Categorisation Analysis Case Study

22-02-2022 Start time 14:45 End time 17:45

INSTRUCTIONS

This exam part has only one case study. There is no choice of subjects. Download all 6 documents D1-D6 as well as the answer template provided (in Microsoft Word or in Microsoft Excel format).

It is important to explain why you select documents as relevant or not relevant. Conclusive legal statements on the outcome of your analysis of the documents are to be avoided (for example, "the proposed product is not novel or is obvious in light of D1" or "the product infringes claim 1 of D3") .

After you have read the case study, please click on the **START** button at the bottom of that page. You will still see the same information, but then you can also enter a response and upload (intermediate) documents including your answers using the answer template provided.

You have **three (3) hours** to finish this case study.

In case of any issues, contact **exam@qpip.org**. This mailbox will be monitored during the exams.

Question 1 (90 points)

ABC Company (ABC), an international manufacturer of paper products, has developed a new paper-based carrier for consumer containers such as beverage cans. The carrier will have holes to engage only the neck of 2, 4, 6 or 8 cans depending on the size of the carrier and the number of holes in the carrier. The four hole version is shown below in Figure 1.

Figure 1

The carrier uses paper-based material (e.g. a single sheet or more than one layer of paper, solid paper board, cardboard, or corrugated paper) and may enclose the top of the beverage cans (as shown below) so that a customer can apply its branding to the top of the paper-based carrier as shown in Figure 2.

Figure 2

To reduce the cost associated with producing the carrier, the carrier does not include a handle and the carrier does not engage the mid-section or bottom part of the can. The use of paper-based material enables the carrier to be easily biodegradable in that it will naturally decompose without the need to treat the carrier to enable degradation. The minimal amount of paper used also helps to reduce the number of trees that need to be cut down to make the carriers. Further, ABC sources its paper from sustainable growth trees in Argentina as it is deeply committed to producing environmentally friendly products.

ABC plans to sell the carrier in Australia, United Kingdom, United States, and Canada.

An associate of yours has performed a search for ABC and this associate has asked you to review the documents below (Publications 1 to 6) to see which documents are relevant or not relevant to ABC's planned sales in these four countries. Your assignment is to review the documents below and (a) state which documents would be relevant or not relevant to the planned sales in each of these countries and (b) give reasons why you think the document is relevant or not relevant to the proposed sales in these four countries.

To provide your answers please download the Microsoft Word table or Microsoft Excel table (whichever you prefer to work with) and fill in the blanks. Please do NOT make any statements in your answers such as "the claims are infringed" or "not infringed" or that "ABC can be sued for infringement" as such legal advice can only be made by a registered patent attorney in the jurisdictions of interest.

BONUS (5 points): As mentioned above, ABC Company sources its raw materials for its paper-based carrier in Argentina. If ABC decided to sell its paper-based carrier in Argentina would documents D1-D6 be relevant or not relevant to their sales in Argentina? Please give your explanation why the six documents are relevant or not relevant in the column marked "Argentina" in the Microsoft Word table or Microsoft Excel Table. (NOTE: Answering this question correctly will add points to your score, but if you choose to not answer the question or you provide an incorrect answer, it will not count against you)

Question 2 (10 points)

In document D6 identify all independent claims and state your reasoning.

Title	Priority Number	Priority Date	Application Date	Publication Date
Carton	US 62/XXX,XXX	2018-12-14	2019-05-30	2020-06-18

BACKGROUND OF THE DISCLOSURE

[0001] The present disclosure generally relates to cartons or carriers for holding, displaying, and/or transporting containers.

SUMMARY OF THE DISCLOSURE

[0002] According to one aspect, the disclosure is generally directed to a carrier for holding a plurality of containers that comprises a plurality of panels comprising at least one central panel and at least one attachment panel. The at least one central panel is for positioning between and attachment to adjacent containers of the plurality of containers.

[0003] According to one aspect of the disclosure, a carrier for holding a plurality of containers comprises a plurality of panels comprising at least one central panel and at least one attachment panel configured to receive a portion of one or more containers of the plurality of containers. The at least one central panel comprises a plurality of openings and is for being positioned between and attached to adjacent containers of the plurality of containers.

[0004] According to another aspect of the disclosure, a blank for forming a carrier for holding a plurality of containers comprises a plurality of panels comprising at least one central panel and at least one attachment panel configured to receive a portion of one or more containers of the plurality of containers. The at least one central panel comprises a plurality of openings and is for being positioned between and attached to adjacent containers of the plurality of containers when the carrier is formed from the blank.

[0005] According to a further aspect of the present invention a method is provided for making a carrier according to the invention by obtaining a blank comprising a plurality of panels comprising at least one central panel and at least one attachment panel configured to receive a portion of one or more containers of the plurality of containers, the at least one central panel comprises a plurality of openings; folding the plurality of panels such that the at least one central panel is positioned between adjacent containers of the plurality of containers; and attaching at least one container of the plurality of panels to the at least one central panel

DETAILED DESCRIPTION

[0006] The present disclosure generally relates to carriers, packages, constructs, sleeves, cartons, or the like, for holding and displaying containers such as jars, bottles, cans, etc. The containers can be used for packaging food and beverage products, for example. The carriers can be made from materials suitable in composition for packaging and the materials include, but are not limited to, glass; plastics such as PET, LDPE, LLDPE, HDPE, PP, PS, PVC, EVOH, and Nylon; and the like; aluminum and/or other metals; or any combination thereof. In a further embodiment, the carriers may be made of paper or

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Carton	US 62/XXX,XXX	2018-12-14	2019-05-30	2020-06-18

plant fibre pulp. The paper or plant fibre pulp carrier is biodegradeable The containers may snugly fit into the holes of the paper or plant fibre pulp carrier which engages only the neck of the containers .

[0007] The paper based carrier are preferably created from a single sheet of paperboard or an extruded sheet of plant fibre pulp. Accordingly, the construction of such carriers do not require any glue. t If the carrier is made from a plastic material or a metallic material, a glue is used in the construction of the plastic or metal based carrier. . Such a glue can be, for example, a hot melt adhesive, a high tack glue, an epoxy, a polymeric cement, etc., or combinations thereof. The glue can have a different arrangement without departing from the disclosure. For example, in one embodiment, the glue can be applied to one or more portions of the interior surface of the blank 103/carrier 105.

[0008] As is shown in the Figure 1, a respective container CAI, CA2, CB1, CB2 can be removed from the carrier 105 by disengaging the container from a respective attachment panel 131a, 131b, for example, by withdrawing the top portion T of a respective container through an opening formed by a respective cut 141a, 141b along the respective attachment panel 131a, 131b, and peeling the respective container away from the respective central panel 125a, 125b. Peeling or pulling the containers CAI, CA2, CB1, CB2 away from a respective central panel 125a, 125b can involve pulling the respective container with a force sufficient to overcome the adhesive bond of the respective container and the respective central panel 125a, 125b provided by the glue G. In one embodiment, the glue G can be selected so as to remain on a respective central panel 125a, 125b, e.g., such that substantially little or no glue G remains on the container as it is removed.

[0009] One or more of the containers CAI, CA2, CB1, CB2, in one embodiment, can be reattached to a respective central panel 125a, 125b following therefrom by pressing the container against a respective region of glue G. It will be understood that a different number of rows or arrangements of glue openings can be provided without departing from the disclosure, and that the central panels can be sized and configured to accommodate such arrangements. In one embodiment, the central panels 125a, 125b can be devoid of glue openings such that the respective containers CAI, CA2 and CB1, CB2 are adhered only to the respective central panel 125a, 125b.

[0010] In another embodiment, glue G can be provided both on portions of the respective central panels 125a, 125b exposed through the respective glue openings 127b, 127a as well as portions of the respective central panels 125a, 125b adjacent the respective glue openings 127a, 127b such that each container CAI, CA2, CB1, CB2 can be adhered to portions of both central panels 125a, 125b.

[0011] In another embodiment, a portion of one container 58 is illustrated in FIG. 2 with dashed lines. The six can openings 52 are surrounded by a partial dome 53 having a shape that can expand slightly to capture a top portion of a container 58. When a container is inserted from below the domes 53, the inner circumference slightly enlarged and then springs back into a groove at the top of the container 58 to releasably but snugly secure the

Title	Priority Number	Priority Date	Application Date	Publication Date
Carton	US 62/XXX,XXX	2018-12-14	2019-05-30	2020-06-18

container 58 therein. [0014] The carrier 105/package 110 described above has a compact structure that can, for example, provide materials savings and waste reduction. Additionally, the arrangement of the glue G among the containers CAI, CA2, CB1, CB2 as well as the central panels 125a, 25b provides multiple points of attachment that results in a robust structure for holding and carrying the containers CAI, CA2, CB1, CB2. Further, the exposure of one or more portions of the containers CAI, CA2, CB1, CB2 on exterior portions of the carrier 105/package 110 provides a consumer with a clear view of labeling or surface graphics associated with the containers CAI, CA2, CB1, CB2, as well as providing convenient access to remove one or more of the containers CAI, CA2, CB1, CB2 from the carrier 105/package 110.

[0012] The blanks may be coated with, for example, a moisture barrier layer, on either or both sides of the blanks. The blanks can also be laminated to or coated with one or more sheet-like materials at selected panels or panel sections.

[0013] As an example, a fold line can be any substantially linear, although not necessarily straight, form of weakening that facilitates folding therealong. More specifically, but not for the purpose of narrowing the scope of the present disclosure, fold lines include: a score line, such as lines formed with a blunt scoring knife, or the like, which creates a crushed or depressed portion in the material along the desired line of weakness; a cut that extends partially into a material along the desired line of weakness, and/or a series of cuts that extend partially into and/or completely through the material along the desired line of weakness; and various combinations of these features. In situations where cutting is used to create a fold line, typically the cutting will not be overly extensive in a manner that might cause a reasonable user to incorrectly consider the fold line to be a tear line.

[0014] The above embodiments may be described as having one or more panels adhered together by glue during erection of the carrier embodiments. The term “glue” is intended to encompass all manner of adhesives commonly used to secure carrier panels in place.

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Claims:

1. A carrier for holding a plurality of containers, the carrier comprising:

   a plurality of plastic or aluminum panels comprising at least one central panel and at least one attachment panel configured to receive a portion of one or more containers of the plurality of containers,
   the at least one central panel comprising a plurality of openings and for being positioned between and attached to adjacent containers of the plurality of containers.

2. The carrier of claim 1, wherein the at least one central panel is for being adhered to adjacent containers of the plurality of containers.

3. The carrier of claim 1, wherein the plurality openings comprises a first row of openings and a second row of openings spaced apart from the first row of openings.

4. The carrier of claim 3, wherein the first row of openings is spaced a first distance from a bottom edge of the at least one central panel, and the second row of openings is spaced a second distance from the bottom edge of the at least one central panel, the second distance is greater than the first distance.

5. A blank for forming a carrier comprising a plurality of plastic or aluminum panels comprising at least one central panel and at least one attachment panel configured to receive a portion of one or more containers of the plurality of containers, wherein the at least one central panel comprises a plurality of openings and is for being positioned between and attached to adjacent containers of the plurality of containers when the carrier is formed from the blank.

6. A method of forming a carrier for holding a plurality of containers, the method comprising:
   obtaining a plastic or aluminum blank comprising a plurality of panels comprising at least one central panel and at least one attachment panel configured to receive a portion of one or more containers of the plurality of containers, the at least one central panel comprises a plurality of openings;
   folding the plurality of panels such that the at least one central panel is positioned between adjacent containers of the plurality of

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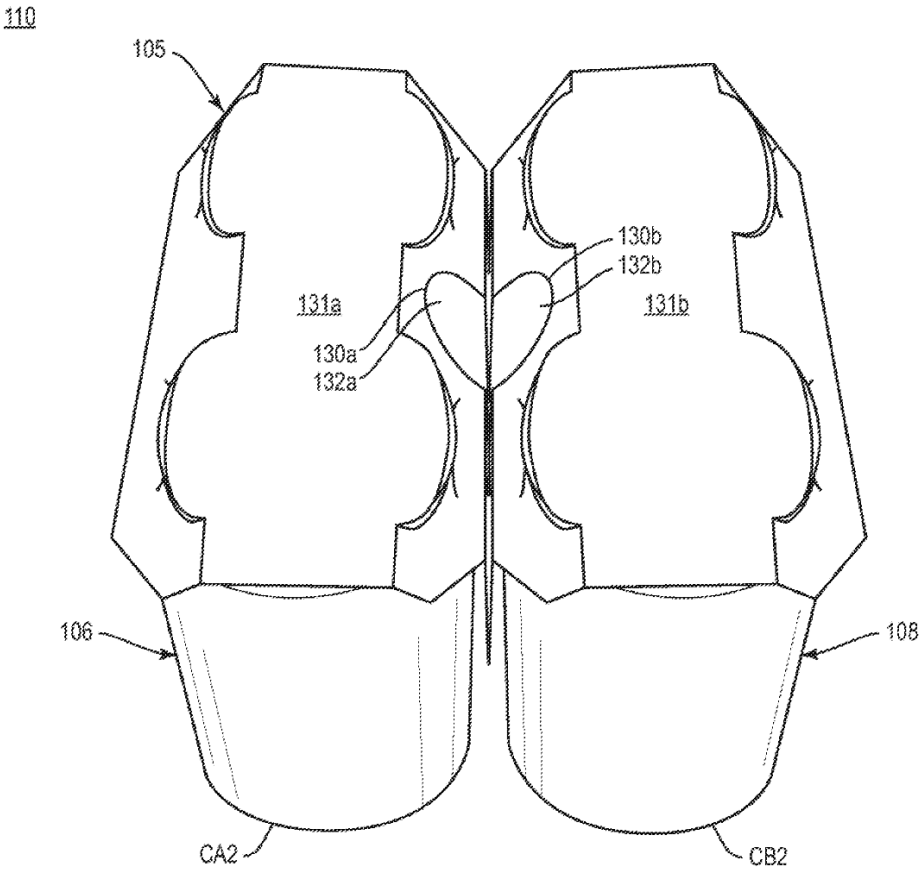
Carton	US 62/XXX,XXX	2018-12-14	2019-05-30	2020-06-18

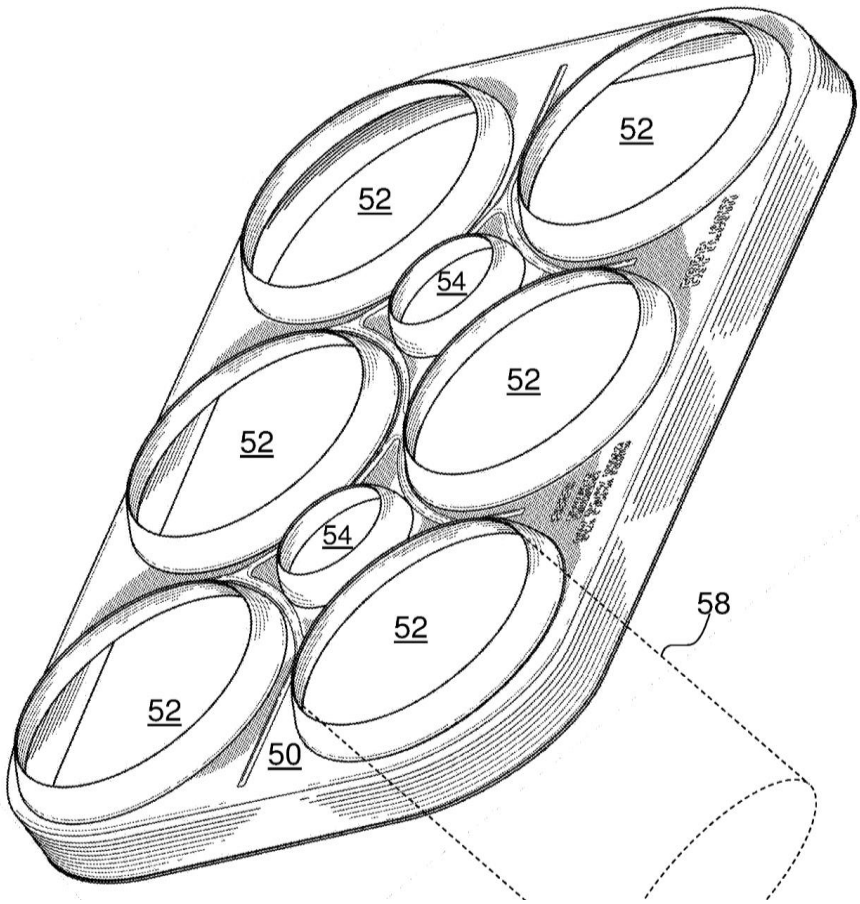
containers; and attaching at least one container of the plurality of panels to the at least one central panel.

Figure 1



Title	Priority Number	Priority Date	Application Date	Publication Date
Carton	US 62/XXX,XXX	2018-12-14	2019-05-30	2020-06-18

Figure 2:



United States Patent [19]

[11] **Patent Number**: 5,XXX,XXX

[45] **Date of Patent:** Feb. 16,1993

[54] ERODIBLE CARRIER FOR MULTIPLE CONTAINERS

[76] **Inventor:** XXXX, X.

[21] **Appl. No.** 06/NNN,NNN

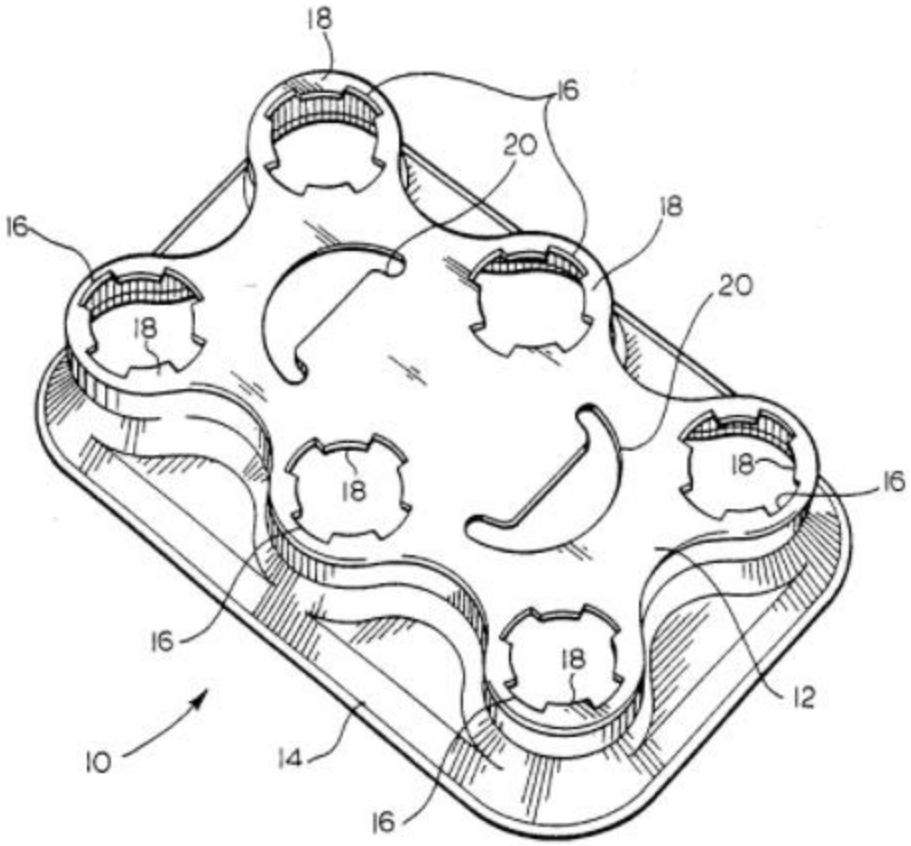
[22] **Filed:** Feb 28, 1992

[51] **Int. Cl**. …….. B65D 71/00

[52] **U.S. Cl.** …… 206/151

[57] **ABSTRACT**

An improved paper-based multiple container carrier made of paperboard which has recyclable paper. Tearing of the paperboard is prevented by multiple indentations or notches circumferentially extending around the orifices through which containers or fingers are inserted.



BACKGROUND OF THE INVENTION

Canned and bottled beverages currently on the market generally utilize a multiple unit carrier for the convenience of the stocking personnel and the consumer. This practice has been ongoing for at least

fifty years. Originally, compartmented cardboard boxes housed multiple containers. Modifications of the basic box continued for many years and is in use today, particularly for bottles, where it is desirable to maintain separation to prevent breakage. With the advent of canned beverages, breakage no longer was a problem. In addition, cans historically had a bead or circumferential ring at the top which could be used to latch or interconnect with a carrier. The most popular form of such carrier is the plastic yoke type wherein interconnected rings of the proper configuration, with one ring for each container could be stretched over the container top rim forming both a friction fit with the container body and an interference fit below the circumferential ring or bead on the container top. These yoke type carriers handle the multiple container transport problem very well. However, it has been found that they pose a serious threat to wildlife by entangling the same. Also, these yoke carriers are usually made of polyolefin plastic sheeting which does not degrade and thus is difficult to dispose of.

OBJECT OF THE INVENTION

It is a primary objective of the invention to provide a multiple beverage container carrier which is completely erodible in the environment.

It is another objective of the invention to provide a multiple beverage container carrier which securely holds two or more beverage containers for convenient transport.

It is yet another objective of the invention to provide a multiple beverage container carrier that can be made of recyclable materials.

It is yet another objective of the invention to provide a multiple beverage container carrier that in one form is resistant to water yet completely erodible in the environment.

It is yet another objective of the invention to provide a multiple beverage container carrier that may readily be incinerated without yielding any objectionable odors.

It is yet another objective of the invention to provide a multiple beverage container carrier that may be used with cans or bottles.

PRIOR ART

A preliminary search for patentability revealed the following U.S. patents:

U.S. Pat. No. 3,394,800--Bracket et al. issued Jul. 30, 1968 "a (paperboard) carrier which completely encloses the product which prevents the bottles from coming into direct contact with each other.

U.S. Pat. No. 3,601,439--Poupitch issued Aug. 24, 1971, assigned to Illinois Tool Works, Inc. "a combined paperboard and film device which will not only grip the underside of the bead of a container (can) but will also provide a protective coating for the entire upper surface of a plurality of containers. "The device is "readily disposable and to this end it is proposed to produce a device which is readily combustible".

U.S. Pat. No. 4,190,149--Oliff et al. issued Feb. 26, 1980, assigned to The Mead Corporation. "an article carrier formed from a unitary blank (paperboard) and comprises a top wall with side and end walls diverging downwardly therefrom, multiple neck receiving apertures formed in the top wall and corner structures intersecting the side and end walls at each corner of the carrier and conforming to the contour of the associated packaged article."

U.S. Pat. No. 4,453,630--Helms et al. issued Jun. 12, 1984, assigned to Container Corporation of America, "a carrier includes a shell formed of relatively thin printable sheet material having molded plastic frame bonded to the underside thereof to reinforce the article receiving openings, the finger openings and corners of the shell."

U.S. Pat. No. 4,911,288--Dantoin, Jr. issued Mar. 27, 1990 "a carrier for two or more sealed cans of the type having a tab fixed by securing means to a lid of each can. A sheet (paperboard) for holding the cans has slot openings spaced apart by the center-to-center distance between the cans. Each slot opening is adapted to receive the tab of one sealed can with the edges of the sheet around each slot being functionally engaged between the tab and lid in an interference fit."

None of the prior art revealed the improvement in the art disclosed by the instant invention.

SUMMARY OF THE INVENTION

A multiple container carrier stamped out of a cardboard, paperboard or pasteboard which contains recyclable material. Multiple circular orifices are supplied through which containers may be inserted to be both frictionally and structurally retained. In addition, at least one smaller orifice is supplied through which a finger may be inserted to pick up and carry the multiple containers. Each of the container holding orifices have lips circumferentially extending around the orifice. They do, however, have a series of indentations or notches circumferentially extending around the orifice to prevent tearing of the carrier base. The indentations or notches acting to interfere with the propagation of a tear by distribution of the tear initiating force which if not blocked by the indentation or notch would essentially continue to ultimately split the main body of the carrier. The distribution of force coming about first because of the densification of the card or paperboard at the

indentation or notch and secondly by imparting resilience to the paperboard around the orifice.
The container carrier base including orifices, lips, and indentations are formed by conventional paper-cardboard cutting/stamping dies. In this instance it may be necessary to either use a compound cutting die sequentially cutting the orifice and indentations by use of sequentially stationed multiple dies. The choice being determined by final cost/volume considerations.
The instant invention is made up of material consisting of recyclable paper, card or paperboard. The outer layers of material may have a coating applied thereon to impart a degree of water or moisture resistance. Such coatings should not be of nonbiodegradable polymeric materials such as polyethylene, polyvinylchloride or petroleum waxes which do not contain reactive groups along their polymer chains. Instead, materials such as the high molecular weight CARBO WAX (Union Carbide Corp.) which is a methoxypolyethyleneglycol polymer will be useful in the instant invention because these polymers are biodegradable and will impart a degree of water resistance. Alternatively, other well-known resins with reactive sites situated along the polymer chain may be used as a coating particularly those with substantial residual unsaturation which is easily attacked by bacteria. The paperboard may be formed either by use of adhesive to bond the individually formed fibers or may be formed by pressing or coleveling the materials while still wet in the paperboard press, eliminating the need for adhesive.
The lips surrounding the large orifices are slightly beveled during the cutting or stamping operation. This slight upward bend assists in placing the carrier over the tops of containers to interlock with the upper bead on the container. Also the bevel acts as an indexing guide when the stacked die cut carriers are loaded into a packaging machine.
A version which employs a lighter weight paperboard is obtained by extending the sides of the basic carrier, equipping these sides with perforated fold lines and tabs. When these extended sides are folded and tucked under the carrier base and the tabs are inserted into slits to lock the side in place. In this position the folded under sides brace against each other to rigidify the thinner lighter weight carrier.

BRIEF DESCRIPTION OF THE DRAWING
FIG. 1 is a diagrammatic view of the basic carrier.

DETAILED DESCRIPTION
FIG. 1 is a schematic view of one version of the improved paperboard container carrier 11. Large container retaining orifices 2 have lips 4 extending circumferentially around the orifice. Tear resistance is imparted by an indentation or notch 3 and at least one additional indentation or notch 5 adjacent to the indentation at the base both extending circumferentially around the orifice. The indentations or notches acting to deter propagation of a tear which might be initiated during the transport of the carrier with filled containers hanging therefrom.
Smaller orifices 10 have at least two indentations 7, 9 extending circumferentially around the orifice to prevent propagation of a tear which might originate when fingers are inserted into the orifice to pick up a carrier base containing multiple filled beverage containers.
Location of container retaining orifices in the carrier is determined by the type and shape of the container to be carried. Optimum retention with limited buckling of the carrier is obtained by limiting the distance from container to container in any direction to approximately 1/8 inch (5 mm). Container to container distance greater than 1/8 inch (5 mm) will require a heavier stock paperboard while lesser distance between containers is difficult to control in automatic packaging machinery.
invention described be limited to the description herein but is defined in the claims which follow:

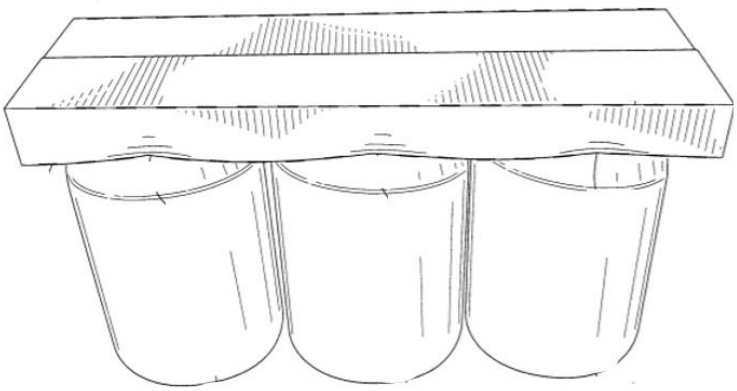
What I claim is:
1. An improved erodible multiple container carrier body stamped out of an erodible material with multiple circular orifices into which containers are inserted to be both frictionally and structurally retained and at least one smaller orifice through which a finger may be extended, said multiple orifices having lips extending circumferentially around said orifices in said main carrier body, said erodible material surrounding said orifices acting in concert to retain said containers and to prevent tearing of said improved erodible multiple container carrier.
2. An improved erodible container carrier that can be erodible in the environment of claim 1 wherein said outer layer of said erodible material is coated with an erodible water-resistant coating.
3. An improved erodible container carrier that can be erodible in the environment of claim 1 wherein said erodible material is selected from the group consisting of cardboard, paperboard and pasteboard.
4. An improved erodible container carrier of claim 1 wherein said containers can be cans or bottles.

Australian Design Registration AU2021XXXXXS

Title	Priority Number	Priority Date	Application Date	Registration Date	Certification Date
Beverage holder	US29/XXX,XXX	2017-Jul-14	2017-Dec-20	2018-Jan-25	2018-Apr-18

Statement of newness and distinctiveness

Newness and distinctiveness is claimed in the features of shape and/or configuration of the four-pack beverage holder, as shown in the representations



D4 : Canadian Patent CA X XXX XXXC PAGE 1

Title	Priority Number	Priority Date	Application Date	Publication Date	Issue date
Beverage can carrier	-	2014-08-14	2015-07-12	2015-02-14	2017-01-01

ABSTRACT

The invention relates to a top-gripping beverage container carrier providing enhanced stability of the arrangement and more flat space for printing purposes. The carrier is comprising a main panel of a sheet material having at least one can receiving aperture or the containers. The panel is furthermore provided with a series of locking tabs hinged and connected to the main panel by respective folding lines disposed around a container receiving aperture. The carrier may further comprise at least one integrated foldable cover panel for covering cans partly or fully to provide cand protection and also space to be used for printing, e.g. for marketing or promotional purposes.

DESCRIPTION

Field of Invention

The invention relates to beverage container carriers, and in particular aiming at can carriers for carrying a multiplicity of beverage cans.

Background of invention

A first known type of beverage can carriers is formed by plastic six-pack rings, which comprises six interconnected flexible plastic rings. A first disadvantage of such plastic six-packs ring may lie in their environmental impact, for instance as animals may become entrapped in the plastic rings when they are not properly disposed. Another disadvantage may lie in that such plastic six-pack rings do not provide much space for printing, such as for marketing or promotional purposes. Additionally, there is a need for a solution to keep beverage containers in place for better carrying and or supporting of piling of carriers.

Summary of Invention

It is an object of the invention to provide an alternative beverage can carrier multipack. In particular, it is an object of the invention to provide a beverage can carrier, wherein at least one of the disadvantages of a prior art beverage can carrier is counter-acted.. In the suggested embodiments, the invention aims at providing a sheet-based top-gripping beverage can carrier providing additional space for commercial printing, as well as means that facilitate so containers can be retained therein with better stability. The solution also prevents animals to become entrapped due to the absence of elastic plastic rings.

Title	Priority Number	Priority Date	Application Date	Publication Date	Issue date
Beverage can carrier	-	2014-08-14	2015-07-12	2015-02-14	2017-01-01

Description of drawings

Fig. 1 shows a schematic top view of a second embodiment of a can carrier

Fig. 2 shows a schematic perspective view of the carrier in a use state thereof in which it is holding beverage cans.

Detailed description of preferred embodiments

The invention provides a top-gripping beverage can carrier comprising a main panel (2) of a sheet material having at least one can receiving aperture (3). The main panel is provided with a series of locking tabs (4) hinged and connected to the main panel by means of a respective fold line (5), and disposed around the can receiving aperture. Each locking tab extends from the respective fold line towards a retaining edge (40) for engaging an underside of a radially protruding portion of a beverage can, to be received in the can receiving aperture. The retaining edge is located more inwardly with respect to the can receiving aperture than said fold line. Each locking tab can pivot about the respective fold line from an initial position of the respective locking tab, in which said respective locking tab lies substantially in line with the main panel, towards a folded up position in which said locking tab is under an angle with the main panel. The main panel includes a series of neck support sections (44) being integral parts of the main panel. At least in the initial position of the locking tabs, the retaining edges of the locking tabs extend more inwardly with respect to the can receiving opening than the neck support edges. To further support stability the sheet material is preferably consisting of a rigid plastic material such as polyethylene instead of e.g. corrugated cardboard solutions.

In a preferred embodiment, the carrier 1 may further comprise at least one cover panel 7 for covering at least a part of at least one of the cans 6 to be held by the carrier 1. In particular such cover panel 7 may cover one or multiple can lids 61 at least partly, and preferably substantially entirely. It is noted that such a cover panel 7 may be advantageously used for printing, e.g. for marketing or promotional purposes.

Title	Priority Number	Priority Date	Application Date	Publication Date	Issue date
Beverage can carrier	-	2014-08-14	2015-07-12	2015-02-14	2017-01-01

CLAIMS

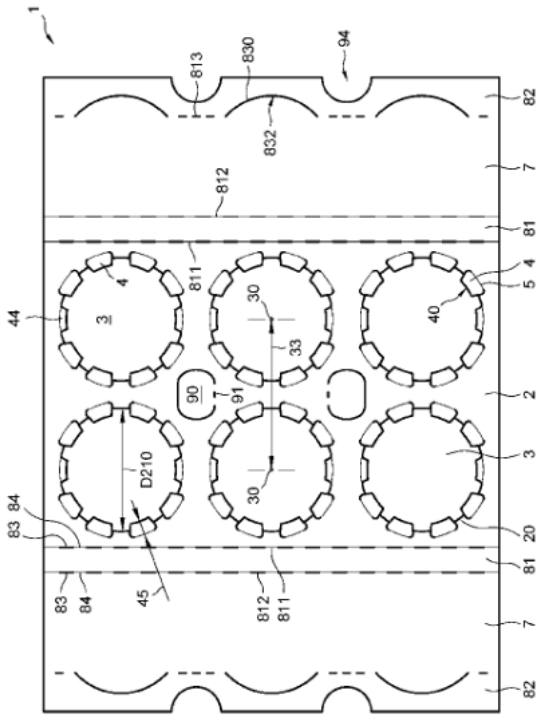
1. Top-gripping beverage can carrier, comprising a main panel of a sheet of a rigid plastic material having at least one can receiving aperture, wherein the main panel is provided with a series of locking tabs hingedly connected to the main panel by means of a respective fold line, and disposed around the can receiving aperture, wherein each locking tab extends from the respective fold line towards a retaining edge for engaging an underside of a radially protruding portion of a beverage can to be received in the can receiving aperture, wherein said retaining edge is located more inwardly with respect to the can receiving aperture than said fold line, wherein each locking tab can pivot about the respective fold line from an initial position of the respective locking tab, in which said respective locking tab lies substantially in line with the main panel, towards a folded up position in which said locking tab is under an angle with the main panel, wherein the main panel includes a series of neck support sections being integral parts of the main panel.

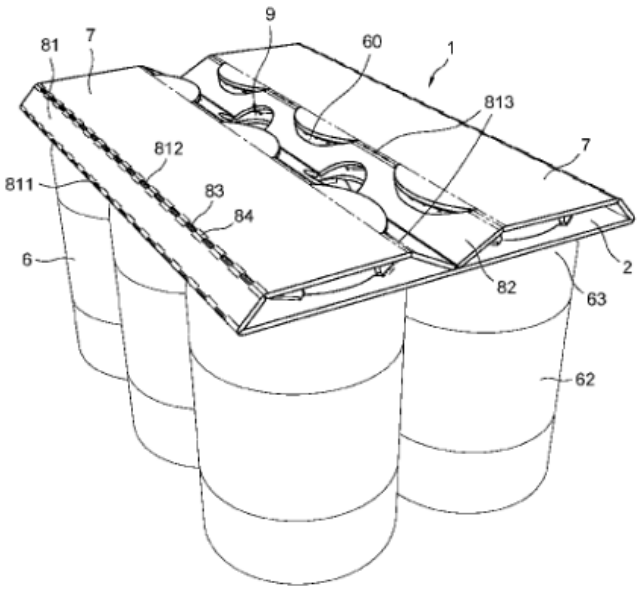
2. Carrier according to claim 1, wherein at least the main panel and the series of integrated locking tabs are formed out of a sheet of polyethylene.

3. Carrier according to any of preceding claims, further comprising at least one integrated foldable cover panel for covering at least a part of at least one of the cans to be held by the carrier.

Title	Priority Number	Priority Date	Application Date	Publication Date	Issue date
Beverage can carrier	-	2014-08-14	2015-07-12	2015-02-14	2017-01-01

DRAWINGS





Title	Priority Number	Priority Date	Application Date	Publication Date
Blank capable of being formed into an enclosed carton	**GB16xxxxx**	2021-Jan-06	2021-Jan-06	2021-Jul-06
IPC Classification	B65D17/00; B65D17/28; B65D5/46; B65D5/468; B65D5/72; B65D71/00; B65D71/36			

Abstract Title: **Carton for carrying a plurality of cans in at least three rows having a dispenser flap**
A carton for carrying a plurality of cans (C) in at least three rows having a dispenser flap (62) that is easily removed from the end of the carton to expose a dispenser which has a bottom of a sufficient height from the bottom panel to prevent containers in the bottom row from rolling out, but less than the diameter of a container in the bottom row. The top of the dispenser is at a height from the bottom panel that is equal to diameter of a can (C) contained in the carton plus the distance that is substantially less than the diameter of a can (C), such height being sufficient to prevent any container in the middle row from automatically rolling out of the dispenser when opened, but allowing a person to grasp and pull out the container in the middle row that is adjacent to the dispenser.

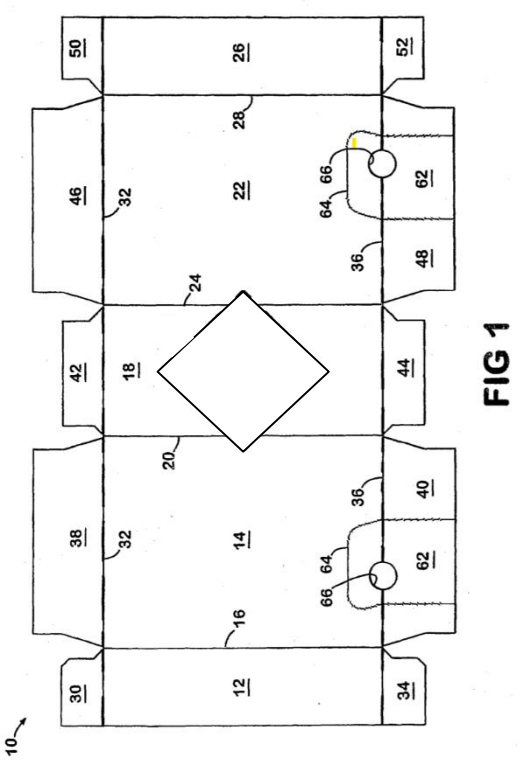


FIG 1

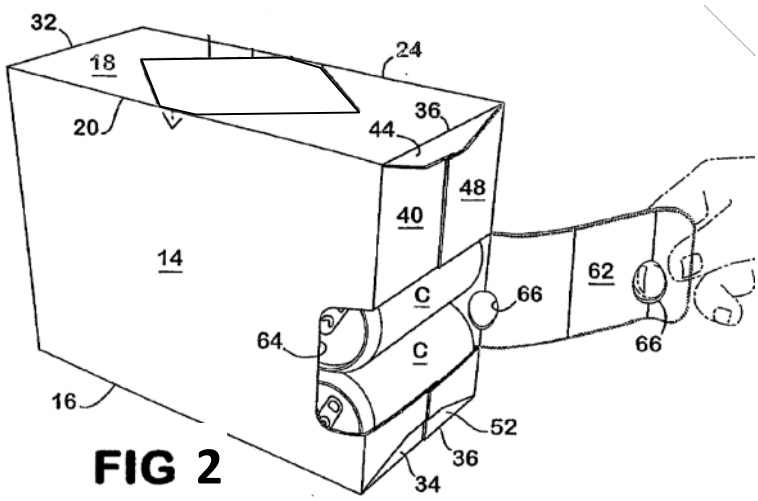


FIG 2

BACKGROUND OF THE INVENTION

The present invention relates generally to an enclosed paperboard carton capable of enclosing cylindrical containers, such as cans, which carton has a unique opening and dispensing feature in an end wall that allows the containers, for example cans, to be removed one at a time with other containers in the carton falling into position for removal. When the dispenser is opened when the carton is resting on its bottom panel, the bottom of the dispenser has been placed far enough above the bottom panel to prevent a container resting on its side in the bottom row from automatically rolling out of the carton. The top of the dispenser is constructed at a height from the bottom panel sufficient to prevent a can in the second row from automatically rolling out of the carton. The dispenser opening extends into the side panels of the carton to permit a person to grasp each end of the container as it falls into position and remove it from the carton. A finger aperture is provided in the dispenser flap which is pulled to open the dispenser with the aperture being located in the space in the side panel formed between the arcs of cans in the first and second row in the dispensing end of the carton.

Fully enclosed cartons capable of enclosing cans have been used in the past that have a feature for dispensing the cans one at a time. Dispenser sections have been provided at various locations within those cartons depending on the design. Many of these dispensers suffer from the disadvantage that once open, they allow all of the containers to roll out. In addition, it is difficult to carry one of these cartons without the containers falling out once the dispenser has been opened.

Many of these dispensers destroy the overall carton integrity once they have been opened. Many of these dispensing features do not have any means for preventing the first cylindrical container, e.g. cans, falling from the carton once the dispenser has been opened. In other words, the dispenser has no safety feature.

SUMMARY OF THE INVENTION

It is an object of this invention to provide a dispenser that preserves the integrity of the carton after the dispenser has been opened. It is a further object to provide a dispenser that can be used with cylindrical containers, such as cans. It is a still further object of this invention to provide a dispenser for dispensing cylindrical containers, such as cans, in a carton where the containers are stacked on their sides in at least three rows and where the containers do not automatically roll out of the carton when it has been opened, but are easily grasped and removed from the carton. It is still a further object of this invention to provide a dispenser flap which has an aperture in which a person's finger can be easily inserted to remove the flap thus opening the dispenser for the removal of cans. It is still a further object of this invention to provide a carton where the cylindrical container, such as cans are stacked on their sides in three rows with some of the containers on the top and middle row automatically rolling forward when a can is removed from the dispenser. It is a further object to provide a carton with a dispenser where the cans are stacked on their sides and the cans in the carton do not automatically exit the dispenser, but can be easily removed by grasping the ends of the can.

Briefly described, in a preferred form, the objects of this invention are achieved by providing an enclosed carton that has a unique and new dispenser in the exiting end of the carton. This carton has generally rectangular side panels and has a bottom, a top, and a closed end and an existing end. This carton is foldably constructed from a blank having panels and flaps. The exiting end or ends of the carton permits cylindrical containers to be taken from the carton through the dispenser. This carton is designed to carry three or more rows of cylindrical containers, such as cans, resting on their sides on the bottom panel of the carton.

In a preferred form, this carton has ends that are formed by a top end flap, bottom end flap, and two side end flaps which are held together by glue. A tear line is provided in the two side end flaps above the bottom end flap at a height sufficient to prevent any can in the bottom row from automatically rolling out of the dispenser when it is opened, at least when the carton is on a horizontal plane. The carton has a top tear line in the two side end flaps that is at a sufficient height from the bottom panel to prevent a can in the second row from automatically rolling out when the dispenser is opened at least when the carton is on a horizontal plane.

These top and bottom tear lines extend into a least one of the side panels and turn toward each other and meet each other so that the dispenser can be opened when removing the dispenser flap between the top and bottom tear lines. Preferably the bottom and top tear lines extend into both side panels and turn and meet each other. Preferably there is a finger aperture between these tear lines in at least one of the side panels that permits a person's finger to enter the aperture and remove the dispenser flap that opens the dispenser. Preferably this finger aperture is placed at the intersection of the side panel and end flap so that a person's finger enters the space between a can in the first row and a can in the second row and the dispenser flap. This enables a person to obtain the necessary grip and leverage for the easy removal of the dispenser flap. This aperture can be placed between the bottom and top tear lines in both side panels, preferably at the intersection of a side panel and end flap. Alternatively, this finger aperture can be placed in the dispensing end of the container so that a person's finger enters the space between the can in the bottom row and a can in the second row for easy removal of the dispenser flap.

The bottom tear line in the dispensing end of the carton is located at a height so that the containers in the bottom row do not automatically roll out when the dispenser is opened. This height is relative to the diameter of the containers in the bottom row. The height of this bottom tear line should be between at least 40 to 80% of the diameter of the containers in the bottom row. Preferably the height of the bottom tear line is approximately 60% of the diameter of a can in the bottom row. The location of the top tear line is also related to the diameter of the cans. It is basically located at a height from the bottom panel that is approximately the diameter of a can in the bottom row plus a distance that is approximately between 60 and 90% of the diameter of a can in the second row. Preferably, the height of the top tear line is approximately the diameter of a can in the bottom row plus approximately 80% of the diameter of a can in the second row.

It is important that the tear lines that extend into the side panel extend a sufficient distance and height so that a person's fingers can grasp the ends of the can adjacent to the dispenser and remove it easily. Basically, the top and bottom tear lines should extend into each side panel at about the same height from the bottom panel at which they are placed in the end of the carton. These lines need to extend into each side panel a sufficient distance and then turn to meet each other so that when removed it is easy for a person's fingers to grasp the can adjacent to the dispenser.

It should be realized that the dispenser flap does not have to be totally removed from the carton as long as it is removed from one side and the end panel. It is preferable that the dispenser flap be completely removed so that a person's fingers can easily grasp the ends of the can adjacent the dispenser.

This carton can be constructed by gluing, taping, stapling and the like, or by locking. It is preferred that this carton be glued. The dispenser of this invention can be put in one end of the carton or in both ends. These and other objects, features, and advantages of he present invention will become more apparent upon reading the following specification in conjunction with the accompanying drawing figures.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a plan view of a blank from which a carton according to one embodiment of this invention is formed.

FIG. 2 is a perspective end view of the carton containing cans in which a person's finger has been inserted into the finger aperture in a side panel partially pulling the dispenser flap away from the carton except in one side panel.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The present invention is intended primarily for use with cans of the type used to contain soft drinks, beer and the like. The blank 10 is formed from a foldable sheet of material, such as paperboard.

This carton has a dispenser flap 62 formed by providing tear line 64 which extends into side panel 14 and 22 and side end flaps 40 and 48. A finger aperture 66 may be provided for the easy removal of the dispenser flap 62.

This finger aperture 66 should be located in such a position so that a person's finger may be inserted into the finger aperture in the space formed between the two arcs of a can in the bottom row and a can in the next row which are in contact with the dispenser flap 62. This allows a person's finger to be inserted far enough into the carton to provide the necessary leverage for removing the dispenser flap 62. Preferably a finger flap 66 is placed on each side of the dispenser flap 62 to provide the necessary leverage for the removal of the flap. It is preferred that the finger aperture be centered on fold line 36 which is the ideal location for the insertion of a person's finger into the spare between the cans in the bottom row and second row and the dispenser flap 62.

A carton erected from the blank shown in FIG. 1 only has a dispenser flap 62 on one end of the carton. However, a dispenser flap could be placed on both ends of the carton.

The dispenser of the carton made from the blank of FIG. 1 needs to have the top and bottom tear line 64 placed in the end of the carton in such a way so that none of the cans will roll out when the dispenser flap is opened exposing the dispenser, at least when the carton is in a horizontal plane. The portion of the tear line near the bottom of the container needs to be a sufficient distance from the bottom panel so that a can C in the bottom row does not roll out of the carton when the dispenser flap 62 is opened. The top portion of tear line 64 needs to be located from the bottom panel at a distance equal to the diameter of the can in the bottom row plus a distance that is substantially less than the diameter of the container in the middle row but sufficient to prevent any container in the middle row from automatically rolling out of the dispenser when the carton is on a horizontal plane. It has been found that the bottom tear line needs to be at a height that is between approximately 40% to 80% of the diameter of a container, as measured from the bottom panel. Preferably the height of the bottom tear line 64 is approximately 60% of the diameter of a can contained in the bottom row, as measured from the bottom panel. Preferably the top tear line is located at a distance equal to the diameter of a can in the bottom row plus approximately 80% of the diameter of a can in the second row, as measured from the bottom.

It is preferred that the ends of the carton be constructed of flaps that can be glued together to form the end panel. While in the carton of this embodiment as described in FIG. 1 the end flaps can be closed and glued to form the exiting end, it should be realized that the dispenser can be utilized in a carton in which an end panel is constructed from the same carton blank but the folding and gluing or securing that is necessary is done elsewhere on the blank.

As described previously the location of the bottom tear line and the top tear line are at sufficient heights to retain all the cans in the carton when the dispenser is opened but with sufficient distance between them to permit the easy removal of the can. A can can only be easily removed if it can be grasped on both ends

It is preferable that the finger aperture 66 be placed in each side panel near the fold line 36. It is preferable that the finger aperture 66 be centered on fold line 36. The finger aperture 66 can be placed in dispenser flap 62 in side end flap 40 or side end flap 48 so that a person's finger enters the space between a can in the bottom row and a can in the middle row.The dispenser of this invention can be used for both cans and other types of cylindrical containers.

Unique Features of the Dispenser of this Invention

One of the unique features of the dispenser of this invention is that it provides for easy removal of the dispenser flap giving easy access to the cans, but does not does not diminish the structural integrity of the carton. The dispenser is easy to open because of the placement of the finger aperture. The dispenser is designed so that the bottom tear line when the dispenser is opened retains cans in the bottom row of containers and the top tear line is located at a sufficient height so that it retains cans in the middle row, but also permits easy removal of the can from the middle row which is partially achieved by the placement of the top tear line and partly by the extension of the tear lines into the side panel to permit a person to grasp the ends of a can for removal.

While the invention has been disclosed in its preferred forms, it will be apparent to those skilled in the art that many modifications, additions, and deletions can be made therein without departing from the spirit and scope of the invention and its equivalents as set forth in the following claims.

CLAIMS

1. An enclosed carton for carrying a plurality of cylindrical containers in at least three rows, with a bottom row, a middle row and a top row, with each container having a diameter and two ends, the carton having ends, one of which is a non-exiting end and the other end is an exiting end capable of permitting containers to exit the carton one at a time when a container is pulled from said exiting end, the carton having a bottom panel and top panel, one of which is an exiting panel capable of permitting containers to exit the carton one at a time when a container is pulled from said exiting panel, the carton comprising:

(a) said bottom panel, said top panel, and foldably attached adjoining side panels;

(b) said exiting end having a bottom and a top tear line which are at least approximately parallel to each other for forming an end dispenser, said bottom tear line having a height from said bottom panel that is less than the diameter of a container to be contained in the carton, but a sufficient height to prevent any containers in the bottom row from automatically rolling out when said end dispenser is open when the carton is resting on said bottom panel, said top tear line having a height from said bottom panel that is equal to the diameter of a container to be contained in the carton plus a distance that is substantially less than the diameter of said container, but at a sufficient height from said bottom panel to prevent any container in the middle row from automatically rolling out of said end dispenser when open when the carton is resting on said bottom panel, said top and bottom tear lines extending into at least one of said side panels a sufficient distance and turning towards each other a sufficient distance to permit said top and bottom tear lines to be torn open so that at least the end of a container in the middle row adjacent said exiting end and said one side panel can be grasped and removed from the carton;

(c) said exiting panel having a bottom and top tear line which are at least approximately parallel to each other for forming a panel dispenser, said bottom tear line having a height from the adjacent end of the carton that is less than the diameter of a container to be contained in the carton, but at a sufficient height to prevent any container adjacent said adjacent end of the carton from automatically rolling out when said panel dispenser is open when the carton is resting on the adjacent end of the carton, said top tear line having a height from said adjacent end that is equal to the diameter of a container to be contained in the carton plus a distance that is substantially less than the diameter of said container, but at a sufficient height from said adjacent end to prevent any container adjacent said panel dispenser from rolling out of said panel dispenser when open when the carton is resting on said adjacent end, said top and bottom tear lines extending into at least one of said side panels a sufficient distance and turning towards each other a sufficient distance to permit said top and bottom tear lines to be torn open so, that the end of a container adjacent said panel dispenser can be grasped and removed from the carton; and

(d) means for closing the carton.

2. The carton of claim 1, in which said panel dispenser is located adjacent a non-exiting end of the carton.

3. The carton of claim 1, which has both an exiting panel and a non-exiting panel with the non-exiting panel being formed from two overlapping flaps.

4. The carton of claim 1, in which there is at least one finger aperture located between the top and bottom tear lines for forming an end dispenser and at least one finger aperture between the top and bottom tear lines for forming a panel dispenser, each said finger aperture being of sufficient size and configuration to permit a person's finger to enter the aperture and tear said dispenser open.

5. The carton of claim 1, in which said bottom and top tear lines for forming the end dispenser and said bottom and top tear lines for forming the panel dispenser extend into each side panel with the extension into one side panel for forming each dispenser being a sufficient distance and turning towards each other a sufficient distance to permit said top and bottom tear lines of each said dispenser to be torn open so that at least an end of a container adjacent each said dispenser can be grasped and removed from the carton.

6. The carton of claim 1, in which said bottom and said top tear line for forming said end dispenser and said bottom and said top tear lines for forming said panel dispenser extend into each side panels a sufficient distance and turn toward each other a sufficient distance to permit said top and bottom tear lines to be torn open so that the ends of a container adjacent each dispenser and said side panels can be grasped and removed from the carton.

7. The carton of claim 1, in which at least one of the dispensers has a finger aperture located between said top and bottom tear lines of a sufficient size and configuration to permit a person's finger to enter said aperture and tear said dispenser open, each such finger aperture being located so that a person's finger enters the carton between the space formed between the points at which two containers adjacent the dispenser contact each other and the dispenser.

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ABSTRACT

A paperboard carrier (10) for supporting containers by the end closure seams (14) such that the containers are able to be in side-by-side contact or sufficiently close to each other to obtain a degree of stability for preventing stressing the paperboard container apertures to disengage the containers. There is a method of treating the container carrier board to permit molding or forming container engaging conic shaped apertures (11) on paperboards as a continuous container supporting structure; and attention is directed to apparatus for rendering the paperboard moldable and able to retain strength while effecting a limited degree of circumferential enlargement.

DESCRIPTION

Field of the Invention

[0001] This invention relates to a container carrier having multiple molded conical container receiving apertures formed in a paperboard blank of paperboard stocks which is built up of virgin kraft paper bonded to a recycled-stock paperboard by an agent which unites the combination so it reacts as if it were of all- kraft composition.

Description of the Prior Art

[0002] The present invention has been influenced by the fact that up to now carriers for containers of the beverage type have been formed of plastic which is not biodegradable and is a hazard to wildlife such as birds, fish, and other creatures who accidentally or in other ways become entangled or ingest such plastic objects.

[0003] For purposes of this specification, the term "chime" defines the groove formed under the seam when a closure is seamed to the open end of a container body.

[0004] The carrier formed of paperboard is simpler and stronger by virtue of continuous molded conical margins surrounding the container receiving-apertures. In addition, its form minimizes the exposed length of paperboard edges (through which moisture wicking occurs) so that the carrier better retains its strength under exposure to moisture.

Brief Summary of the Invention

[0005] It is accordingly an object of this invention to provide an environmentally sound and wildlife-friendly carrier made of paperboard or equivalent paper materials to accommodate multiples of flanged containers, i.e.,

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those whose tops are larger in diameter than the bodies immediately below the tops. A special case of such containers are the necked cans in which beverages are sold, and with minor dimensional variations such cans are the largest single potential use of the instant invention.

[0006] It is a further object of this invention to permit deformation of the body of the carrier to accept containers without resort to slits around the container-receiving apertures as a means of avoiding circumferential stretch fracture of the paper material.

[0007] A still further object of this invention resides in a process for applying moisture to the margins of the apertures so as to create frustro-conical structures in which the major deformation of the paper material is performed in a more-plastic state, followed in a dry state by minor deformation to admit container chimes into the apertures.

[0008] It is yet another object of this invention to exploit the narrow margins around apertures possible with molded carrier-retention structures to adapt the carrier to support straight-sided containers, such as conventional food cans (technically known as sanitary cans).

[0009] The invention is directed to a method of forming a paperboard carrier for containers, having apertures to receive one or more containers and support the containers adjacent the closure seams where a chime groove is created under the closure seam.

[0010] Furthermore, the invention is directed to utilizing paperboard material which can be formed to develop conic configured raised rims extending continuously around the apertures which pass the seamed container closures by elongating temporarily to allow the passage of such seams but returning to a circumferential size adapted to support the containers at the chime grooves under the closure seams.

[0011] The invention proposes to form the conic configured container chime engaging projections by controlled moisture treatment of limited surfaces of the paperboard to render the same capable of being shaped as desired, or by selected character of paperboard which can be dry formed without fracture response.

Brief Description of the Drawings

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[0012] The invention referred to above is well illustrated in the following drawings, wherein:
[0013] Fig. 1 is a plan view as seen from the top of a paperboard carrier formed with apertures according to the invention;
[0014] Fig. 2 is a longitudinal sectional elevation view taken along line 2-2 in Fig. 1 to show the characteristic of the formed conic rim apertures for holding containers; and Fig. 3 is a cross-sectional view of the paperboard carrier engaging a can.

Detailed Description of the Preferred Embodiments

[0015] Fig. 1 is a plan view of a container carrier 10 having apertures 11 suitable for engaging beverage containers (not shown) to create a so-called six-pack. Corners of the paperboard are shown with a radius to produce a rounded-off appearance, but the corners may also be square or cut off diagonally. The carrier 10, with containers captured in the apertures, is provided with finger grip apertures 12 of a size and shape to make it easy to obtain finger contacts for manual carrying of the board 10 when completely loaded with filled containers. The view of Fig. 2 is a section along line 2-2 and illustrates the configuration of cone-shaped rims 13 that have been projected upwardly at an angle of about fifty-eight degrees (58^{o}) to the plane of the carrierboard 10.

[0016] With reference to Fig. 3, it can be seen that the paperboard carrier 10 has presented its conic rim 13 beneath a typical container seam 14 around the top 15 of the container body side wall 16. The container seen in Fig. 3 has its top necked down at 17 so the diameter of the body is larger than the diameter of the seam 14, and the angle of the neck formation 17 is about sixty degrees (60^{o}). That angular shape works well with a paperboard carrier rim 13 directed at an angle of about 58^{o}. The angular difference between the container neck 17 and the conic rim 13 guarantees that the container top seam 14 will ride on the edge or chime 18 of the closure seam 14.

[0017] The conical shape of the rim structure 13 around the aperture 11 shown in Fig. 1 has been found to be the most accurately produced by moistening a stack of blanks after they have been prepunched in the initial flat state to expose edges for the desired number of container receiving apertures 11 and subjecting the thus moistened blank to the action of a forming die having a bottom plate presenting a male form die to a female form.

[0018] The average necked beverage container with the neck reduced from the body diameter at an angle of about 60^{o} works best, as before touched upon, with formed carriers as in Fig. 1 having the base angle between the carrier plane and the raised conical rim section around 58^{o}. This difference guarantees that the container seam 14 shown

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in Fig. 3 rides on the edge 18 of the formed conical rim 13. In addition, the difference in body and top diameters allows containers to approach each other to be able to support one another while leaving space for the cone 13 and for flat carrier body around each container.

[0019] It will be appreciated by those skilled in the art that various changes and modifications can be made to the invention, as described herein, without departing from the spirit of the invention. Applicants are not to be restricted to the embodiments shown herein for purposes of illustration, but are to be limited only by the claims appended hereto and their equivalents.

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CLAIMS

1. A paperboard carrier for containers in which the containers are each formed with a circumferential seam securing a closure around one end of the container,
the carrier comprising flat paperboard material having container receiving apertures;
a conic configured rim projecting from the paperboard carrier body,
each of said conic rims having a principal diameter less than the diameter of the seams on the closure end of containers to be carried;
said paperboard material having a composition with one ply of strong and tough paper bonded to a layer of less strong paperboard with an elastic bonding agent such that upon applying the conic rim to a container seamed closure the conic rim expands circumferentially sufficiently to pass over a container seam and recover its principal diameter to engage the container seam.

2. A paperboard carrier according to claim 1, wherein said material is kraft paper bonded to a minimum quality paperboard to arrest incipient fractures in the conic configured rim upon expansion thereof to pass over a container seam.

3. The paperboard carrier according to claim 1, wherein said elastic bonding agent is a biodegradable glue.

4. A method of engaging containers in a paperboard carrier as defined in claim 1, where the containers have a top closure sealed to the body of the container wherein the diameter of a circumferential seam on the body closure is greater than the chime at the top closure, the method comprising:
a) forming the paperboard carrier with a container receiving aperture having an initial size to render the aperture in the paperboard in condition for further forming to accommodate a container;
b) forming the paperboard aperture to result in an upstanding conic rim projecting peripherally around the container receiving aperture of a size substantially matching the chime; and
c) rendering the projecting conic rim peripherally surrounding the container receiving aperture in the paperboard sufficiently pliable to fit over the container circumferential seam for the conic rim to engage the chime.

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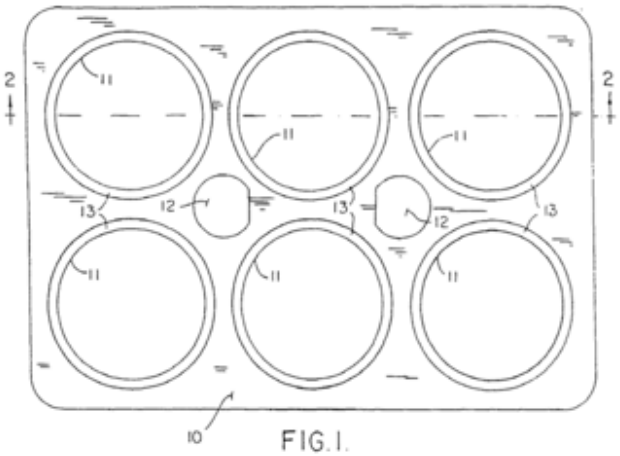

FIG.1.

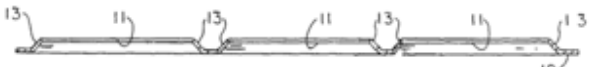

FIG.2.

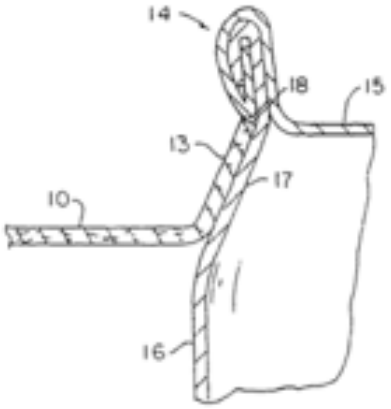

FIG.3.