



US 20090180716A1

(19) **United States**

(12) **Patent Application Publication**  
Steele

(10) **Pub. No.: US 2009/0180716 A1**

(43) **Pub. Date: Jul. 16, 2009**

(54) **PACKAGE HANDLE**

**Publication Classification**

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(51) **Int. Cl.**  
*B65D 33/06* (2006.01)  
*B65D 33/16* (2006.01)

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(52) **U.S. Cl.** ..... 383/26; 383/64

(21) Appl. No.: **12/261,903**

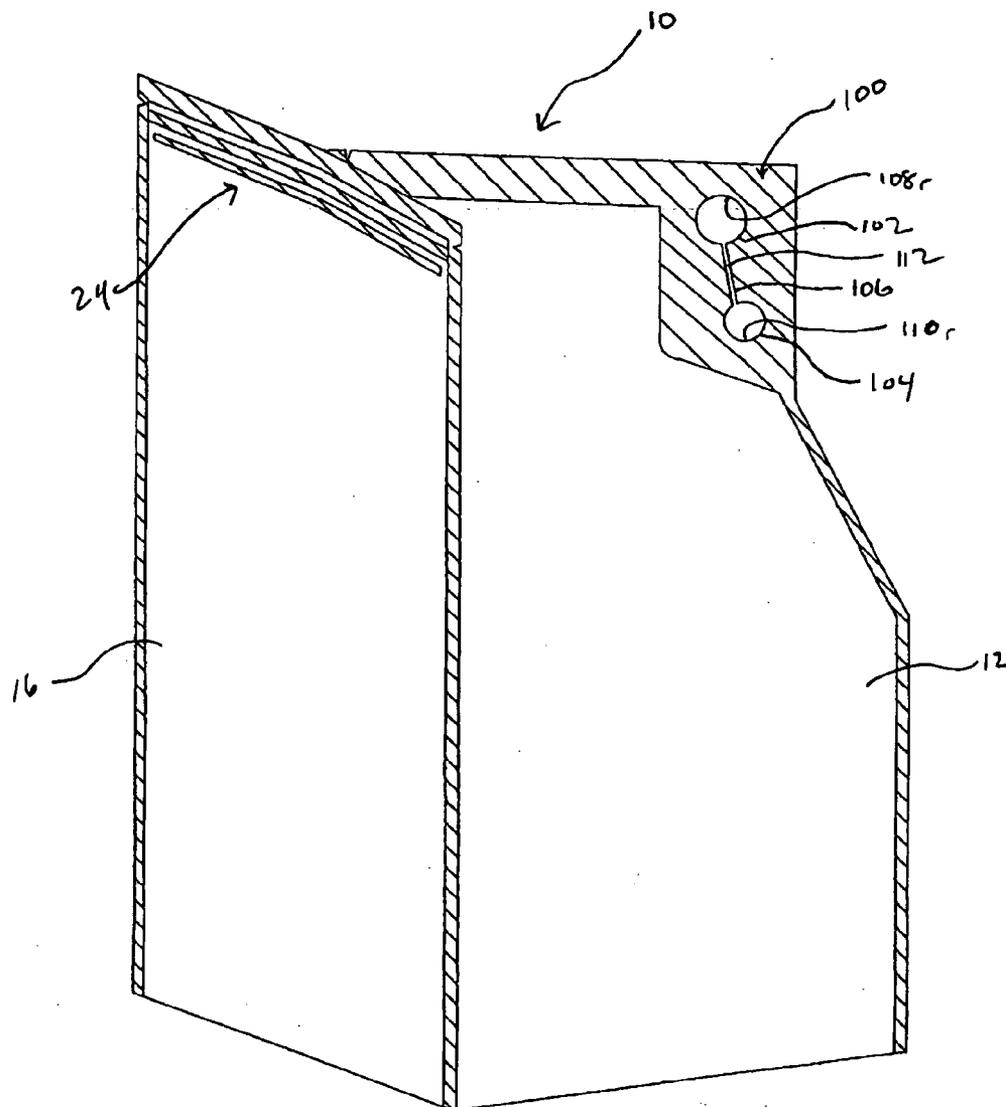
(22) Filed: **Oct. 30, 2008**

**Related U.S. Application Data**

(60) Provisional application No. 61/001,246, filed on Oct. 31, 2007.

(57) **ABSTRACT**

A package having a handle portion is disclosed. The package generally includes opposing panel portions that at least partially define an interior cavity therebetween accessible through an access opening. The handle is generally formed by two or more openings or apertures punched or cut into a portion of the package. The handle can be further defined by a cut or slit line extending between and in communication with the apertures to provide a hingeable flap.



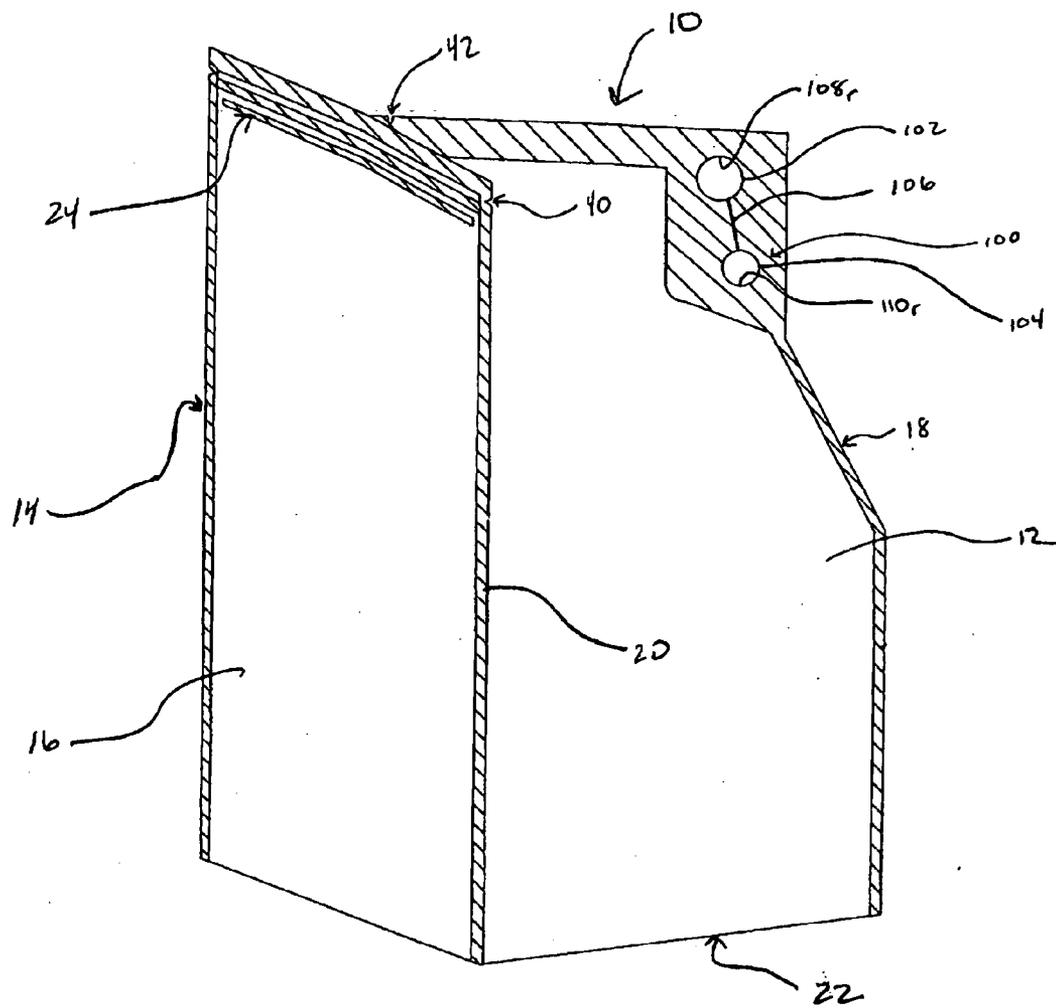
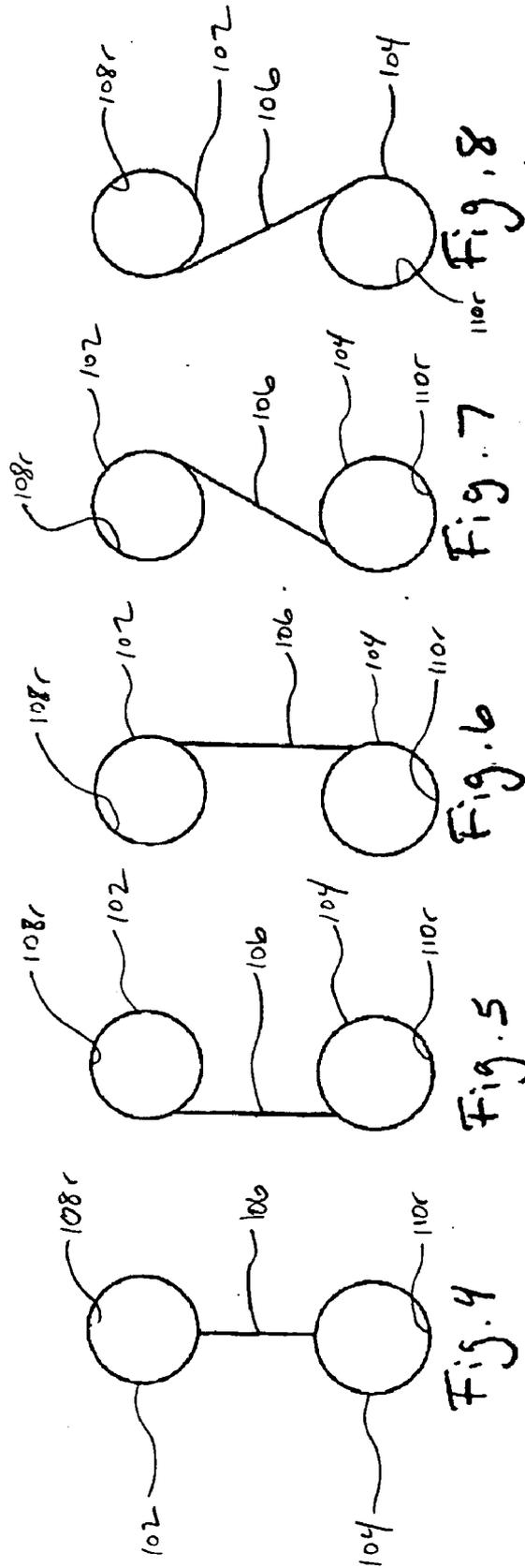
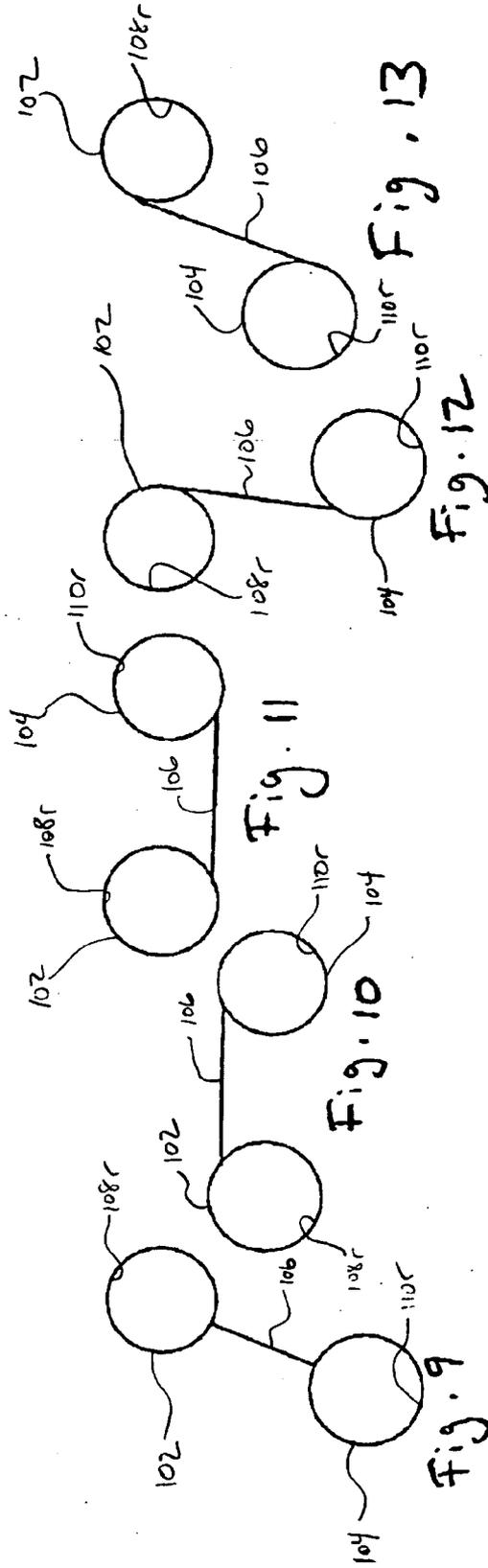


Fig. 2









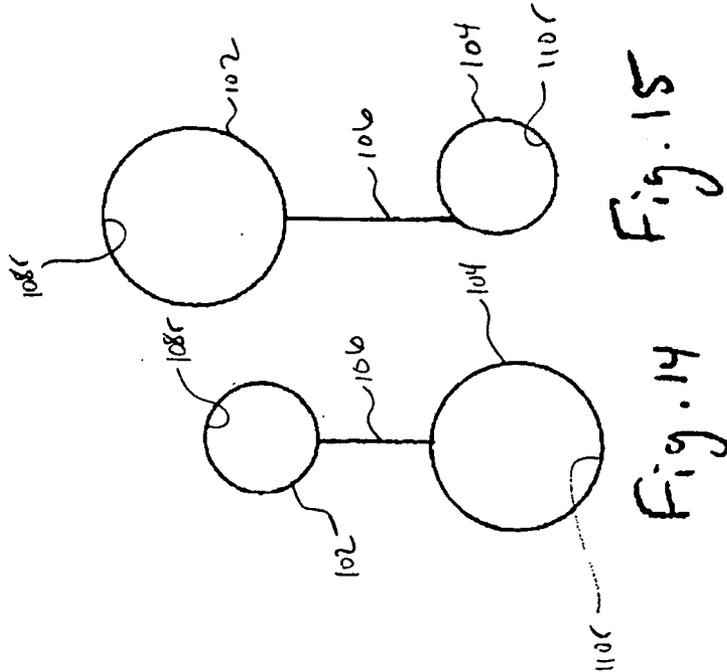


Fig. 14

Fig. 15

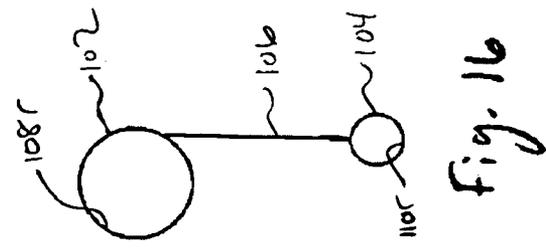


Fig. 16

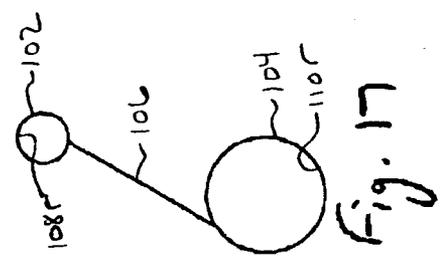


Fig. 17

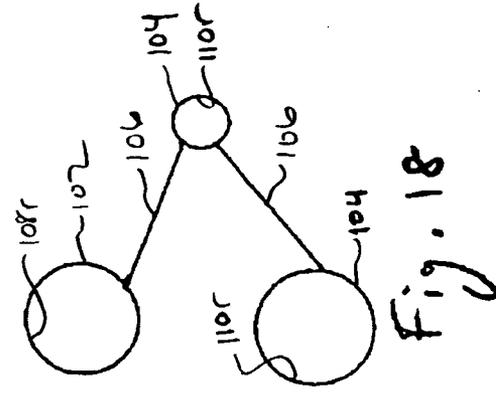


Fig. 18

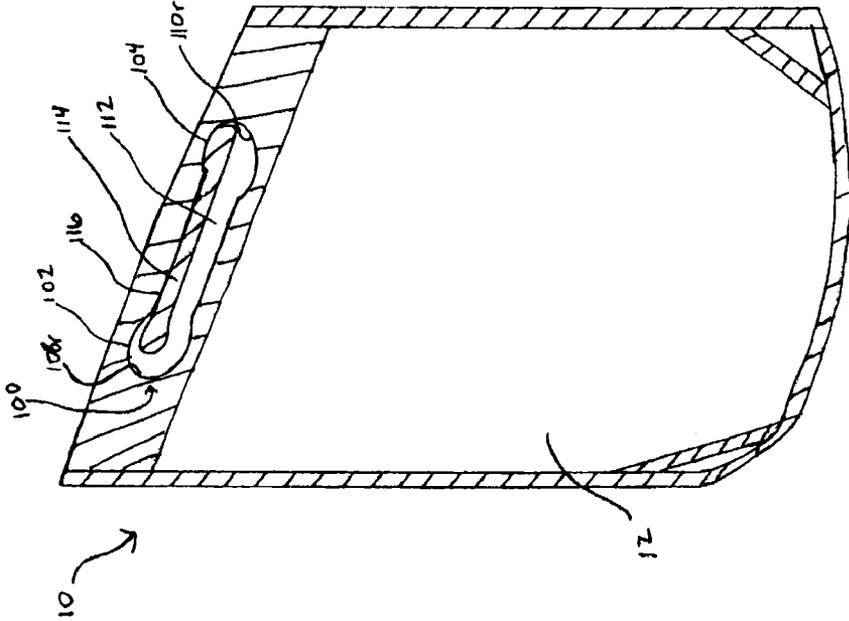


Fig. 20

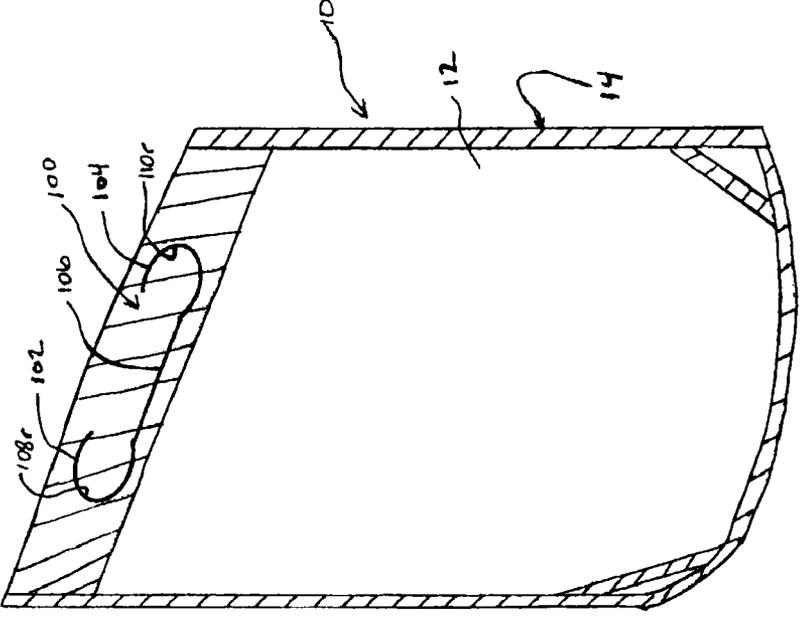
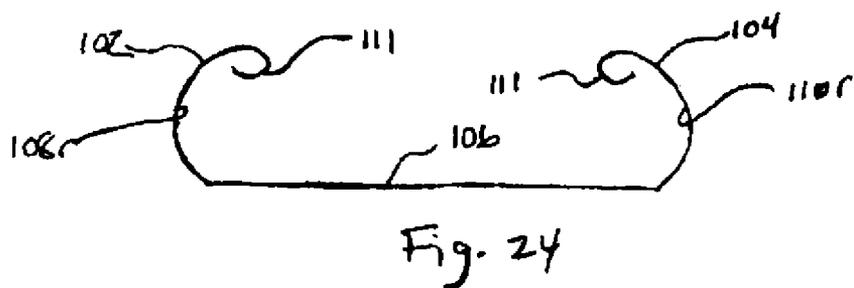
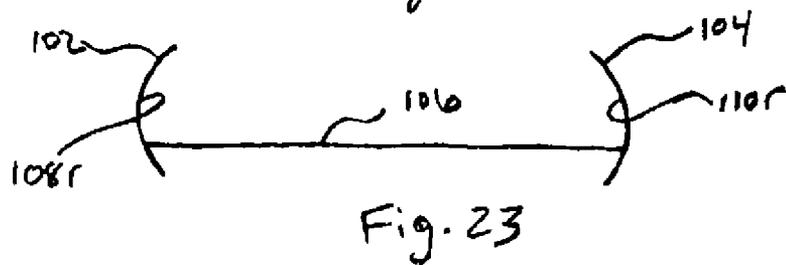
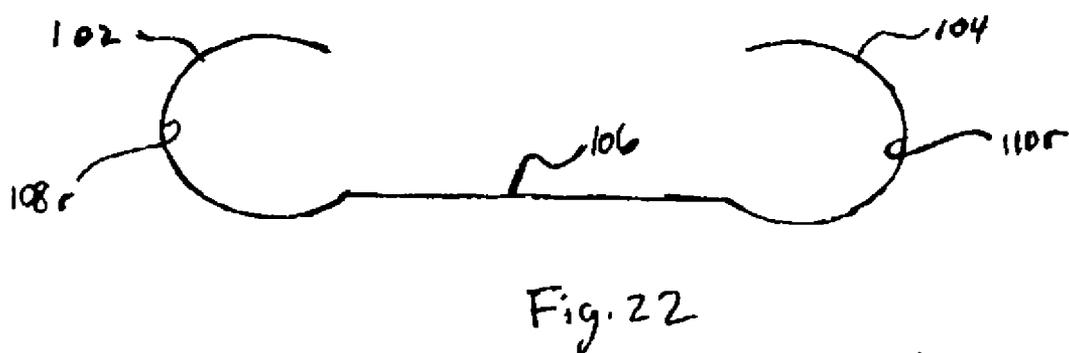
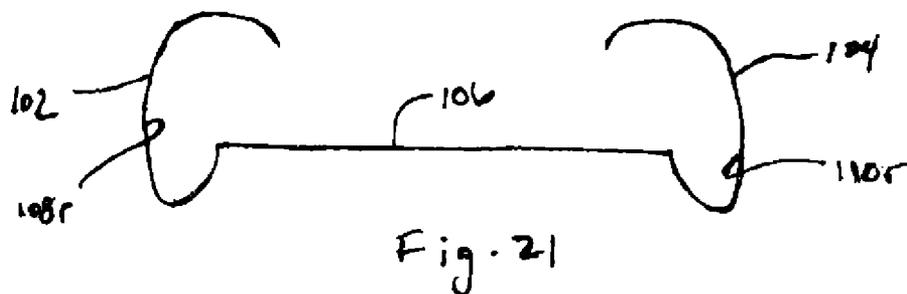


Fig. 19



**PACKAGE HANDLE**

RELATED APPLICATION

[0001] The present application claims the benefit of U.S. Provisional Application No. 61/001,246, filed Oct. 31, 2007 and entitled "PACKAGE HANDLE," the disclosure of which is hereby incorporated by reference in its entirety.

FIELD OF THE INVENTION

[0002] The present invention relates generally to flexible packaging and, more particularly, to packages, and methods for forming and using packages, having a handle generally defined by two or more punched or cut handle openings or apertures, and a cut or slit extending between the apertures.

BACKGROUND OF THE INVENTION

[0003] Conventional flexible packages generally include external or integrated sliding means or other devices designed to allow a user to selectively gain access into the pouch or package. U.S. Pat. Nos. 4,913,561, 5,692,837, 6,186,663 and 7,040,810 disclose such packaging. Other closeable devices to provide access into the pouch or package are known as well.

[0004] In general, there are two common handles incorporated into or provided with conventional packages, enabling the user to manipulate or handle and pour out the contents of a particular package. A first common handle is defined in conventional packages by punching an oval handle into a portion of the package. Another handle option utilized in the industry is created by punching one or more holes in the package. When two holes are formed in the package, they are generally spaced and sized to allow an end user to insert his or her fingers in the relatively small holes. An inherent problem with these conventional handle configurations becomes apparent when the pouch or package is used to hold relatively heavy or awkward contents such as granular material (gravel, cat litter, sidewalk salt, fertilizer, etc.), liquids, food materials, and the like. In such circumstances, package manufacturers attempt to increase the support or carrying strength of the handle by utilizing stronger or thicker materials, or by providing one or more extra layers of material at the handle portion. A further attempt to strengthen the handle of such packages is to provide oval handles with larger outer radii.

[0005] Unfortunately, each of these conventional handle solutions present additional manufacturing and materials costs in forming the package. Increased manufacturing costs are required to provide the machinery necessary to punch through the additional or thicker layers of material. This, consequently, mandates additional energy costs in forming the handle portion of the packages. Material costs are increased due to the need to use stronger film layers as well as the need to include more layers in the package than would otherwise be required. Another related problem arises when these conventional handles are utilized in packages holding heavy contents. Namely, finger and oval handle holes can create discomfort for the end user when the thicker punched material around the formed holes digs into the user's hand or fingers.

[0006] As a result, there is a need for a flexible package that substantially solves the above-referenced problems with conventional package handle designs, configurations, and manufacturing methods.

SUMMARY OF THE INVENTION

[0007] The present invention solves many of the problems facing the flexible packages and packaging industry. Embodiments of the present invention are directed to a package generally including at least one front and back panel joined at least partially together to define an interior accessible through an access opening. The interior is capable of storing and dispensing product and other objects or materials. The package further includes two or more openings such as punch or cut apertures and a slit or cut line that extends between and in communication with the apertures. Additional apertures can be utilized as well. In addition, the apertures can be aligned and sized in a myriad of shapes and configurations to provide the package handle. Generally, the slit line extending between the apertures traverses a central portion of the holes so that a flap is created. The flap is hingeable during use to provide a level of protection for the hand of the end user.

[0008] By utilizing the at least two openings or apertures and a slit configuration of the present invention in defining the package handle, many of the inherent problems of conventional package handles are eliminated. First, it is relatively easy to punch or cut defined apertures in a package, even those portions of the package formed of thicker or multiple layers of material. This in turn reduces energy, tooling costs and reduces manufacturing costs in general when compared to the costs associated with punching a larger conventional oval handle in the package. For instance, tooling used to punch or cut holes with larger radii is easier to use and less expensive than tooling used to punch larger oval handles. Second, the slit line is relatively easy to cut into the package. Further, the traversal of the cut line with the spaced apertures can create a protective hingeable flap that is generally cupped in the hands of the package user during pouring and handling, reducing discomfort normally associated with the jagged or sharp edges or cut surfaces of traditional packages.

[0009] The above summary of the invention is not intended to describe each illustrated embodiment or every implementation of the invention. The figures in the detailed description that follow more particularly exemplify these embodiments.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] The invention may be more completely understood in consideration of the following detailed description of various embodiments of the invention in connection with the accompanying drawings, in which:

[0011] FIG. 1 is a perspective view of a flexible package having a handle portion in accordance with an embodiment of the present invention;

[0012] FIG. 2 is a perspective view of the package embodiment of FIG. 1 with a cut line and corresponding separation;

[0013] FIG. 3 is a perspective view of the package embodiment of FIG. 1 with handle separation and a hingeable flap;

[0014] FIG. 4 is a schematic view of handle openings and a cut line configuration in accordance with an embodiment of the present invention;

[0015] FIG. 5 is a schematic view of handle openings and a cut line configuration in accordance with an embodiment of the present invention;

[0016] FIG. 6 is a schematic view of handle openings and a cut line configuration in accordance with an embodiment of the present invention;

[0017] FIG. 7 is a schematic view of handle openings and a cut line configuration in accordance with an embodiment of the present invention;

[0018] FIG. 8 is a schematic view of handle openings and a cut line configuration in accordance with an embodiment of the present invention;

[0019] FIG. 9 is a schematic view of handle openings and a cut line configuration in accordance with an embodiment of the present invention;

[0020] FIG. 10 is a schematic view of handle openings and a cut line configuration in accordance with an embodiment of the present invention;

[0021] FIG. 11 is a schematic view of handle openings and a cut line configuration in accordance with an embodiment of the present invention;

[0022] FIG. 12 is a schematic view of handle openings and a cut line configuration in accordance with an embodiment of the present invention;

[0023] FIG. 13 is a schematic view of handle openings and a cut line configuration in accordance with an embodiment of the present invention;

[0024] FIG. 14 is a schematic view of handle openings and a cut line configuration in accordance with an embodiment of the present invention;

[0025] FIG. 15 is a schematic view of handle openings and a cut line configuration in accordance with an embodiment of the present invention;

[0026] FIG. 16 is a schematic view of handle openings and a cut line configuration in accordance with an embodiment of the present invention;

[0027] FIG. 17 is a schematic view of handle openings and a cut line configuration in accordance with an embodiment of the present invention; and

[0028] FIG. 18 is a schematic view of handle openings and a cut line configuration in accordance with an embodiment of the present invention.

[0029] FIG. 19 is a perspective view of a flexible package having a handle portion in accordance with an embodiment of the present invention;

[0030] FIG. 20 is a perspective view of the package embodiment of FIG. 19 with handle separation and a hingeable flap;

[0031] FIG. 21 is a schematic view of handle openings and a cut line configuration in accordance with an embodiment of the present invention;

[0032] FIG. 22 is a schematic view of handle openings and a cut line configuration in accordance with an embodiment of the present invention;

[0033] FIG. 23 is a schematic view of handle openings and a cut line configuration in accordance with an embodiment of the present invention; and

[0034] FIG. 24 is a schematic view of handle openings and a cut line configuration in accordance with an embodiment of the present invention.

[0035] While the invention is amenable to various modifications and alternative forms, specifics thereof have been shown by way of example in the drawings and will be described in detail. It should be understood, however, that the intention is not to limit the invention to the particular embodiments described. On the contrary, the invention is to cover all modifications, equivalents, and alternatives falling within the

spirit and scope of the invention as defined by the appended claims. For illustrative purposes, hatching or shading in the figures is provided to demonstrate sealed portions and/or integrated devices for the package.

#### DETAILED DESCRIPTION OF THE INVENTION

[0036] A purpose of the present invention is to allow for a package, such as a flexible package, to be carried or otherwise manipulated with a handle punched or cut into a portion of the package. The various embodiments and teachings provided herein can also be employed with a rigid or semi-rigid package.

[0037] Referring to FIGS. 1-3, a flexible package 10 and components and configurations in accordance with embodiments of the present invention are shown. The package 10 generally includes a front panel portion 12, a back panel portion 14, and could include an access device 24. In addition, the package 10 can include side panels 16, 18, a top panel portion 20, and a bottom panel portion 22. In the depicted embodiments, the joining and/or shaping of the above-referenced panels define the package 10 with an internal cavity 25, generally having an adjustable internal volume capacity. The panels 12-22 are often referred to as “webs” or films. Each panel can be formed from an individual web or, alternatively, each of the panels can be portions of a larger single web, wherein the large web is folded, cut and/or shaped to define the individual panel portions and, ultimately, the shape and size of the package 10. Further, in one embodiment, the top 20 and bottom 22 panel portions can be formed by the selective joining of the respective end portions of the panels 12, 14 some size measurably longer than the panels 16, 18 to provide necessary material for folding to form said panels 20, 22. Regardless of the formation techniques or the use of separate web panels, a designated or distinguishable panel portion is defined for each panel. Further, one or more of the panel portions can be gusseted.

[0038] In an upright flexible package 10, the side panels 16, 18 can be defined as those panels with a distance or width measurement between the longitudinal sides being some distance shorter than a width distance measured between the longitudinal sides on adjacent front 12 and/or back panels 14. As such, these side panels 16, 18 can be comparably smaller in width than the panels 12, 14 to provide for the narrower and more efficient channel for routing exiting material held within the inner cavity 25. Alternative panel sizes, shapes and configuration are envisioned as well.

[0039] The package panel portions 12-22 are generally constructed of flexible sheet material such as polyethylene, polyester, metal foil, polypropylene, or polyethylenes laminated with other materials such as nylon, polyester, and like films. To provide for increased barrier properties, embodiments can use composite layers of said materials and material of the like. Generally, in such composite embodiments, a material having preferred sealing characteristics can be joined, bonded or laminated to a material having a different preferred characteristic (i.e., beneficial oxygen barrier properties). Regardless, single sheets, composites/laminates, and a myriad of other materials and techniques known to one skilled in the art may be implemented based on particular usage and manufacturing needs without deviating from the spirit and scope of the present invention. The package 10 and its portions can be formed to provide a stand-up pouch, pre-made pouch, bag-top, one formed and filled on a “form-fill-seal” machine, and other known package designs and con-

figurations. Examples of packages capable of incorporating the handle design or configuration of the present invention can be found in commonly-owned U.S. Pat. Nos. 7,040,810, D549,594, and 7,207,717, with each being incorporated herein by reference in their entirety. U.S. Patent Publication Nos. 2004/0031244 and 2005/0069227, as well as U.S. Pat. Nos. 7,207,717 and 7,040,810, each of which are also commonly-owned by the present applicant, provide further examples of packages capable of incorporating the handle of the present invention, and are therefore also incorporated herein by reference in their entirety. Other known package designs and packaging techniques can be adapted to incorporate the handle design or configuration of the present invention as well.

**[0040]** The access device **24** can be a re-closeable device that is disposed on or integrated to at least one of the panel portions **12-22**, including one or more of the side panel portions, gusseted or non-gusseted. The access device **24** can be adapted for re-closeable use. Alternative embodiment of the access device **24** can be single or minimal use access devices, folding flaps, spouts, holes, fitments, and the like. For instance, a peel seal as described herein can be included without a zipper interlock portion for such embodiments where re-closeability is not desirable or needed. Further, the access device can be disposed along any portion of the package **10** without deviating from the present invention. In addition, various tabs, slits, tears and other structural configurations, such as slits **40, 42**, can be included to facilitate access to such an access device **24**. Various embodiments of the package **10** do not require the use of any access device **24**. For example, the package **10** of FIGS. **19-20** does not require an access device **24**, but such a device **24** could be included if the desired use of the package **10** dictates such a configuration.

**[0041]** While zipper-sealing devices may be described herein for demonstrative purposes, re-sealable adhesives/tapes, snap or screw cap device, snap fastening, hook and latch (Velcro®) fastening, a hinged spout, a fitment, and other like techniques and devices known to one skilled in the art can be employed for use as the device or access opening **24**. Conventional "peel seals" known to one skilled in the art can also be implemented in conjunction with access devices **24**. In various embodiments, the access device **24** is attached to at least one of the side panels **16, 18** (gusseted or non-gusseted) such that the device **24** serves as a pour spout out the relatively smaller side panel, in comparison to the front **12** and back **14** panels. However, it is envisioned that any one of the panels, or a plurality thereof, can be equipped with the device **24**. The device **24** can be placed in a predetermined position manually or with the assistance of a system such as known machines and methods. Commonly known machines, such as those disclosed in U.S. Pat. Nos. 6,019,512 and 6,516,850, are therefore incorporated herein by reference in their entirety. In addition, other machines consistent with that disclosed herein, and technologies for attaching access opening devices to flexible packaging sheets or webs are also envisioned for use.

**[0042]** As shown in FIGS. **1-3**, the package **10** includes a handle portion **100**. The handle portion **100** can be constructed of one or more material layers. The thickness of the handle portion can be greater than that of the other portions of the package to facilitate the appropriate strength needed to accommodate the pulling and forces exerted on the handle. The handle portion **100** generally includes two or more openings such as punches, slits, holes or apertures **102, 104**. The

openings **102, 104** can take on various shapes and sizes. For instance, the two openings **102, 104** can be the same size, one can be bigger than the other, and their respective shapes can be circular, semi-circular, oval, square, rectangular and the like. The openings **102, 104** also include radius portions **108r, 110r**, which are generally defined at the back or outer radius of the respective apertures. These portions **108r, 110r** can also widely vary. In those embodiments employing square, rectangular or like non-circular openings **102, 104**, the back portion **108r, 110r** of the openings will match the shape of the openings **102, 104** and will not generally form a radius shape. For those packages adapted to hold heavy material content, for example, the radius portions are generally required to be larger than those implemented in packages configured for storing and holding lighter contents. Forces generated from handling the package are better distributed along relatively larger radius portions, thus reducing the likelihood of tearing or other detrimental deformation at the handle portion **100**. However, it is also envisioned that the handle configuration of the present invention can be implemented in smaller packages, regardless of the content weight.

**[0043]** The openings **102, 104** are generally formed in the package using a punch machine, tooling or a similar apparatus known in the art. Additionally, the openings **102, 104** can be cut into the handle portion **100** either manually or by machine operation. As shown in the embodiment of FIGS. **1-3**, the openings **102, 104** and the handle portion **100** can be provided at a portion of the package **10** distal the access opening or device **24** to enable an end user to better hold the package **10** and fill or empty its contents through the opening. However, it is envisioned that the handle portion **100** can be provided at a myriad of other locations along the package **10**, as demonstrated in FIGS. **19-20**. Further, more than one handle portion **100** in accordance with the present invention may be used with a particular package **10**. In addition, punch or slit radiuses **102, 104** can be employed, defining an opening or radius through material of the handle **100** short of a fully formed aperture, as depicted in FIGS. **19-24**. For example, a semi-circle, radiused material breach, split, punched area, slit or other material opening or shape can be used for the openings **102, 104**. As demonstrated in FIG. **20**, such radiused semi-circle openings **102, 104** are opened up to define an aperture when the user manipulates the hingeable handle flap **114**. FIGS. **21-24** depict such shapes that can be used for the openings **102, 104**, but are not intended to be limiting. Moreover, curls or other like cuts or shapes **111** can be formed at the end of or along portions of the openings **102, 104** (e.g., FIG. **24**) to increase durability of the openings **102, 104** to reduce tears or ripping of the material around the openings **102, 104**.

**[0044]** The handle portion **100** also includes at least one cut or slit line **106**. The cut line **106** extends between and is in communication with each of the apertures **102, 104**. The cut **106** can be made in the handle portion **100** with a blade or other known techniques or apparatus. In one embodiment, the cut line **106** traverses or intersects a front or inner radius portion of the apertures **102, 104**, as shown in FIG. **1**. However, the cut **106** can contact the apertures **102, 104** at any location or along any portion, surface or tangent. Examples of opening and cut configurations are shown in FIGS. **4-18**, and **21-24**. The thickness and depth of the cut varies, depending on the required package application. In an alternative embodiment, the cut line **106** can be laser scored or otherwise perforated. As such, the perforation can be broken or opened

to facilitate use of the handle. In addition, the cut line 106 can be linear, curvilinear, undulating or take on various other configurations without departing from the spirit and scope of the present invention.

[0045] As demonstrated in FIGS. 2-3 and 20, implementation of the cut line 106 in the handle portion 100 provides a generally elongate separation or gap 112 extending between the apertures 102, 104 such that a handle flap 114 is created. The handle flap 114 is generally foldable or hingeable about a fold or hinge line 116. The thickness and size of the handle flap 114 can vary greatly and depends on the thickness of the handle portion 100, the material or layers of the handle portion 100, as well as the size of the apertures 102, 104 and their respective radius portions 108r, 110r. Again, packages 10 adapted to carry or hold heavier contents will likely include thicker materials at the handle portion 100, multiple layers of materials, and/or apertures 102, 104 with larger radius portions 108r, 110r.

[0046] As the user inserts fingers or a hand into the area of the gap 112, the flap 114 is folded back away from the separation 112 and toward the package 10. Accordingly, the flap 114 provides a protective layer of material between the user's fingers or hand and the package. This is particularly beneficial when lifting or handling a heavy package 10, to reduce the discomfort generally caused when sharp package edges or surfaces can dig into the user's hand.

[0047] FIGS. 4-18 and 21-24 show various designs and configurations available for openings 102, 104 and cut line 106. However, these exemplary configurations are not intended to be limiting as a myriad of other designs can be implemented without deviating from the spirit and scope of the present invention.

[0048] Various figures and descriptions disclose features and accessories. However, it must be noted that these features are merely illustrative in nature and may be placed in varying locations and under varying configurations, and still be consistent with the present invention. In addition, the shape and configuration for the panel portions are also merely illustrative and can be altered without deviating from the spirit and scope of the present invention. Any of the panel portions, or selected regions thereof, can include various aesthetic and functional graphics, such as logos, instructions, advertising, bar codes, and the like. These graphics can run transverse, parallel, or even in a diagonal orientation to the longitudinal panel edges discussed herein.

[0049] The present invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof, and it is, therefore, desired that the present embodiment be considered in all respects as illustrative and not restrictive. Similarly, the above-described methods and techniques for forming the present invention are illustrative processes and are not intended to limit the methods of manufacturing/forming the present invention to those specifically defined herein. A myriad of various unspecified steps and procedures can be performed to create or form the inventive package 10.

What is claimed is:

1. A flexible package, comprising:
  - a plurality of flexible panel portions defining an interior portion of the flexible package adapted to hold material contents;
  - a handle portion defined in at least one of the flexible panel portions, the handle portion defined by;

- a first aperture defined in the at least one flexible panel portion;
  - a second aperture defined in the at least one flexible panel portion, proximate the first aperture; and
  - a slit portion extending between and in operable communication with the first and second apertures such that a hingeable flap is defined extending between the first and second apertures.
2. The package of claim 1, wherein the slit portion is a perforated and detachable slit.
  3. The package of claim 1, wherein the plurality of flexible panel portions includes at least a front panel portion and a back panel portion.
  4. The package of claim 1, wherein at least one of the plurality of flexible panel portions includes a re-closeable access device.
  5. The package of claim 4, wherein the re-closeable access device is a re-closeable zipper device.
  6. The package of claim 1, wherein the slit portion is a laser-scored perforation.
  7. The package of claim 1, wherein the first and second apertures are substantially the same size.
  8. The package of claim 1, wherein the first and second apertures are different sizes.
  9. The package of claim 1, wherein the shape of at least one of the first and second apertures is selected from a group consisting of: circular, oval, square, semi-circular and rectangular.
  10. A flexible package, comprising:
    - a plurality of flexible panel portions defining an interior portion of the flexible package adapted to hold material contents;
    - a handle portion defined in at least one of the flexible panel portions, the handle portion defined by;
      - a first generally circular aperture defined in the at least one flexible panel portion and including an inner radius portion;
      - a second generally circular aperture defined in the at least one flexible panel portion and including an inner radius portion; and
      - a slit portion extending between and in operable communication with the inner radius portions of the first and second generally circular apertures such that a hingeable flap is defined extending between the first and second generally circular apertures.
  11. The package of claim 10, wherein the slit portion is a perforated and detachable slit.
  12. The package of claim 10, wherein the plurality of flexible panel portions includes at least a front panel portion and a back panel portion.
  13. The package of claim 10, wherein at least one of the plurality of flexible panel portions includes a re-closeable access device.
  14. The package of claim 13, wherein the re-closeable access device is a re-closeable zipper device.
  15. The package of claim 10, wherein the first and second apertures are substantially the same size.
  16. The package of claim 10, wherein the first and second apertures are different sizes.
  17. The package of claim 10, wherein each of the first and second generally circular apertures include an outer radius

portion opposite the inner radius portion to facilitate distribution of the forces exerted on the handle portion during use.

**18.** A method of forming a package with a handle, comprising:

providing a plurality of flexible panel portions defining an interior portion of the flexible package adapted to hold material contents;

forming a first opening in at least one of the flexible panel portions;

forming a second opening in the at least one flexible panel portion proximate the first opening; and

forming a slit portion extending between and in operable communication with the first and second openings such that a hingeable flap is defined extending between the first and second opening.

**19.** The method of claim **18**, wherein at least one of the first and second openings is formed to a shape selected from a group consisting of: circular, oval, square, semi-circular, and rectangular.

**20.** The method of claim **18**, further including providing a re-closeable access device to at least one of the flexible panel portions.

**21.** A flexible package, comprising:

a plurality of flexible panel portions defining an interior portion of the flexible package adapted to hold material contents;

a handle portion defined in at least one of the flexible panel portions, the handle portion defined by;

a first opening defined in the at least one flexible panel portion;

a second opening defined in the at least one flexible panel portion, proximate the first opening; and

a slit portion extending between and in operable communication with the first and second openings such that a hingeable flap is defined extending between the first and second openings.

**21.** The flexible package of claim **20**, wherein at least one of the first and second openings is a radiused breach in the at least one flexible panel portion.

**22.** The flexible package of claim **20**, wherein at least one of the first and second openings is generally semi-circular in shape.

**23.** The flexible package of claim **20**, wherein at least one of the first and second openings is generally circular in shape.

\* \* \* \* \*