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(54) **PRODUCT CONTAINERS WITH ROLLED GOODS**

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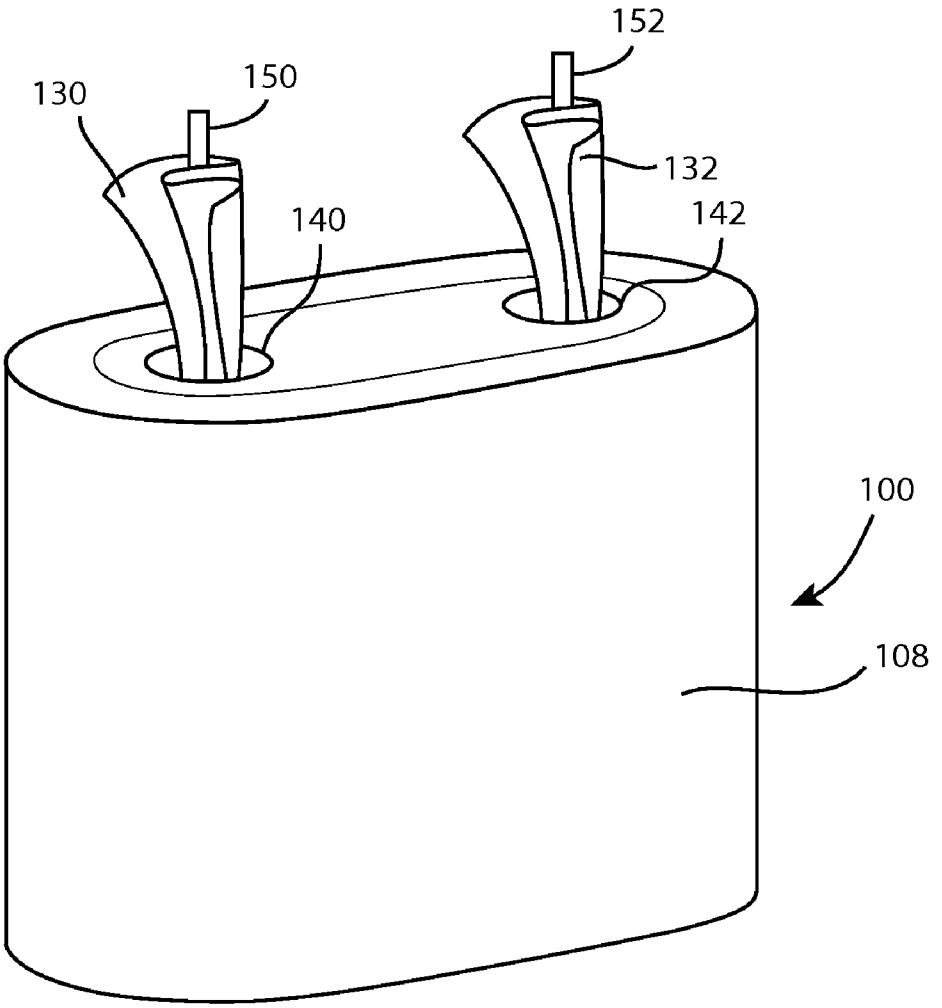
(57) **ABSTRACT**

The present invention relates to a product container for rolls of product, particularly coreless rolls of trash bags. It may comprise a top panel, a bottom panel, a flexible outer wrap and multiple rolls of product. The top panel and the bottom panel may cover each or both ends of the rolls of product while the flexible outer wrap is placed securely around the top panel, the bottom panel, and the rolls of product. A leader may be attached to an innermost unit of the roll of product to facilitate removal of the innermost unit. To enable pulling and separating adjacent individual units from the product container, a partial separation may be defined between adjacent individual units.



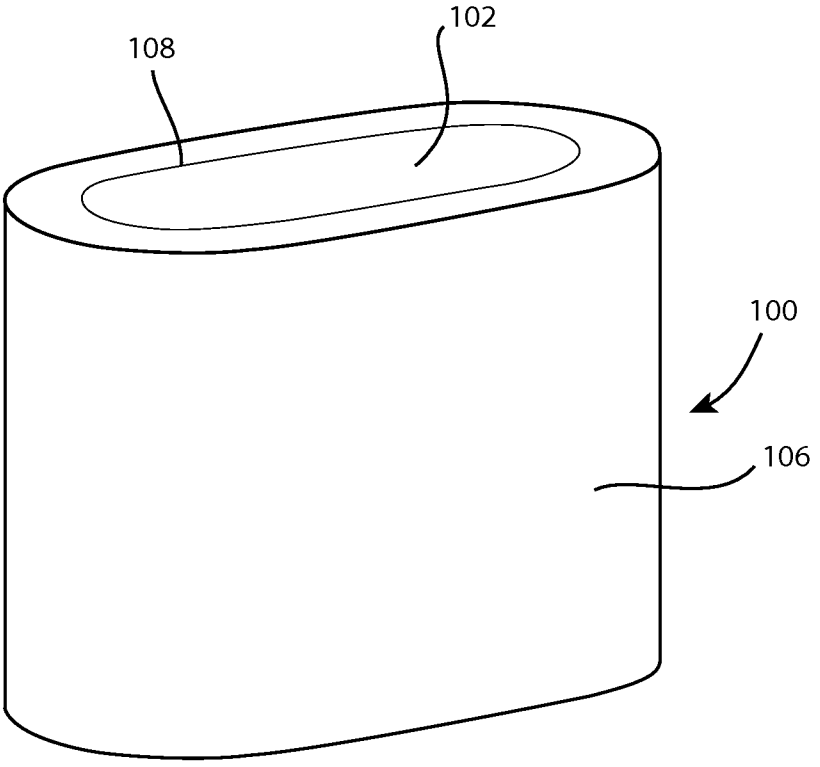


Fig. 1A

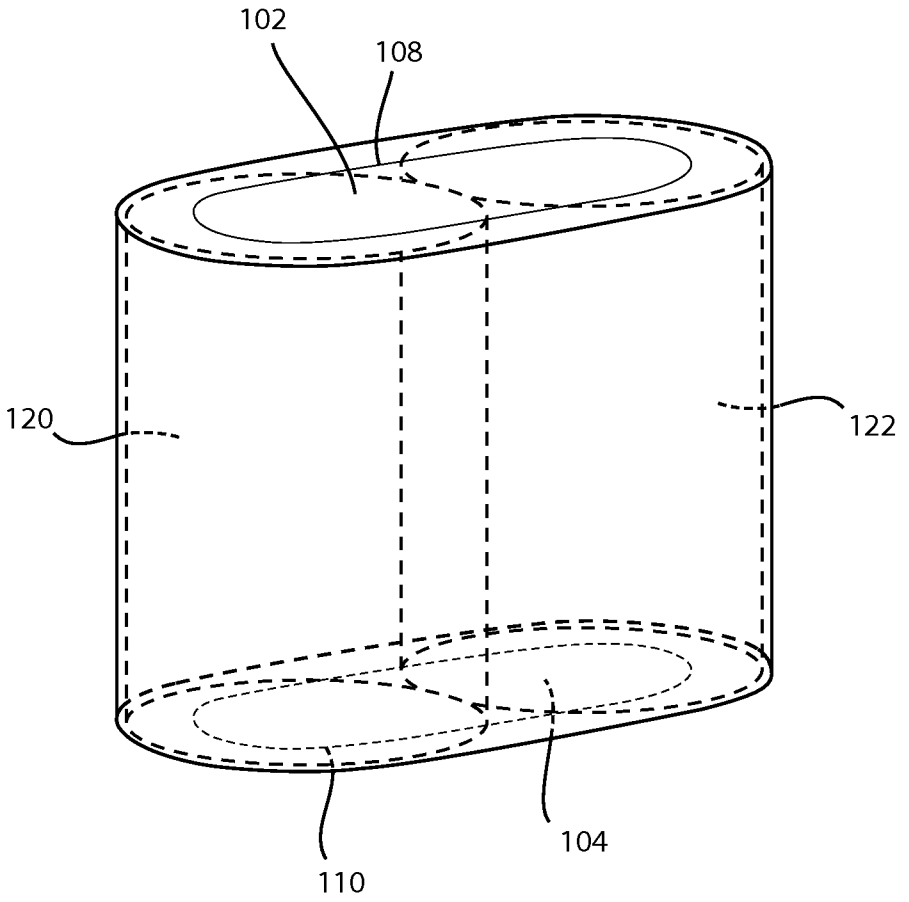


Fig. 1B

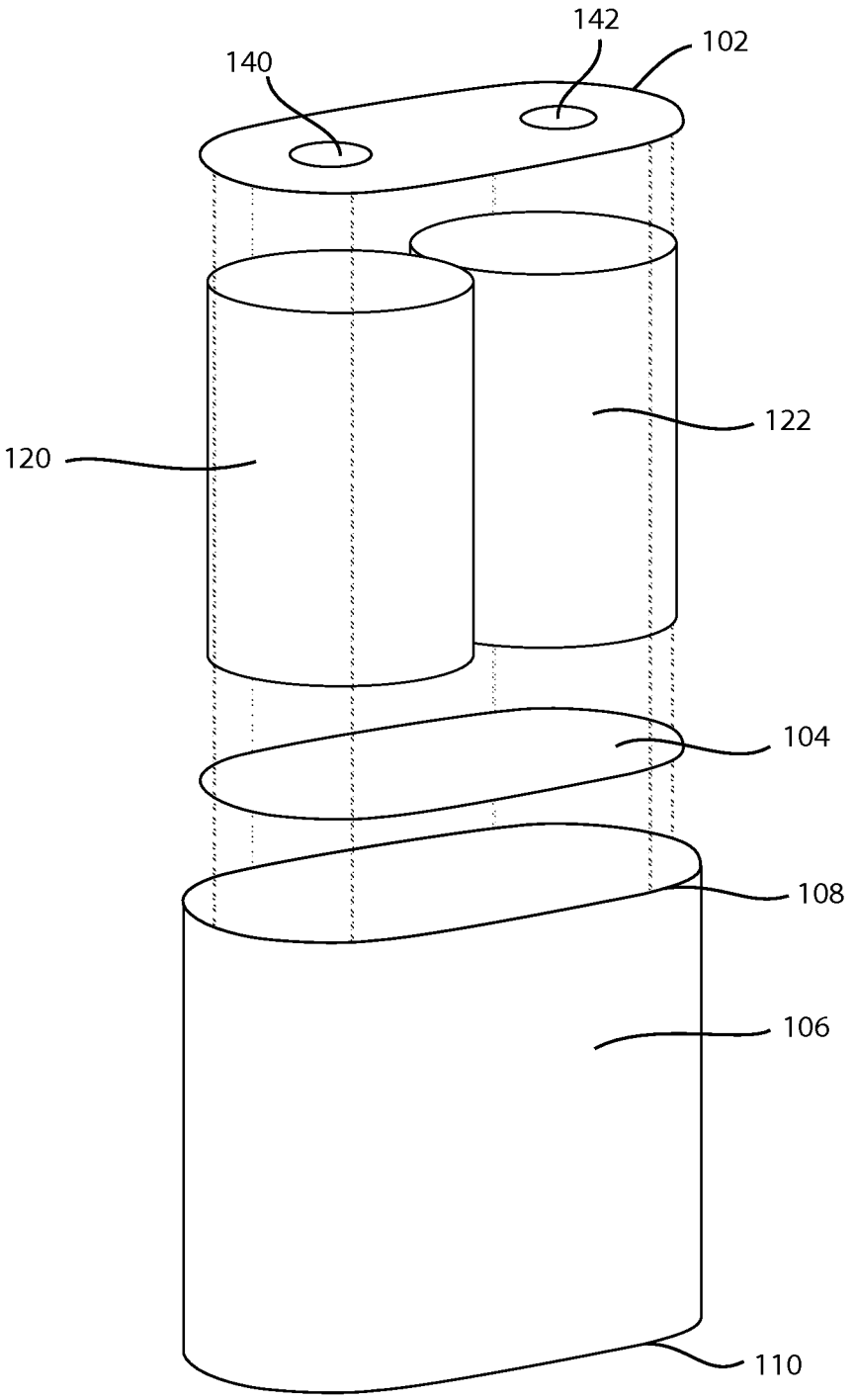


Fig. 2

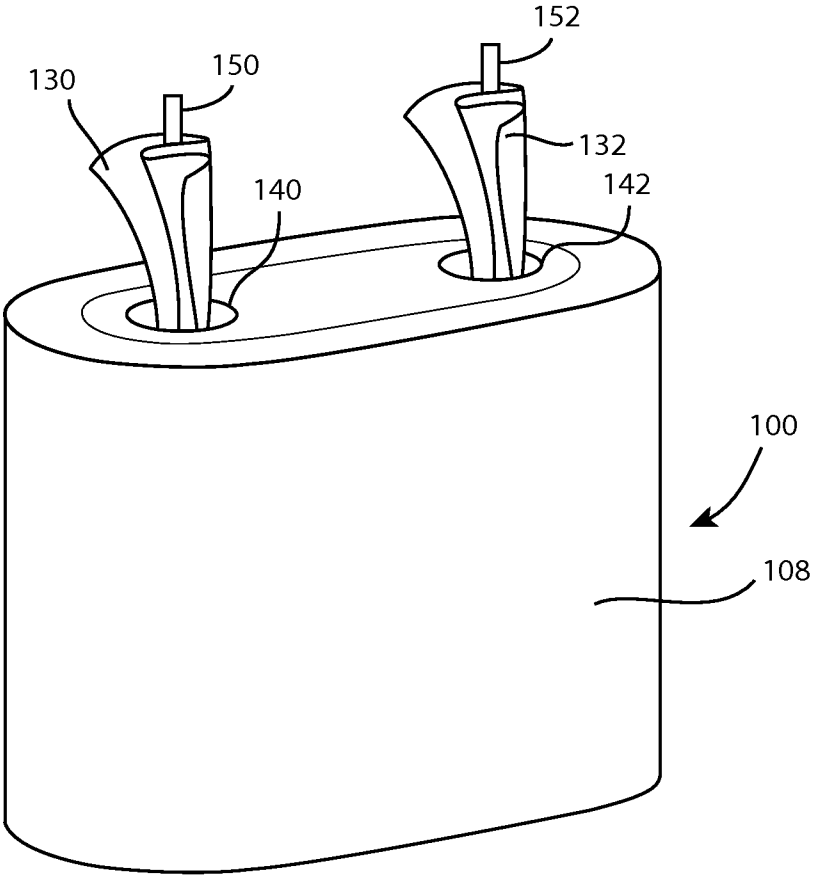


Fig. 3

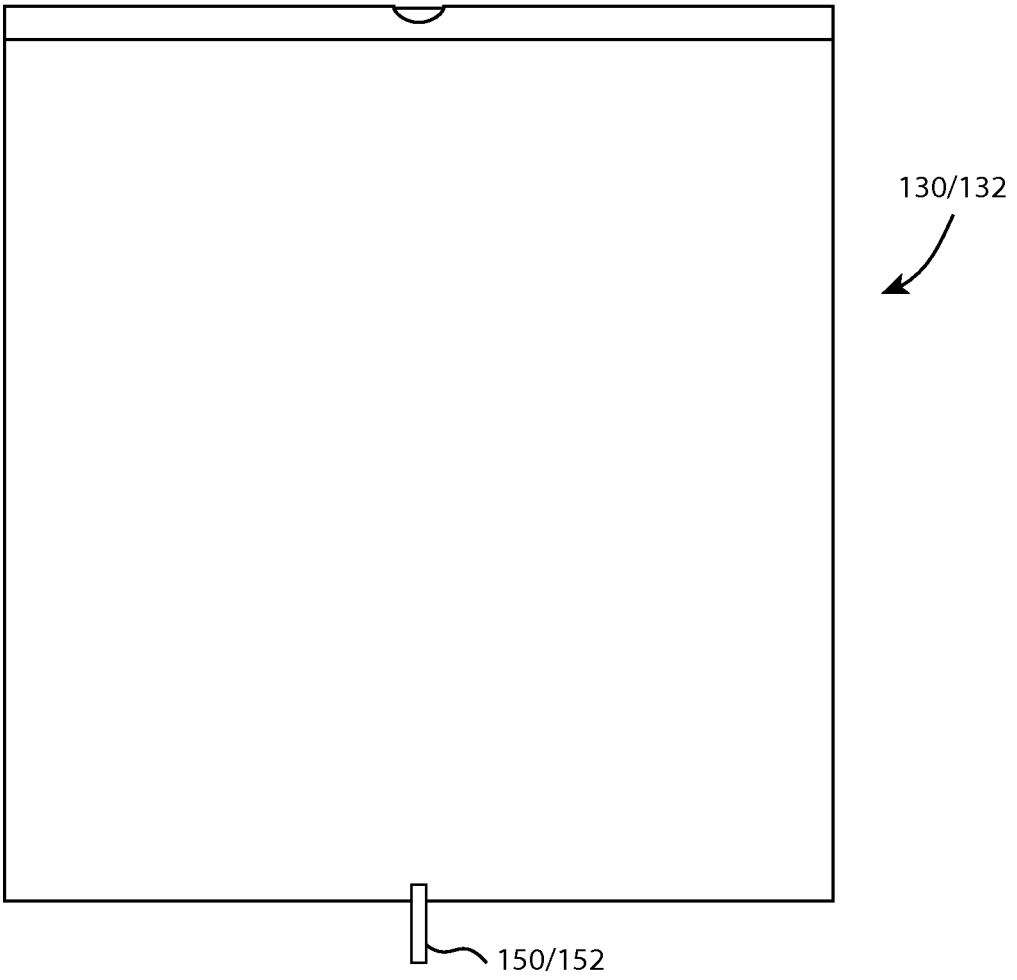


Fig. 4

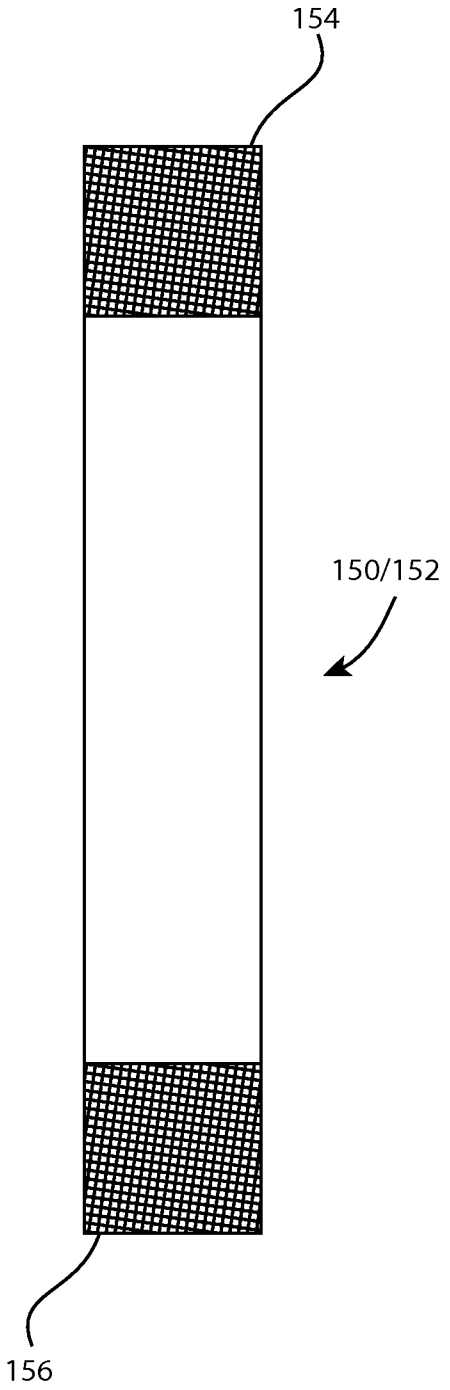


Fig. 5

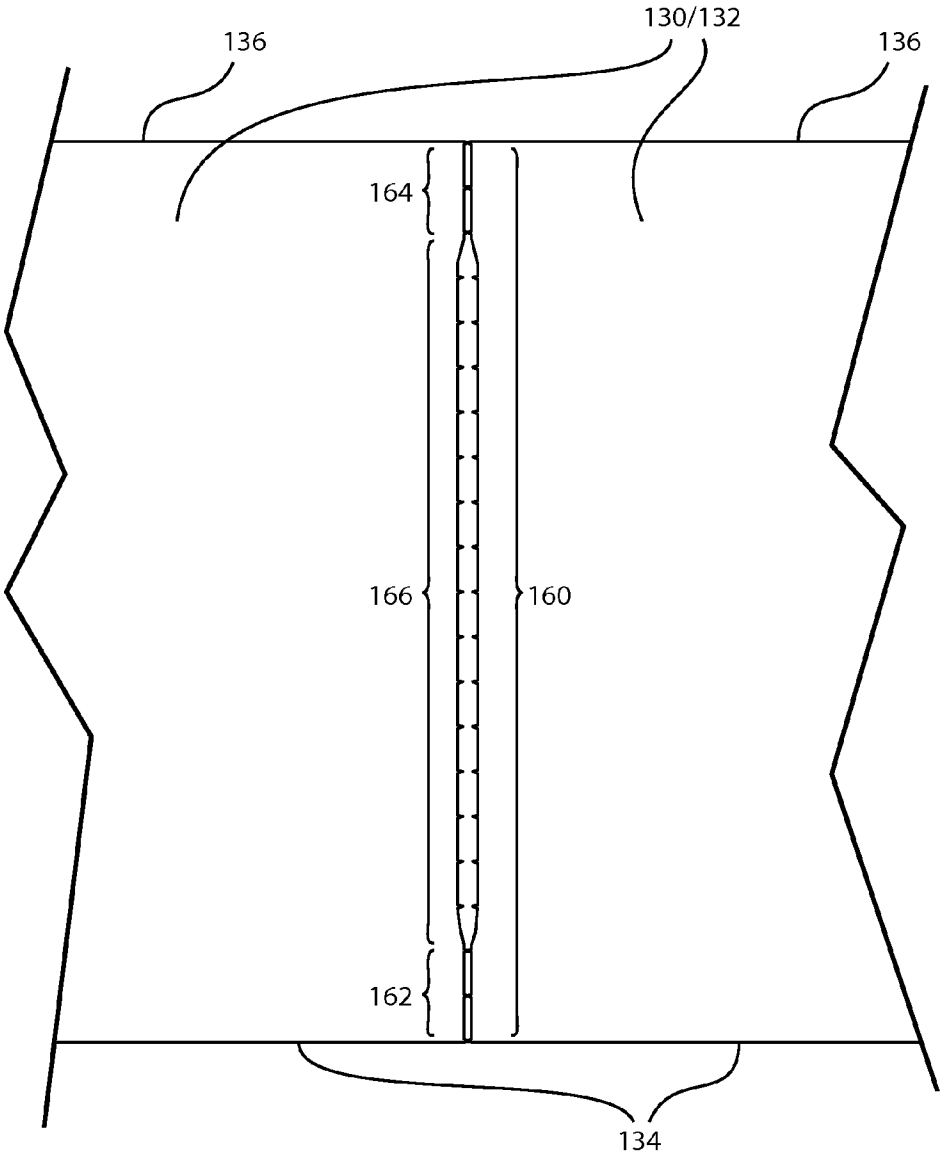


Fig. 6

PRODUCT CONTAINERS WITH ROLLED GOODS

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is a continuation-in-part of application Ser. No. 13/427,642, filed Mar. 22, 2012, and is hereby incorporated by reference into this disclosure.

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] The present invention relates to improvements in the construction and configuration of a product container for rolled goods, particularly product packaging for trash bags, which are provided in a rolled configuration.

[0004] 2. Description of the Related Art

[0005] Product containers serve several functions in the retail marketplace. One important function of a product container is to communicate information to a consumer about the product itself. Product containers can also provide a sealed, portable package for the product, ensuring that the product has not been tampered with or otherwise disturbed since packaging. In some cases, product containers also serve as a convenient, transportable package for the product, especially when handles are provided for carrying the product container.

[0006] Numerous other considerations are also taken into account when designing and selecting product containers for a particular product. Certain product containers may serve as a dispenser, enabling a consumer to store the product in the container and permitting dispensing of individual products or items when needed. Such dispensing containers are available in a variety of configurations depending on the specific product to be packaged. Additionally, retailer and logistical concerns may also necessitate that the product container be capable of being easily stacked, or palletized, in a finite amount of space without crushing under the weight of the stacked product.

[0007] Product packaging comes in a myriad of shapes and sizes. Product containers are often comprised of a combination of various cardboard material, rigid plastic material, and flexible plastic wrap. The materials selected for constructing the product container, including the rigidity, toughness, and other properties of a particular grade of material selected, address the various needs described above in addition to other considerations. Additionally, product container selection and design further requires that these needs be balanced against minimizing the cost and weight of the product container.

[0008] In view of the considerations discussed above, the invention disclosed herein is particularly advantageous when a product container is used for rolls of product, particularly coreless rolls of product. One example of a coreless roll of product that can be used as part of the present invention is a coreless roll of trash bags, or even multiple coreless rolls of trash bags. In general, most trash bags may be provided in a rolled configuration. In some cases, the individual trash bags are still partially joined when rolled, but, in other cases, the trash bags may be separated prior to or during the rolling process. In view of the foregoing, the present invention addresses some of the important considerations detailed above.

SUMMARY OF THE INVENTION

[0009] The present invention is a product container for a roll of product. Certain embodiments of the present invention comprise a top panel, a flexible outer wrap, and at least one roll of product. Each roll of product has a first end and a second end with a central axis extending between the first end and the second end. The top panel is placed adjacent to and at least partially covers the first end of the first roll of product. The flexible outer wrap is placed securely around the top panel and the at least one roll of product.

[0010] In some embodiments of the present invention, the product container may further comprise an access window located in the top panel, which is proximate to the central axis of at least one roll of product. The access window may be comprised of a portion of the top panel that is removable. In other embodiments, the access window may be comprised of a portion of the top panel that may be peeled away.

[0011] The top panel, in some embodiments, may be comprised of a cardboard material, a polymer material, or any other suitable material. The flexible outer wrap may be a shrink film, the shrink film being heat-activated to securely wrap around the top panel and the at least one roll of product.

[0012] In some embodiments, a leader may be placed on an innermost unit within the roll of product, the leader being easily accessible through the access window. The leader may also be attached to the flexible outer wrap or the top panel of the product container. The leader may be attached to the innermost unit by the use of adhesive or heat sealing. The leader may also be attached to the flexible outer wrap or the top panel of the product container by the use of adhesive or heat sealing.

[0013] For certain embodiments, the roll of product may comprise individual units. In between adjacent units may be a partial separation. The partial separation may be formed by a perforation extending from a top edge to a bottom edge of the individual units. Adjacent units may be detached from each other within a central section of the partial separation. The adjacent units may be partially separated from each other by severing the perforations between the two individual units.

[0014] While the present invention is applicable to a variety of products in a roll configuration, in certain embodiments of the present invention, the at least one roll of product is a roll of trash bags. Moreover, in some specific embodiments, the at least one roll of product may be a coreless roll of trash bags wherein the coreless roll of trash bags can be accessed from the interior of the roll, accessing the innermost bag within the roll of trash bags.

[0015] It is contemplated that the present invention may be utilized in ways that are not fully described or set forth herein. The present invention is intended to encompass these additional uses to the extent such uses are not contradicted by the appended claims. Therefore, the present invention should be given the broadest reasonable interpretation in view of the present disclosure, the accompanying figures, and the appended claims.

BRIEF DESCRIPTION OF THE RELATED DRAWINGS

[0016] A full and complete understanding of the present invention may be obtained by reference to the detailed description of the present invention and certain embodiments when viewed with reference to the accompanying drawings. The drawings can be briefly described as follows.

[0017] FIGS. **1**A and **1**B provide perspective views of an embodiment of the present invention.

[0018] FIG. **2** provides an exploded view of the embodiment of FIGS. **1**A and **1**B.

[0019] FIG. **3** provides a perspective view of another embodiment of the present invention.

[0020] FIG. **4** provides a front view of an innermost unit of the embodiment of FIG. **3**.

[0021] FIG. **5** provides a front view of a leader of the embodiment of FIG. **3**.

[0022] FIG. **6** provides a partial front view of two adjacent individual units of the embodiment of FIG. **3**.

DETAILED DESCRIPTION OF THE INVENTION

[0023] The present disclosure illustrates several embodiments of the present invention. It is not intended to provide an illustration or encompass all embodiments contemplated by the present invention. In view of the disclosure of the present invention contained herein, a person having ordinary skill in the art will recognize that innumerable modifications and insubstantial changes may be incorporated or otherwise included within the present invention without diverging from the spirit of the invention. Therefore, it is understood that the present invention is not limited to those embodiments disclosed herein. The appended claims are intended to more fully and accurately encompass the invention to the fullest extent possible, but it is fully appreciated that certain limitations on the use of particular terms are not intended to conclusively limit the scope of protection.

[0024] Referring initially to FIGS. **1**A and **1**B, perspective views of a first embodiment of the present invention are disclosed. FIG. **1**B illustrates, in broken lines, portions of the embodiment not visible in FIG. **1**A. In the depicted embodiment, the container **100** comprises a top panel **102** and a bottom panel **104** in a roughly parallel configuration. Two rolls of product **120**, **122** are placed between the top panel **102** and the bottom panel **104** which are placed proximate to and substantially perpendicular to the central axis of each of the rolls of product **120**, **122**. A flexible outer wrap **106** is provided to serve as the outer walls of the container and extends over at least a portion of the top panel **102** and the bottom panel **104**, thus keeping the top panel **102** and bottom panel **104** in contact with the rolls of product **120**, **122**. The flexible outer wrap **106** can be either a cylindrical sleeve with an opening at the top and bottom of the flexible outer wrap **106** or more like a bag with a sealed or partially enclosed bottom and an open top.

[0025] In a preferred embodiment, the top panel **102** and bottom panel **104** are made using the same material, typically a rigid cardboard material such as paperboard, chipboard, or corrugated fiberboard. However, in other embodiments, the top panel **102** and bottom panel **104** may be made with distinct materials, which may be selected from any suitable material including, but not limited to, thicker, more rigid polymers. For some rolls of product **120**, **122**, which provide more rigidity for the product container **100**, it is contemplated to use flexible materials for the top panel **102** and bottom panel **104** such as paper or polymer films. The specific material selection is driven by the need to provide sufficient rigidity for the product container **100** as a whole based upon the expected utilization and the various conditions the product container **100** may be subjected to before and after purchase by a consumer.

[0026] In a preferred embodiment, the flexible outer wrap **106** is a polymer film, particularly a shrink-wrap or shrink film. When the flexible outer wrap **106** is a heat-activated shrink-wrap material, the flexible outer wrap **106** can be shrunk to surround at least a portion of the top panel **102** and bottom panel **104**. The force of the shrunken flexible outer wrap keeps the top panel **102** and bottom panel **104** in close contact with the rolls of product **120**, **122**. As seen in the depicted embodiment, the top edge **108** of the flexible outer wrap **106** extends up over the top panel **102** and inward from the perimeter of the top panel **102**. Similarly, in some embodiments, the bottom edge **110** of the flexible outer wrap extends down below the bottom panel **104** and inward from the perimeter of the bottom panel **104**. Thus, in the depicted embodiment the shrink-wrap flexible outer wrap **106** securely sandwiches the rolls of product **120**, **122** between the top panel **102** and the bottom panel **104**.

[0027] The flexible outer wrap **106** can be transparent, translucent, opaque, or even a combination of a number of the foregoing. For example, if the flexible outer wrap **106** is mostly or entirely transparent, a consumer may visually inspect the rolls of product **120**, **122** prior to purchase. In other embodiments, the flexible outer wrap **106** may be entirely opaque using either a colored film or a transparent film with printing covering the entirety of the flexible outer wrap **106**. Furthermore, in yet another embodiment, the flexible outer wrap **106** may consist of transparent film with printed material covering only a portion of the flexible outer wrap **106** allowing information to be communicated about the product to the consumer on the printed area while also allowing visual inspection of a portion of the rolls of product **120**, **122** contained therein.

[0028] Rolls of product **120**, **122** are particularly advantageous with respect to the present invention for at least a couple of reasons. First, rolls of product are not square or rectangular, but rather are generally cylindrical in shape. Traditional cardboard packaging is generally rectangular, resulting in wasted space in the corners of the rectangular container when holding cylindrical rolls of product. In contrast, the flexible outer wrap **106** better accommodates the shape of the rolls of product **106** resulting in a more efficient, and cost-effective, product container.

[0029] In addition to minimizing the material required versus a rectangular container, the present invention is even more advantageous when used with certain rolls of product **120**, **122**, particularly when the rolls of product provide strength and rigidity in one or more directions. For example, one embodiment of the present invention contemplates that the rolls of product **120**, **122** are rolls of trash bags. In one preferred embodiment, the rolls of trash bags may be constructed primarily out of a linear low-density polyethylene (LLDPE) resin or a LLDPE resin blended with other polyethylene resins.

[0030] When tightly rolled, larger rolls of trash bags are generally rigid along the perimeter of the cylindrical roll, i.e. it is difficult to indent the roll of trash bags along the cylindrical wall when pushed toward the central axis of the roll. Additionally, a roll of trash bags when placed upright, i.e. the central axis running up and down, is capable of supporting a great deal of weight in the vertical direction. However, the ends of a roll of trash bags are not necessarily consistent, nor rigid, due to manufacturing realities, which cause the bags to vary slightly in location along the height of the roll of trash

bags. Thus, the rigid top panel **102** and bottom panel **104** provide for a flat, rigid surface at the top and bottom of the rolls of product **120**, **122**.

[0031] FIG. **2** provides an exploded view of the product container **100** to better illustrate the assembly and arrangement of one embodiment of the present invention. In the disclosed embodiment of FIG. **2**, the top panel **102** and the bottom panel **104** are shown surrounding one or more rolls of product **120**, **122** such as one or more rolls of trash bags. After the top panel **102**, bottom panel **104**, and rolls of product **120**, **122** are assembled as shown; the outer wrap **106** is placed around the panels **102**, **104** and rolls of product **120**, **122**. In the depicted embodiment, the flexible outer wrap **106** is a shrink-wrap and heat is applied by hand or with a heat tunnel to shrink the flexible outer wrap **106**, thus providing the product container illustrated in FIG. **1**A.

[0032] As noted previously, the present invention is particularly advantageous for rolls of product. Such rolls of product may be provided with a central cylinder, or core, located along the central axis of the roll of product. The core is typically manufactured from a paper or cardboard material with individual units of the product wrapped tightly around the core. A roll of products with a core is usually utilized by accessing the outermost unit on the roll, exposing the next outermost unit until all of the units on the roll are depleted and the core is exposed. While a roll of products with a core may be utilized with the present invention, certain embodiments of the present invention are even more advantageous when using coreless rolls of products.

[0033] The lack of a core uniquely enables some coreless rolls of product to be accessed from the innermost units at the center of the roll. In these cases, as each innermost unit is removed and utilized, the next innermost unit can be accessed until all of the units are utilized. As previously noted, this invention is particularly useful for rolls of trash bags, especially coreless rolls of trash bags where the trash bags can be pulled individually from the center of the roll. In such cases, certain embodiments of the present invention may provide additional unique advantages by utilizing an access window in the top panel, allowing access to the central axis of the coreless rolls and the innermost bags for coreless rolls of trash bags or other similar products.

[0034] As shown in FIGS. **2** and **3**, in certain embodiments of the present invention the top panel **102** may be provided with holes to access the rolls of product **120**, **122**. In the depicted embodiment, a first access hole **140** and a second access hole **142** are provided in the top panel **102**. In some embodiments the access holes **140**, **142** are created when the consumer removes separable portions of the top panel **102** from the container **100**, thereby exposing the rolls of product **120**, **122**. In other embodiments, the access holes **140**, **142** may be cut into the top panel **102** before packaging. In such cases, a removable adhesive cover may be utilized to cover the access holes **140**, **142** if desired.

[0035] In certain embodiments, it may be advantageous when a first access hole **140** and a second access hole **142** provide internal access near the central axis of each of the respective rolls of product **120**, **122**. Consequently, individual units **130**, **132** from the rolls of product **120**, **122** may be pulled through the corresponding access holes **140**, **142**. In certain embodiments, it may be advantageous to provide leaders **150**, **152** attached to the innermost units of the rolls **120**, **122** as shown in FIG. **3** and FIG. **4**, to facilitate in removal of the first innermost unit, such as the first trash bag from a roll of trash bags.

[0036] In certain embodiments, each leader **150**, **152** may have increased tensile strength in comparison to an individual unit **130**, **132**. Increased tensile strength may be desirable to prevent stretching or tearing of the leaders **150**, **152**, when the innermost unit is withdrawn from one of the rolls of product **120**, **122**. Due to the difference in the desired physical properties of the leaders **150**, **152** versus the physical properties of individual units, the leaders **150**, **152** may be constructed from material that is different to the material of the product. In certain embodiments, the leaders **150**, **152** may be constructed out of a high-density polyethylene (HDPE) film or a polypropylene film that has preferably been machine direction oriented to enhance the material's tensile properties. In an alternative embodiment, the leaders **150**, **152** may be constructed from a fiber reinforced polymeric film. In additional embodiments, the leaders **150**, **152** may be constructed of various other materials.

[0037] The leaders **150**, **152** may be attached to each innermost unit **130**, **132** of a roll of product **120**, **122** along the bottom of an innermost edge of each innermost unit **130**, **132**. However, as shown in FIG. **4**, in a preferred embodiment, the leaders **150**, **152** may be attached in a central location at the bottom of each innermost unit **130**, **132**. A leader **150**, **152** may be attached to each innermost unit **130**, **132** with adhesive or by heat sealing.

[0038] As shown in FIG. **5**, the leaders **150**, **152** may include an adhesive applied to a first end **154** and an adhesive applied to an opposite second end **156**. The area of the leader **150**, **152** between the first end **154** and second end **156** may be devoid of adhesive to prevent undesired adhesion of the leader **150**, **152** to itself or to the container **100**. The first end **154** of a leader **150**, **152** may be attached to each innermost unit **130**, **132** and the second end **156** of a leader **150**, **152** may be attached to the outer wrap **106** or top panel **102** of the container **100**. The second end **156** of each leader may be attached to the container **100** by adhesive or by heat sealing. The attachment of the second end **156** of each leader is desirable to control the location of the second end **156** of each leader during shipping and to prevent individual units **130**, **132** from being pulled from the rolls of product **120**, **122** unintentionally.

[0039] The leaders **150**, **152** may be dimensioned to allow a typical user to grasp and pull a leader and the following innermost unit **130**, **132** from a roll of product **120**, **122**. In a preferred embodiment, each leader may extend a minimum of one inch from a roll of product **120**, **122**. Each leader, in a preferred embodiment, may have a minimum width of at least ⅛ inch and have a generally rectangular shape, as shown in FIG. **5**.

[0040] The leaders **150**, **152** may be easily detachable from each individual unit **130**, **132**, once the innermost unit is withdrawn from one of the rolls of product **120**, **122**. The leaders **150**, **152** may be easily detached from one of the rolls of product **120**, **122** by the use of perforations defined in each leader **150**, **152**, in certain embodiments.

[0041] When the first access hole **140** and second access hole **142** are properly sized, subsequent items may follow the preceding item when removed from the container **100**. For example, when the rolls of product are rolls of trash bags, it has been discovered that smaller access holes **140**, **142** with limited area impede the ability to easily access a trash bag by

providing too much resistance when pulled through a small hole. On the other hand, if the access holes **140**, **142** are too large, subsequent trash bags have a tendency to fall back within the container **100**.

[0042] To enable pulling and separating adjacent individual units **130**, **132** from the container **100**, a partial separation **160** may be defined between adjacent individual units **130**, **132**. Shown in FIG. **6** is a partial view of two adjacent individual units **130**, **132** of a preferred embodiment with the partial separation **160**. The partial separation **160** may extend linearly from a bottom edge **134** to a top edge **136** of the individual units **130**, **132**. Defined within the partial separation **160** are a first outer section **162**, a second outer section **164**, and a central section **166**.

[0043] In a preferred embodiment, the partial separation **160** is formed by a plurality of perforations. The perforations of certain sections of the partial separation **160** may be severed prior to the product being rolled into a rolled product **120**, **122**, while the perforations may be left intact in other sections. As shown in FIG. **6**, the perforations of the central section **166** have been severed while in the two outer sections **162** and **164**, the perforations have been left intact.

[0044] In another alternative embodiment, the partial separation **160** may be formed by a plurality of perforations within the first and second outer sections **162** and **164**. Within the central section **166**, the partial separation **160** may be formed by a severing of the adjacent units **130**, **132**, such as by a cutting operation, without initially perforating the central section **166**.

[0045] In certain embodiments, the product may comprise a continuous linear web. Prior to forming the partial separation **160**, the continuous web may be folded one or more times along a lengthwise axis of the product to form a more compact roll of product **120**, **122**. In an alternative embodiment, the partial separation **160** may be formed prior to folding.

[0046] The partial separation **160** between items allows preceding items to be separated from subsequent items after being partially pulled out of a roll of product **120**, **122**. For example, if a leading individual unit **130**, **132** is pulled out of one of the access holes **140**, **142** by the top edge **136**, a subsequent individual unit **130**, **132** is also partially pulled through the access hole **140**, **142**, due to the perforations of the second outer section **164**. Once the subsequent unit **130**, **132** is pulled through to expose a partial length of the center section **166**, the perforations of second outer section **164** fail, due to the increased drag on the subsequent unit **130**, **132**. The failure of the second outer section **164** also causes the perforations of the first outer section **162** to fail, prior to the first outer section **162** exiting the container **100**. Thus, the leading individual unit **130**, **132** detaches from the subsequent individual unit **130**, **132**. Hence, the subsequent individual unit **130**, **132** is left partially removed from the container **100** so that it may be grasped and removed when another unit is needed.

[0047] As previously noted, the specific embodiments depicted herein are not intended to limit the scope of the present invention. Indeed, it is contemplated that any number of different embodiments may be utilized without diverging from the spirit of the invention. Therefore, the appended claims are intended to more fully encompass the full scope of the present invention.

I claim:

1. A product container comprising:
a first roll of product having a first end and a second end with a central axis extending between the first end and the second end,
a top panel perpendicular to the central axis of the first roll of product, the top panel at least partially covering a first end of the first roll of product,
a flexible outer wrap placed securely around the top panel and the first roll of product, and
a first leader attached to an innermost unit of the first roll of product and to the flexible outer wrap.

2. The product container of claim **1** further comprising:
the first leader comprising a polymeric film and attached to the innermost unit by an adhesive.

3. The product container of claim **1**, further comprising:
a first access hole located in the top panel proximate the central axis of the first roll of product, the first access hole providing exterior access to the first roll of product.

4. The product container of claim **2**, further comprising:
the first access hole being comprised of a portion of the top panel that is separable.

5. The product container of claim **2**, further comprising:
the first access hole being covered by a first removable cover.

6. The product container of claim **1**, further comprising:
a bottom panel,
wherein the bottom panel is perpendicular to the central axis of the first roll of product, and
wherein the bottom panel is at least partially covering a second end of the first roll of product.

7. The product container of claim **1**, further comprising:
a second roll of product, the second roll of product having a first end and a second end with a central axis extending between the first end and the second end, and
wherein the top panel is perpendicular to the central axis of the second roll of product, and
wherein the top panel is at least at least partially covering a first end of the second roll of product.

8. The product container of claim **7**, further comprising:
a first access hole located in the top panel proximate the central axis of the first roll of product, the first access hole providing exterior access to the first roll of product, and
a second access hole located in the top panel proximate the central axis of the second roll of product, the second access hole providing exterior access to the second roll of product.

9. A product container comprising:
a first roll of product having a first end and a second end with a central axis extending between the first end and the second end,
a top panel perpendicular to the central axis of the first roll of product, the top panel at least partially covering a first end of the first roll of product,
a flexible outer wrap placed securely around the top panel and the first roll of product, and
a first leader comprising of a polymeric film and attached to an innermost unit of the first roll of product by an adhesive.

10. The product container of claim **9**, further comprising:
the first leader attached to the top panel.

11. The product container of claim **9**, further comprising:
the first leader attached to the flexible outer wrap.

12. The product container of claim **9**, further comprising:
a bottom panel,
wherein the bottom panel is perpendicular to the central axis of the first roll of product, and
wherein the bottom panel is at least partially covering a second end of the first roll of product.

13. A product container comprising:
a first roll of product having a first end and a second end with a central axis extending between the first end and the second end,
a top panel perpendicular to the central axis of the first roll of product, the top panel at least partially covering a first end of the first roll of product,
a flexible outer wrap placed securely around the top panel and the first roll of product, and
the first roll of product comprising at least an innermost unit and an adjacent unit, a partial separation defined between the innermost unit and the adjacent unit,
the partial separation comprising at least a central section, a first outer section and a second outer section,
the innermost unit and the adjacent unit detached from each other within the central section,
the innermost unit and the adjacent unit attached to each other via perforations within the first outer section and the second outer section.

14. The product container of claim **13** wherein the first outer section is proximate to a bottom edge of the innermost unit and adjacent unit, and the second outer section is proximate to a top edge of the innermost and adjacent units.

15. The product container of claim **13**, further comprising:
the innermost unit and adjacent unit detached from each other within the central section by severed perforations.

16. The product container of claim **13**, further comprising:
the partial separation extending from a bottom edge to a top edge of the innermost unit and the adjacent unit.

17. The product container of claim **13**, further comprising:
a leader attached to the innermost unit.

18. The product container of claim **17**, further comprising:
the leader attached to the flexible outer wrap.

19. The product container of claim **17**, further comprising:
the leader attached to the innermost unit by adhesive.

20. The product container of claim **18**, further comprising:
the leader attached to the flexible outer wrap by adhesive.

* * * * *