wherein a latching tab (32) projects into each slot (30,31); and
 a bendable tab (27) is formed in an adjacent edge of each lid panel (16,17) in position to cooperate with the latching tab (32) to latch the lid panels (16,17) closed.

2. A pizza box as claimed in claim 1, wherein:

40 the free edge (33,34) of each lid panel is stepped or offset at its center, defining a wider leading edge (33) and a recessed edge (34), said edges being connected by an angled shoulder (35) and arranged so that the wider leading edge (33) of one lid panel (16) is opposed to the recessed edge (34) of the opposite lid panel (17) and said angled shoulders (35) are in substantial alignment with one another; and

the leading edge (33) of one lid panel (16) overlaps with the recessed edge (34) of the opposite lid panel (17) when the lid panels are in closed position.

3. A pizza box as claimed in claim 1, wherein:

opposite side edges of the end panels (12,13) angle inwardly toward an upper edge thereof; and
the side panels (14,15) are inwardly inclined toward an upper edge thereof.

4. A pizza box as claimed in claim 1, wherein:

the dimensions of the bottom panel (11) are such that the bottom of an upper box fits between the projections (28,29) of a lower box when the boxes are stacked on top of one another.

Patentansprüche

1. Pizzaschachtel (10) mit Längen- und Breitendimensionen und umfassend:

eine im Wesentlichen flache und rechteckige Bodenfläche (11), die gegenüberliegende Endkanten und gegenüberliegende Seitenkanten aufweist;

ein Paar gegenüberliegender Endflächen (12, 13), die mit gegenüberliegenden Endkanten der Bodenfläche (11) faltbar verbunden sind;

ein Paar gegenüberliegender Seitenflächen (14, 15), die mit gegenüberliegenden Seitenkanten der Bodenfläche (11) faltbar verbunden sind;

eine Deckelfläche (16, 17), die an einer Kante mit jeder der Seitenflächen (14, 15) faltbar verbunden ist und eine gegenüberliegende freie Kante (33, 34) aufweist, wobei die Deckelflächen (16, 17) jeweils eine Breite besitzen, die im Wesentlichen geringer ist als die Breite der Schachtel (10), die aber groß genug ist, damit sie sich an ihren freien Kanten (33, 34) überlappen, wenn die Deckelflächen (16, 17) in geschlossener Position sind; und **gekennzeichnet durch**

zusammenwirkende Arretierungsmittel an den Deckelflächen und Endflächen, um die Deckelflächen in geschlossener Position zu arretieren, wobei die Arretierungsmittel umfassen Vorsprünge (28, 29) auf einer Oberkante jeder Endfläche (12, 13), wobei sich die Vorsprünge oberhalb der Deckelflächen (16, 17) erstrecken, wenn sich die Deckelflächen in ihrer geschlossenen Position befinden; in den Vorsprüngen (28, 29) geformte Schlitz-

(30, 31), die im Wesentlichen in der selben Ebene wie die Deckelflächen (16, 17) liegen; und seitlich vorragende Verschlusslaschen (18, 19, 20, 21), die aus gegenüberliegenden Seitenkanten der Deckelflächen (16, 17) in Positionen nach außen ragen, um sich **durch** die Schlitz- (30, 31) zu erstrecken, wobei eine Verriegelungs- lasche (32) in jeden Schlitz (30, 31) ragt; und eine biegsame Lasche (27) in einer benachbarten Kante jeder Deckelfläche (16, 17) in einer Position geformt ist, um mit der Verriegelungs- lasche (32) zusammenzuwirken zwecks Verriegelns der geschlossenen Deckelflächen (16, 17).

2. Pizzaschachtel nach Anspruch 1, wobei:

die freie Kante (33, 34) jeder Deckelfläche in ihrer Mitte abgestuft oder versetzt ist, wobei eine breitere vordere Kante (33) und eine zurückgesetzte Kante (34) festgelegt sind, wobei die Kanten durch ein gewinkeltes Schulterteil (35) verbunden und so angeordnet sind, dass sich die breitere vordere Kante (33) der einen Deckelfläche (16) gegenüber der zurückgesetzten Kante (34) der gegenüberliegenden Deckelfläche (17) befindet und die gewinkelten Schulterteile (35) im Wesentlichen in einer Linie miteinander sind; und

die vordere Kante (33) der einen Deckelfläche (16) sich mit der zurückgesetzten Kante (34) der gegenüberliegenden Deckelfläche (17) überlappt, wenn sich die Deckelflächen in geschlossener Position befinden.

3. Pizzaschachtel nach Anspruch 1, wobei:

sich gegenüberliegende Seitenkanten der Endflächen (12, 13) in Richtung einer Oberkante derselben nach innen winkeln; und die Seitenflächen (14, 15) in Richtung einer Oberkante derselben nach innen geneigt sind.

4. Pizzaschachtel nach Anspruch 1, wobei:

die Dimensionen der Bodenfläche (11) so sind, dass die Unterseite einer oberen Schachtel zwischen die Vorsprünge (28, 29) einer unteren Schachtel passt, wenn die Schachteln aufeinander gestapelt sind.

Revendications

1. Carton à pizza (10) dimensionné en longueur et en largeur et comprenant :

un panneau de fond (11) essentiellement plat et rectangulaire présentant des bords d'extrémité opposés et des bords latéraux opposés ;
 une paire de panneaux d'extrémité (12, 13) opposés raccordés de manière pliable aux bords d'extrémité opposés du panneau de fond (11) ;
 une paire de panneaux latéraux (14, 15) opposés raccordés de manière pliable aux bords latéraux opposés du panneau de fond (11) ;
 un panneau formant couvercle (16, 17) raccordé de manière pliable, au niveau d'un bord, à chacun desdits panneaux latéraux (14, 15) et présentant un bord libre (33, 34) opposé, lesdits panneaux formant couvercle (16, 17) ayant chacun une largeur essentiellement inférieure à la largeur du carton (10) mais étant suffisamment larges pour se chevaucher au niveau de leurs bords libres (33, 34) lorsque les panneaux formant couvercle (16, 17) sont en position fermée ; et **caractérisé par**
 des moyens d'encliquetage coopérants prévus sur les panneaux formant couvercle et les panneaux d'extrémité de sorte à verrouiller les panneaux formant couvercle en position fermée, lesdits moyens d'encliquetage comprenant :

des saillies (28, 29) prévues sur un bord supérieur de chacun des panneaux d'extrémité (12, 13), lesdites saillies surplombant les panneaux formant couvercle (16, 17) lorsque les panneaux formant couvercle sont en position fermée ;
 des rainures (30, 31) pratiquées dans les saillies (28, 29) de manière essentiellement coplanaire par rapport aux panneaux formant couvercle (16, 17) ; et
 des languettes de blocage (18, 19, 20, 21) à prolongement latéral, dirigées vers l'extérieur à partir des bords latéraux opposés des panneaux formant couvercle (16, 17) et disposées de manière à pouvoir traverser les rainures (30, 31) ;
 une patte d'accrochage (32) se prolongeant dans chaque rainure (30, 31) ; et
 une languette souple (22) étant formée dans un bord adjacent de chacun des panneaux formant couvercle (16, 17) en un emplacement lui permettant de coopérer avec la patte d'accrochage (32) pour garantir la fermeture des panneaux formant couvercle (16, 17).

2. Carton à pizza selon la revendication 1, dans lequel :

le bord libre (33, 34) de chacun des panneaux formant couvercle présente un gradin ou un décalage en son centre, définissant ainsi un bord avancé (33) plus large et un bord en retrait (34),

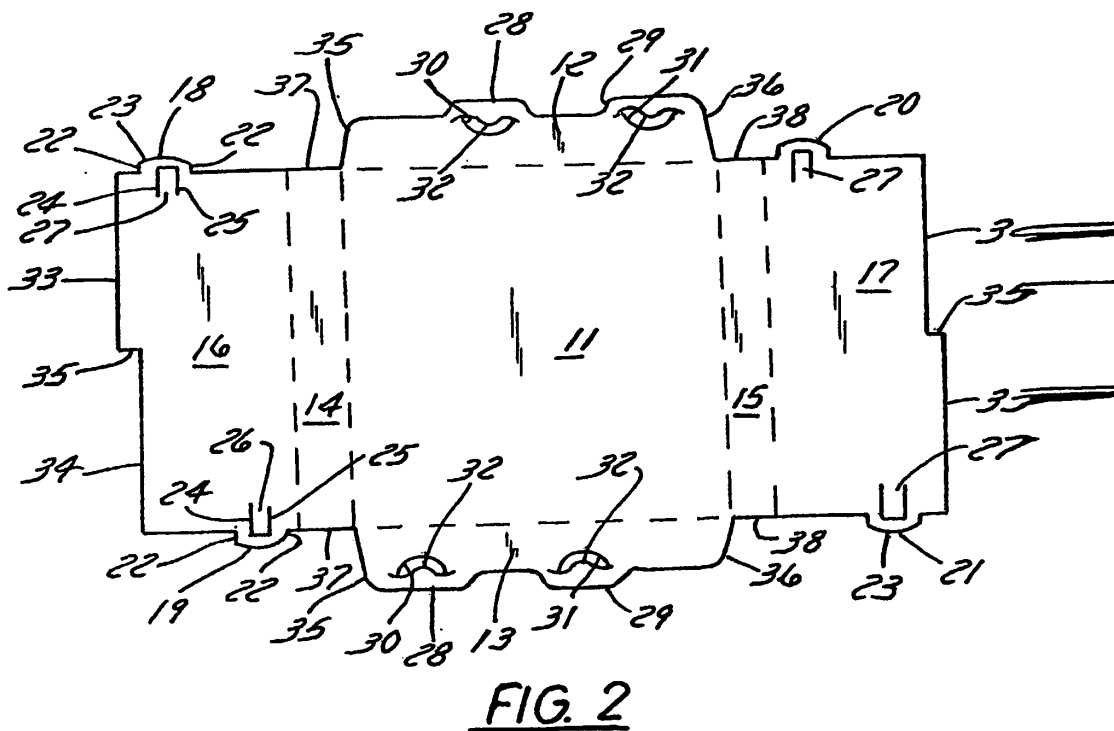
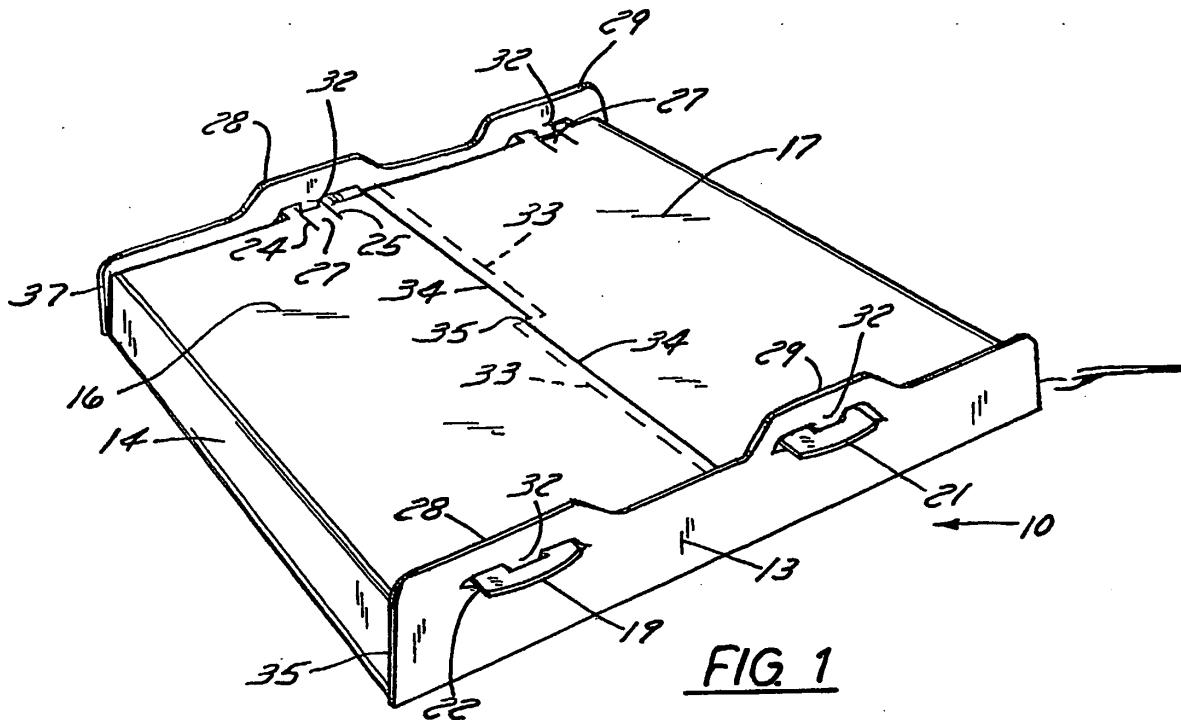
lesdits bords étant reliés par un épaulement (35) coudé qui est agencé de sorte que le bord avancé (33) plus large appartenant audit un panneau formant couvercle (16) soit opposé au bord en retrait (34) appartenant au panneau formant couvercle (17) opposé et lesdits épaulements (35) coudés étant essentiellement alignés l'un avec l'autre ; et
 le bord avancé (33) dudit un panneau formant couvercle (16) chevauche le bord en retrait (34) du panneau formant couvercle (17) opposé lorsque les panneaux formant couvercle sont en position fermée.

3. Carton à pizza selon la revendication 1, dans lequel :

les bords latéraux opposés des panneaux d'extrémité (12, 13) forment un angle dirigé vers l'intérieur vers leur bord supérieur respectif ; et
 les panneaux latéraux (14, 15) sont inclinés vers l'intérieur vers leur bord supérieur respectif.

4. Carton à pizza selon la revendication 1, dans lequel :

les dimensions du panneau de fond (11) sont telles que le fond d'un carton supérieur loge entre les saillies (28, 29) d'un carton inférieur lorsque les cartons sont empilés les uns sur les autres.



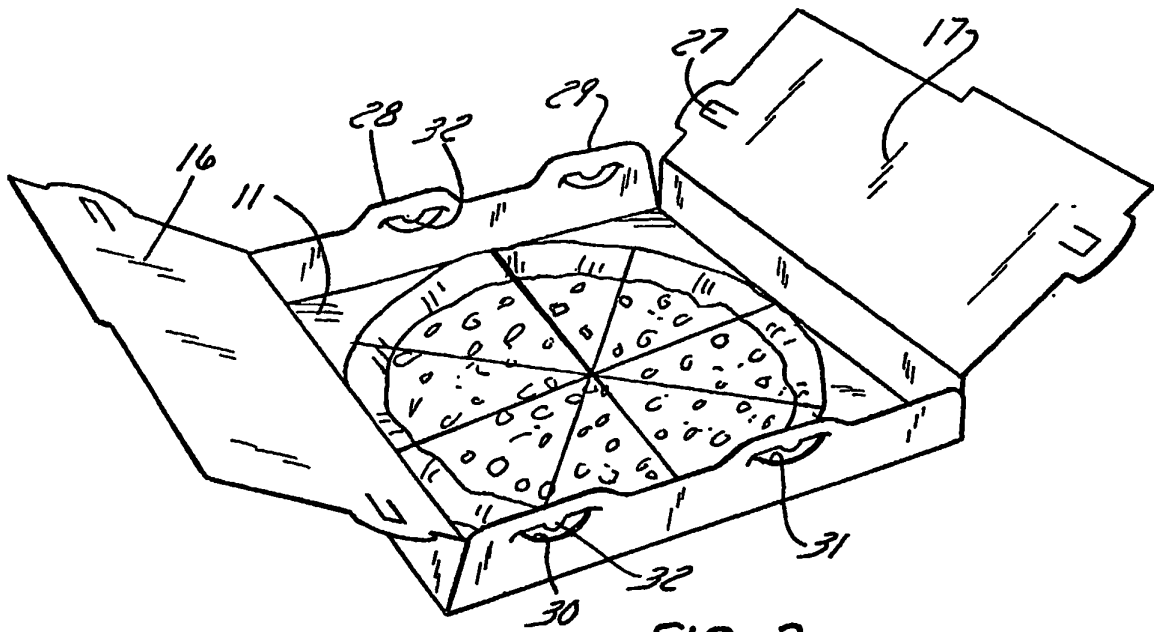


FIG. 3

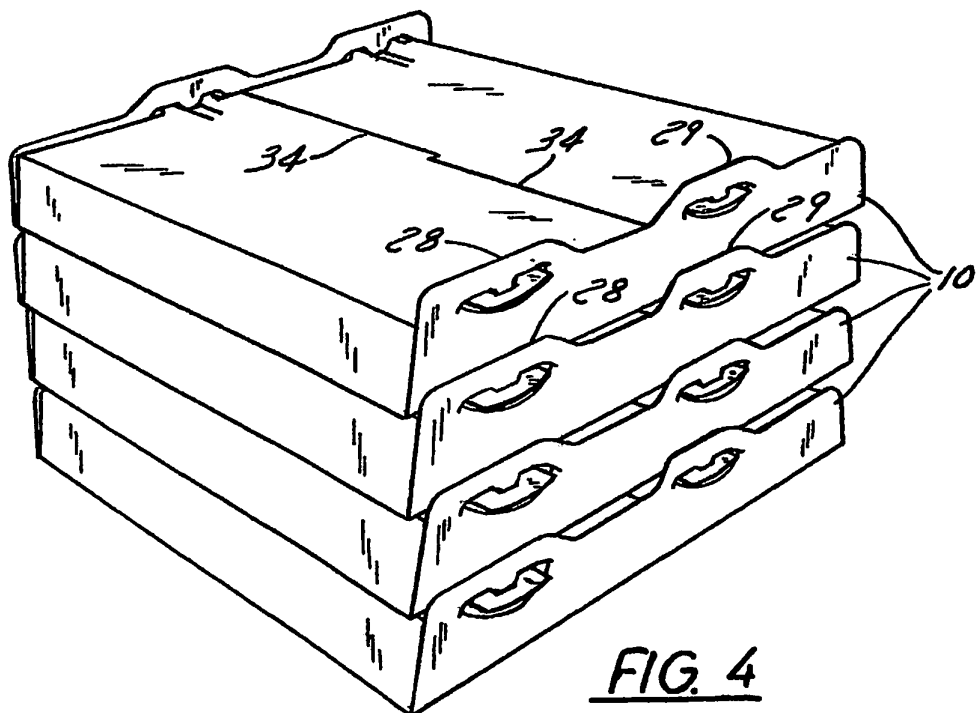


FIG. 4

REFERENCES CITED IN THE DESCRIPTION

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