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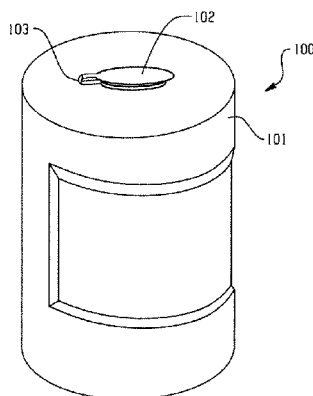


Fig. 1

(57) Abstract: A container includes an outer surface defining an inner cavity configured to store a sheet product, the outer surface having a retention indentation configured to engage an attachment apparatus. The retention comprises attachment rails for slidably engaging the attachment apparatus, a lid portion removably secured to the container includes a sheet product retainer to prevent a partially dispensed sheet product from falling back into the container, and the lid portion includes a retention tab configured to prevent a lid of the lid portion from complete separation from the container.



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WALL-MOUNTED CONTAINERS

BACKGROUND OF THE INVENTION

[0001] The present disclosure generally relates to product containers, and particularly to wall-mounted sheet product containers.

[0002] Sheet product such as, for example, absorbent towels are often stored in containers that allow a user to quickly and easily access sheet products. The containers may provide a plurality of portions of sheet product, and thus may include caps or other re-sealable portions to prevent contaminants from fouling or dirtying the sheet product.

[0003] The containers are often designed to be durable and useful so that the containers may be used in a variety of environments. Many sheet product containers are disposable and/or refillable. Additionally, many sheet products are designed for utility in multiple environments such as, for example, in workshops, in office or academic environments, or for use in other suitable areas. Therefore, it is desirable to have a sheet product container that is readily portable and useful across a plurality of environments that also offers ease of replacement and/or replenishment.

BRIEF DESCRIPTION OF THE INVENTION

[0004] The above described and other features are exemplified by the following Figures and Description in which portable sheet product containers are described in detail according to example embodiments.

[0005] According to at least one example embodiment, a container includes an outer surface defining an inner cavity configured to store a sheet product, the outer surface having a retention indentation configured to engage an attachment apparatus. The retention indentation is formed of a portion of material including attachment rails for engaging the attachment apparatus, a lid portion of the container includes a sheet product retainer to prevent a partially dispensed sheet product from falling back into

the container, and the lid portion includes a retention tab configured to prevent a lid of the lid portion from complete separation from the container.

[0006] According to an example embodiment, a container includes an outer surface defining an inner cavity configured to store a sheet product, the outer surface having a retention indentation configured to engage an attachment apparatus, the attachment apparatus, wherein the attachment apparatus is a solid piece of material, and a lid portion disposed on the outer surface. The retention indentation is formed of a portion of material including attachment rails for engaging the attachment apparatus, the inner cavity includes sheet product disposed therein, and the lid portion is configured to provide a re-sealable interface between the outer surface and the inner cavity.

[0007] These and other advantages and features will be more readily understood from the following detailed description of preferred embodiments of the invention that is provided in connection with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] Referring to the exemplary drawings wherein like elements are numbered alike in the accompanying Figures:

[0009] FIG. 1 illustrates a sheet product container, according to an example embodiment;

[0010] FIG. 2 illustrates a sheet product container according to an example embodiment;

[0011] FIG. 3 illustrates an attachment apparatus; and

[0012] FIG. 4 illustrates a sheet product container engaging an attachment apparatus, according to an example embodiment.

DETAILED DESCRIPTION OF THE INVENTION

[0013] Embodiments of sheet product containers are provided herein, which, as will become readily apparent, provide utility and advantages over conventional sheet product containers.

[0014] For example, sheet products are often stored in containers that allow a user to easily remove a sheet product from the container. Some sheet products may be impregnated with a liquid or other substance such as, for example, soaps, antibacterial substances, cleaning substances, and lotions that are useful for cleaning objects such as, for example, hands, equipment, and dry-erase marking boards. Sheet products that are impregnated with a liquid are often stored in a container that is re-sealable by a user. The sealed container keeps the sheet products free from contaminants and prevents the sheet products from drying due to exposure to air.

[0015] The term "sheet products" as used herein is inclusive of natural and/or synthetic cloth or paper sheets. Sheet products may include both woven and non-woven articles. There are a wide variety of nonwoven processes and they can be either wetlaid or drylaid. Some examples include hydroentagled (sometimes called spunlace), DRC (double re-creped), airlaid, spunbond, carded, paper towel, and meltblown sheet products. Further, sheet products may contain fibrous cellulosic materials that may be derived from natural sources, such as wood pulp fibers, as well as other fibrous material characterized by having hydroxyl groups attached to the polymer backbone. These include glass fibers and synthetic fibers modified with hydroxyl groups. Examples of sheet products include, but are not limited to, wipers, napkins, tissues, rolls, towels or other fibrous, film, polymer, or filamentary products.

[0016] In general sheet products are thin in comparison to their length and breadth and exhibit a relatively flat planar configuration and are flexible to permit folding, rolling, stacking, and the like. The sheet product may have perforations extending in lines across its width to separate individual sheets and facilitate

separation or tearing of individual sheets from the roll at discrete intervals. Individual sheets may be sized as desired to accommodate the many uses of the sheet products.

[0017] A number of sheet products are designed for use in a particular task. For example, some sheet products are designed for use in an industrial work environment such as a factory or workshop. The sheet products for an industrial work environment may, for example, include a heavy weight material, and may be impregnated with a substance such as a solvent or a soap used for cleaning tasks. Some sheet products may be used, for example, for cleaning greasy or oily surfaces such as engine surfaces or automobile surfaces. The sheet product may be impregnated with a solvent or other liquid that cleans grease or oil from such surfaces.

[0018] The sheet products are often stored in a container that prevents contaminants from fouling the sheet products and that prevents the sheet products from drying due to exposure to air. Using sheet products in different work environments has led to a desire for sheet product containers that offer ease of use or one-handed operation. Furthermore, due to sheet product containers being deployable in a plurality of environments, it is also desirable to have a sheet product container that is readily portable and/or easily replenished for multiple jobs.

[0019] For example, a sheet product user may work in an office with several sections available for the user to work in. As such, it may be beneficial for the office worker to transport sheet products efficiently, and attach them securely for free handed use during labor (for example, using one hand to dispense sheet product). Furthermore, it may be beneficial to deploy several sheet product containers across multiple portions of the office. It follows that it may also be desirable that the plurality of sheet product containers be easily replenished. For example, a wall-mounted sheet product container may offer portability and ease of replenishment. The sheet product container may be easily secured to a surface to allow for one-handed operation. Further, if an attachment apparatus separate from the container is employed, the sheet

product may be relatively easily replenished through replacement of the container or removing the container for refilling the sheet product contained therein.

[0020] FIG. 1 illustrates a perspective view of an exemplary embodiment of a sheet product container 100. The container 100 includes a body 101 having an inner cavity (e.g., hollow cavity) configured to retain sheet product, as described above. The dispensing of sheet products may be facilitated through opening/re-sealable opening 102.

[0021] The opening 102 seals the sheet product container 100. The opening 102 in the illustrated embodiment includes an opening to the inner cavity of the sheet product container, and as such, allows for dispensing of sheet product. The opening 102 may include a cap or other re-sealable portion to aid in reducing fouling of the sheet product. The cap may include a retaining portion 103 such as, for example, a tie, flexible brace, tab, or any suitable retaining portion. Furthermore, the re-sealable opening 102 may include a sheet-product retaining portion therein to prevent sheet product from falling away from the sheet product container 100. The sheet product retaining portion may be a portion of flexible plastic or other flexible material allowing for dispensing of sheet product through force, but retention of sheet product if no force is applied (e.g., pulling of sheet product).

[0022] The sheet product container 100 may be formed from a flexible material such as, for example, a plastic, preferably plastic capable of injection molding and/or blow molding such as a thermoplastic. The shape of the material may be deformed when a force is applied to the material. When the force is removed from the material, the plastic material has a tendency to return to a previous shape. Some examples of flexible plastic materials include polypropylene, polyethylene terephthalate, polyethylene, and/or other similar plastics. This list is not inclusive of all appropriate thermoplastics, and therefore, example embodiments should not be limited to only these examples.

[0023] The flexibility of the material allows the sheet product container 100 to deform from a force applied by the user, such as, if an attachment apparatus is engaging the sheet product container 100 for wall-mounting.

[0024] An exemplary method for fabricating the sheet product container 100 is by using blow molding. Blow molding is a manufacturing process by which hollow plastic parts may be formed. In an exemplary blow molding process, a mold of the sheet product container 100 is formed/provided. A hot plastic material is inserted into the mold and injected with a pressurized gas that expands the plastic material such that the plastic material contacts the mold and conforms to the shape of the mold. An interior portion of the plastic material is expanded to form a cavity inside the plastic material. Once the plastic material cools, it may be removed from the mold and processed further if necessary to complete the fabrication of the sheet product container.

[0025] There are many forms of blow molding, including injection blow molding and extrusion blow molding. Any form of the process may be altered to produce sheet product containers as described herein, and thus example embodiments should not be limited to any particular form of the basic process. Furthermore, the sheet product container may be formed by other processes as well. For example, an injection-molding process may be used.

[0026] In an injection molding process, melted plastic is injected into a portioned mold of a sheet product container. The melted plastic flows and fills the mold entirely. Once the plastic cools, the portions of the mold are removed in succession or at relatively the same time to produce the sheet product container. Further, different portions of the sheet product container 100 may be injection molded and released from the molds. These portions may be joined later using a plastic welding or mating methodology to attach said portions together thereby forming the sheet product container 100. Additional plastic molding/forming processes not described herein may be suitable for example embodiments. Thus, example embodiments should not be limited to only those examples set forth herein, but to any

applicable process as is known to one of ordinary skill in the art to which this invention pertains.

[0027] FIG. 2 illustrates an exemplary embodiment of a sheet product container 100. The sheet product container 100 is similar to the sheet product containers described above, and includes a retention indentation 201 configured to engage an attachment apparatus. The location of the retention indentation 201 is roughly at the center of the back outer surface (wall-facing outer surface) of the sheet product container 100. Furthermore, additional locations of retention indentations may be used for any particular implementation. For example, retention indentations may be located only on a bottom surface, side surface, upper surface of the sheet product container. Moreover, retention indentations may be located on any portion of said surfaces. Therefore, example embodiments should not be limited to any particular form depicted in the figures.

[0028] The retention indentation 201 may include retention rails 202 configured to engage with an attachment apparatus. For example, the sheet product container 100 may be slid onto an attachment apparatus such that sides of an attachment apparatus engage the rails 202. A stop surface on the sheet product container 100 prevents the sheet product container 100 from sliding off of the attachment apparatus when fully engaged therewith.

[0029] FIG. 3 illustrates an attachment apparatus 300. The attachment apparatus 300 is included for illustrative purposes only, and in no way is this example exhaustive of every type of attachment apparatus. Therefore, it should be understood that example embodiments are applicable to any suitable attachment apparatus. According to at least one example embodiment, the attachment apparatus is an apparatus including attachment rails 302 configured to engage attachment rails on a sheet product container, for example, the sheet product container 100. The attachment apparatus 300 may be formed of any suitable material including, but not limited to, plastic and metal. According to at least one example embodiment, the attachment

apparatus 300 is formed of a solid material. However, a hollow material or formation may also be used.

[0030] Attachment apparatus 300 may include a body 301. Alongside the body 301 the attachment rails 302 are situated. It is noted that as illustrated, the attachment rails 302 extend along the entire perimeter of the attachment apparatus 300. However, according to at least one example embodiment, the attachment apparatus 300 may include attachment rails extending only alongside one or more sides of the attachment apparatus 300. The attachment apparatus 300 may also include openings 303 to facilitate mounting of the attachment apparatus on a wall or other surface. For example, screws, nails, or other means may be inserted in the openings 303 to secure the attachment apparatus 300 to a surface. Turning to FIG. 4, a sheet product container engaging an attachment apparatus is illustrated.

[0031] As illustrated, the attachment apparatus 300 is secured onto the surface 400. The surface 400 may be a wall, flat surface, curved surface, pole, or any other suitable surface. For example, the surface 400 may be a wall in a bathroom stall, a wall near a dry-erase board, or any other surface. The sheet product container 100 engages the attachment apparatus 300 through the retention indentation described above with reference to FIG. 1. For example, the sheet product container 100 may be slid or fixed along the attachment rails of the attachment apparatus 300. Therefore, the attachment rails 202 of the container 100 may engage the attachment rails 302 of the attachment apparatus 300.

[0032] Thus, as described above, example embodiments provide containers with attachment apparatuses. The containers provide advantages including one-handed operation, portability, secure attachment, etc. With only some example embodiments of the present invention having thus been described, it is understood that the same may be varied in many ways. The description of the invention hereinbefore uses these examples, including the best mode, to enable any person skilled in the art to practice the invention, including making and using any devices or systems and performing any incorporated methods. The patentable scope of the invention is defined by the claims,

and may include other examples that occur to those skilled in the art. Such other examples are intended to be within the scope of the claims if they have structural elements that do not differ from the literal language of the claims, or if they include equivalent structural elements with insubstantial differences from the literal languages of the claims. Such variations are not to be regarded as a departure from the spirit and scope of the present invention, and all such modifications are intended to be included within the scope of the present invention as stated in the following claims.

CLAIMS

What is claimed is:

1. A container, comprising:

an outer surface defining an inner cavity configured to store a sheet product, the outer surface having a retention indentation configured to engage an attachment apparatus; wherein,

the retention indentation comprises attachment rails for slidably engaging the attachment apparatus,

a lid portion removably secured to the container includes a sheet product retainer to prevent a partially dispensed sheet product from falling back into the container, and

the lid portion includes a retention tab configured to prevent a lid of the lid portion from complete separation from the container.

2. The container of claim 1, wherein the attachment rails are configured to engage attachment rails of the attachment apparatus, and the attachment apparatus is comprised of metal.

3. The container of claim 1, wherein the attachment rails are configured to engage attachment rails of the attachment apparatus, and the attachment apparatus is comprised of plastic.

4. The container of claim 1, wherein the attachment apparatus is a solid piece of material.

5. The container of claim 1, further comprising an attachment apparatus engaging the retention indentation.

6. The container of claim 1, wherein the sheet product is impregnated with a solvent or soap.

7. The container of claim 1, wherein the sheet product disposed in the inner cavity is fibrous product, film product, polymer product, or filamentary product.

8. The container of claim 1, wherein the container is formed of polypropylene, polyethylene terephthalate, or polyethylene.

9. A container, comprising:

an outer surface defining an inner cavity configured to store a sheet product, the outer surface having a retention indentation configured to engage an attachment apparatus;

the attachment apparatus, wherein the attachment apparatus is a solid piece of material; and

a lid portion disposed on the outer surface; wherein,

the retention indentation is formed of a portion of material including attachment rails for engaging the attachment apparatus,

the inner cavity includes sheet product disposed therein, and

the lid portion is configured to provide a re-sealable interface between the outer surface and the inner cavity.

10. The container of claim 9, wherein the lid portion includes a sheet product retainer to prevent a partially dispensed sheet product from falling back into the container.

11. The container of claim 9, wherein the lid portion includes a retention tab configured to prevent a lid of the lid portion from complete separation from the container.

12. The container of claim 1, wherein the attachment rails are configured to engage attachment rails of the attachment apparatus, and the attachment apparatus is comprised of metal.

13. The container of claim 1, wherein the attachment rails are configured to engage attachment rails of the attachment apparatus, and the attachment apparatus is comprised of plastic.

14. The container of claim 9, further comprising an attachment apparatus engaging the retention indentation.

15. The container of claim 9, wherein the sheet product is impregnated with a solvent or soap.

16. The container of claim 9, wherein the sheet product disposed in the inner cavity is fibrous product, film product, polymer product, or filamentary product.

17. The container of claim 9, wherein the container is formed of polypropylene, polyethylene terephthalate, or polyethylene.

18. The container of claim 9, wherein the attachment apparatus is configured to be fixedly mounted on a vertical wall such that the attachment rails of the container slidably engage with the attachment rails of the attachment apparatus with a vertical sliding motion.

19. The container of claim 18, further comprising a stop surface configured to prevent the apparatus from sliding down the vertical wall.

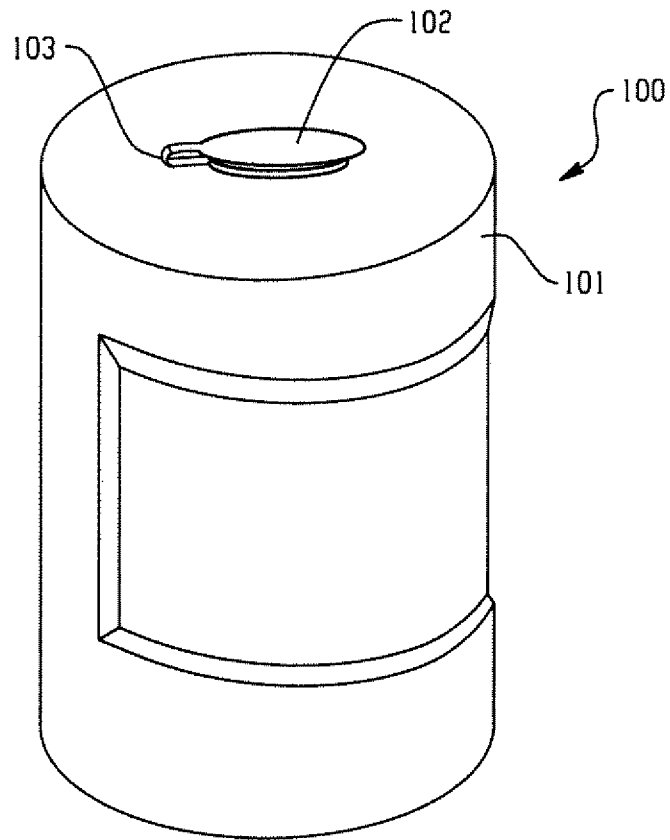


Fig. 1

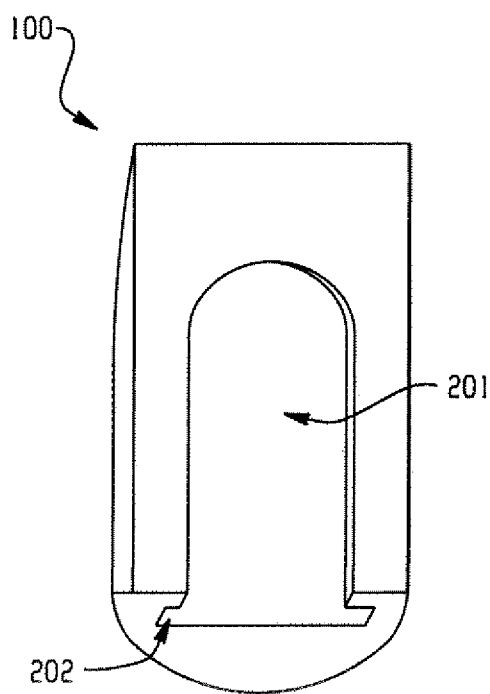


Fig. 2

