A towel roll product having an absorbent towel roll engaged on its outer surfaces by a flexible, protective wrapping. The upper portion of the wrapping at the towel roll top surface has a tear-away perforated portion that provides a tamperproof closure for the product presale, while allowing the product to be in a substantially ready-to-use state following its purchase. In addition, the perforated portion dictates the size of the opening to be created in the wrapping so as to limit potential of compromising the intended functioning of the towel roll product.
TOWEL ROLL PRODUCT WITH PERFORATED WRAP

FIELD OF THE INVENTION

[0001] The present invention relates to towel roll products, and more particularly, to towel roll products with wrapping provided thereabout in retaining the towel rolls during their use.

BACKGROUND

[0002] Disposable absorbent towels have many uses. Disposable towels are particularly popular with do-it-yourself homeowners and trades people who find towels valuable for cleaning tools, work areas and their hands. Disposable towels are also used frequently in factories, on farms and in the boating industry (both commercial and recreational). These are just a few of the wide variety of people and multitude of uses of disposable towels. Frequently, disposable towels are used by people who are on the go, whether it be trades people moving from job to job, maintenance people moving from machine to machine within a factory, or farmers dealing with issues wherever they come up. Thus, disposable towels are widely considered as valuable items of one’s normal equipment for performing jobs.

[0003] For convenience, absorbent towels commonly are provided as successive sheets on a continuous web wound in roll form with individual sheets separable from the roll by means of perforation lines established at predetermined distances. The towels are commonly drawn from the interior of the roll, and the perforations allow a user to tear off a portion of the absorbent towel roll. In some cases, the towel rolls are configured for being housed in dispensers, such as cardboard boxes, that allow the user to access the towels, usually through a small opening provided in the top of the box. In use, these dispensers enable individual towels to be pulled therefrom as needed, while providing a form of protective structure for the roll of towels. To that end, it is not uncommon for such dispensers to be hardily used, whether carried in the back of trucks to job sites along with other tools, or on maintenance carts in factories.

[0004] One problem in using separate dispensers for rolls of disposable towels is the cost they add to the end-result product. In particular, not only does the customer need to purchase the container, but these dispensers often are formed of a rigid material (such as plastic) in order to further protect the dispenser as well as the towel roll, thereby adding to their cost. Additionally, the towel roll manufacturer needs to appropriately package refills of the towel rolls so they can be sufficiently protected prior to their use within the dispensers, the cost of which is further filtered down to the customer.

[0005] In light of the above, efforts continue to be advanced to produce lower-cost alternatives to the above-described dispensers. One design in particular has involved using wrapping to support and protect outer surfaces of the towel roll, and further including a member wrapped adjacent to an end of the roll so as to enable individual towels to be centerpulled there through and to provide stability to the towel roll over its use. These designs have been well received commercially, yet have some drawbacks.

[0006] For instance, in certain variations of this design, an opening has been made in the wrapping of the towel roll product so as to permit individual towels to be pulled there through. This allows the product to be in a ready-to-use state following purchase. Such design has generally dictated using a cover to overlay the opening in the wrapping to environmentally protect the towel roll product prior to its sale. Unfortunately, such cover is generally removable and replaceable as needed, which allows such cover to be tampered with presale. To that end, if the cover is tampered with, the towel roll product can in turn be damaged from entry of dust and/or bugs therein while kept on retail shelving. Alternatively, the product can be manufactured so that the wrapping is continuously applied around the towel roll. As such, following purchase of the product, the consumer is called upon to create the opening in the wrapping to enable individual towels to be pulled there through. However, in dictating that the customers carry out this process, the opening created can be unintentionally oversized. As a result, there is the potential to compromise not only the intended support and/or protective functions of the wrapping, but also the intended support and/or disbursement functions of the member.

SUMMARY OF THE INVENTION

[0007] As described herein, the terms “upper”, “lower”, “top”, “bottom”, “upright” and other descriptors of direction and position have been used for convenience in describing a towel roll product in which the axis of the roll is upright or vertical and individual towel sheets are drawn upwardly from the center of the roll, with such action being referenced as a “centerpull”.

[0008] Embodiments of the invention involve a generally cylindrical towel roll product. The product comprises an absorbent towel roll having an upright axis, a circumferential outer surface and top and bottom surfaces. The product also comprises a flexible, water resistant, protective wrapper engaging each of the surfaces of the towel roll and having sufficient strength to restrain significant diametric expansion of the towel roll and to increase axial stiffness of the product, top and bottom portions of the wrapper encasing the top and bottom surfaces of the roll, respectively. The wrapper top portion has a tear-away perforated portion comprising a first layer of a double layer of initial protection for the towel roll at the top surface prior to access to the towel roll being enabled.

[0009] Additionally, embodiments of the invention involve a generally cylindrical towel roll product. The product comprises an absorbent towel roll having an upright axis, a circumferential outer surface and top and bottom surfaces. The product also comprises a flexible, water resistant, protective wrapper engaging each of the surfaces of the towel roll and having sufficient strength to restrain significant diametric expansion of the towel roll and to increase axial stiffness of the product, top and bottom portions of the wrapper encasing the top and bottom surfaces of the roll, respectively. The wrapper top portion has a perforated portion configured to be torn away from the wrapper without having adverse effect to the sufficient strength of the wrapper.

[0010] Further, embodiments of the invention involve a generally cylindrical towel roll product. The product comprises an absorbent towel roll having an upright axis, a circumferential outer surface and top and bottom surfaces. The product also comprises a flexible, water resistant, protective wrapper engaging each of the surfaces of the towel roll and having sufficient strength to restrain significant diametric expansion of the towel roll and to increase axial stiffness of the product, top and bottom portions of the wrapper encasing the top and bottom surfaces of the roll, respectively. The
wrapper top portion has a tear-away perforated portion that when torn away provides an opening sized to permit toweling to pass there through.

DESCRIPTION OF THE DRAWINGS

[0011] Fig. 1 is a front perspective view, partially broken away, of a towel roll product in accordance with certain embodiments of the invention;

[0012] Fig. 2 is a partially exploded side view of a portion of the towel roll product of Fig. 1, with a larger portion broken away;

[0013] Fig. 3 is a top view of the towel roll product of Fig. 1, showing opening created through which individual towels of a towel roll of the product may be drawn; and

[0014] Fig. 4 is a bottom view of the towel roll product of Fig. 1.

DETAILED DESCRIPTION

[0015] The following detailed description should be read with reference to the drawings, in which like elements in different drawings are numbered identically. The drawings depict selected embodiments and are not intended to limit the scope of the invention. It will be understood that embodiments shown in the drawings and described below are merely illustrative purposes, and are not intended to limit the scope of the invention as defined in the claims.

[0016] As summarized above, the towel roll product as embodied herein is formed of an absorbent towel roll having flexible, protective wrapping engaging each of the towel roll's outer surfaces, including a top surface of the towel roll that is engaged by an upper portion of the wrapping. The upper portion of the wrapping at the towel roll top surface, as detailed below, has a tear-away perforated portion that not only provides a tamperproof closure for the product preserve, but also allows the towel roll product to be in a substantially ready-to-use state following its purchase. In addition, the perforated portion dictates the size of the opening to be created in the wrapping so as to avoid compromising the intended functioning of the wrapping with respect to the towel roll product. In some cases, as further described herein, prior to access to the towel roll being enabled, the towel roll product provides a double layer of protection. Providing such double layer of protection allows the towel roll product to remain shielded so long as one of the layers remains intact.

[0017] Fig. 1 illustrates a front perspective view of a towel roll product in accordance with certain embodiments of the invention, while Figs. 2, 3, and 4 show partial exploded, top, and bottom views, respectively, of the product. Referring first to Fig. 1, a generally cylindrical towel roll product 10 is shown. A roll of absorbent toweling 12 is formed about an axis A, and is encased in an outer wrapper 14. With reference to Fig. 2, a disk 16 of rigid material is shown above the upper surface 12.1 of the towel roll 12. The disk 16 is brought in tight contact against such upper surface 12.1 of the towel roll 12 when the wrapper 14 is applied to the roll 12 and disk 16 during manufacture of the product 10, as shown in Figs. 1 and 3 and further described below.

[0018] Attention is made to U.S. Pat. No. 7,533,846, the teachings of which are incorporated herein by reference. In the '846 patent, certain embodiments are provided with respect to a towel roll product, wherein that product has certain similarities with the product 10 embodied herein. To that end, the embodiments of the toweling of the towel roll 12 and the processes of their construction as described in the '846 patent are likewise applicable to the toweling and towel roll 12 referenced herein. Additionally, the wrapping or wrapper 14 and the disk 16 referenced herein can be formed, and configured together with the towel roll 12 (in constructing the towel roll product 10), in similar fashion as embodied in the '846 patent. However, as will be appreciated from the description that follows, the designs of these wrapper 14 and disk 16 elements are advanced so as to enhance conventional wrapped towel roll products commercialized to date.

[0019] As shown, the wrapper 14 has portions 14.1, 14.2, and 14.3, respectively, for engaging corresponding surfaces 12.1, 12.2, and 12.3 of the towel roll 12, so as to tightly encase the roll 12. To that end, the portions 14.1, 14.2 of the wrapper 14 are illustrated to overlay the towel roll top and bottom surfaces 12.1, 12.2, respectively, while wrapper side portion 14.3 overlays the towel roll side surface 12.3 about its entire circumference. As alluded to above, the disk 16 is positioned on the top surface 12.1 of the towel roll 12 before being encased by the wrapper 14. In certain embodiments, the wrapper portions 14.1, 14.2 involve end portions of the wrapper 14; however, it should be appreciated that one or more of these portions 14.1 and 14.2 could just as well involve mid-portions of the wrapper 14 with corresponding ends thereof overlapping the towel roll side surface 12.3. In certain embodiments, the wrapper 14 is formed of a material that can be heat shrunk or stretched, which can also be desirably heat-sealed. To that end, heat-sealed seams 14.4 are exemplarily shown as extending substantially about the body of the illustrated towel roll 12.

[0020] As described in the '846 patent, the wrapper 14 can engage the circumferential surface 12.3 of the towel roll 12 snugly enough to restrain the roll 12 from significantly expanding in diameter when subjected to an axial load. However, it is preferred that the wrapper 14 tightly engage the circumferential surface 12.3 of the towel roll 12, that is, that it actually squeeze the circumferential surface of the roll 12. As such, the wrapper 14 about the circumference of the roll 12 strongly restrains the roll 12 from significantly expanding in diameter when it is subjected to axial compressive loading, e.g., of twice the weight of the towel roll product 10, such as is often the case when a vertical stack is made of the towel roll products. In this manner, the wrapper 14, e.g., via its circumferential portion 14.3, tends to support and stabilize the roll 12.

[0021] Conversely, the disk 16 is meant to have sufficient rigidity so as to spread downwardly against the upper surface 12.1 of the towel roll 12, and withstand bending or tearing during use or storage of the product 10. In particular, the disk 16 is configured so as to maintain its shape under radial, inwardly-directed forces tending to collapse the cylindrical shape of the product 10 when much of its toweling has been removed. As shown in Figs. 1-3, the disk 16 substantially covers the top surface 12.1 of the towel roll 12 before its use. While the disk 16 is shown as notably smaller in diameter DD than the corresponding diameter RD of the top surface 12.1 of the towel roll 12, this is done for clear view of the reader as to the differing elements. However, in application, the disk diameter DD is sized so as to be substantially similar to the roll diameter RD. To that end, in certain embodiments, the disk 16 is substantially coextensive with the top surface 12.1 of the roll 12. Consequently, the wrapper 14 provides a pressure on the edge of the disk 16 that is similar to the pressure felt by the side surface 12.3 of the towel roll 12. As a result,
while less axial stiffness is provided as toweling is removed from the roll 12, the disk 16 is held in place by the axial pressure of the wrapping 14 such that the axial strength and cylindrical shape of the towel roll product 12 is sufficiently preserved, and continue to have this effect even when the roll 12 is left with but a few coils of toweling.

[0022] Referring to FIGS. 1 and 3, once the towel roll product 10 is constructed, its top surface 10.1, sequentially moving from outer surface to inner surface, includes the wrapper portion (e.g., top) 14.1, the disk 16, and the top surface 12.1 of the towel roll 12. As shown, the wrapper portion 14.1 has a perforated portion 14.5 centrally defined therein. The wrapper perforated portion 14.5, as illustrated, is positioned so as to provide axial access to the towel roll product 10. The perforations 14.6 of the portion 14.5, while providing gaseous communication between the roll 12 and the outside environment, sufficiently limit exposure of the towel roll 12 to environmental contaminants. At the same time, in certain embodiments, the perforations 14.6 allow the portion 14.5 to be freely torn away from the wrapper 14 when necessary. Further, the wrapper portion 14.1 is sized such that it can be removed from the wrapper 14 without having adverse effect to the sufficient strength of the wrapper 14 in its intended use in the towel roll product 10.

[0023] Looking to the disk 16, as shown, a central portion 16.1 can also be defined therein and positioned so as to align with the perforated portion 14.5 of the wrapper 14. In certain embodiments, the portion 16.1 is defined to be removable from the disk 16. The removable portion 16.1, in certain embodiments as shown, is attached to the disk 16 via perforations 16.2. Similar to the perforations 14.6 of the wrapper portion 14.1, the perforations 16.2 of the disk portion 16.1 sufficiently limit exposure of the towel roll 12 to environmental contaminants, while allowing the portion 16.1 to be freely torn away from the disc 16 when necessary.

[0024] As described above, both portions 14.5 and 16.1 (of the wrapper 14 and the disk 16, respectively) are centrally positioned in their respective surfaces on the top surface 12.1 of the towel roll 12. Consequently, the portions 14.5, 16.1 are positioned so as to be axially aligned with the product axis A, along which individual towels are centerpulled from the towel roll 12. Accordingly, following purchase of the towel roll product 10, the customer can store the product until needed, at which time the portions 14.5 and 16.1 can be sequentially removed to permit access to, and withdrawal, of the towel roll 12. With further reference to FIGS. 1 and 3, in certain embodiments, the die portion 16.1 defines one or more confronting lobes 16.3, which (when the portion 16.1 is removed from the disk 16) provides corresponding channels for the individual towels to catch and break apart from each other during a centerpull. In certain embodiments, the size of the overall opening defined by the wrapper portion 14.5 is larger in size than the overall aperture defined by the disk portion 16.1. As such, the toweling is free to contact with one of the lobes 16.3 of the disk aperture without any imposing contact with the wrapper opening. In certain embodiments, the disk 16 can also be configured with openings 16.4 extending along a portion of the disk’s radial extent to enable a user to see how much toweling remains on the towel roll 12.

[0025] Given the above, the design of the towel roll product 10 is enhanced over other conventional designs. By providing the perforated portion 14.5 on its wrapping 14 so as to align with the centerpull axis A of the towel roll 12, the product 10 is provided with a tamperproof closure. Consequently, assurance can be made that the product 10 has not been environmentally contaminated prior to its sale, while at the same time, being in a substantially ready-to-use state following its purchase (via removal of both the wrapper portion 14.5). Further, the perforated portion 14.5 dictates the size of the opening to be created in the wrapping 14 so as avoid compromising the intended function of the wrapping with respect to the towel roll product 10.

[0026] When the above design (with wrapper perforated portion 14.5) is combined with a similar removable portion with the disk 16 there under, a double layer of presale protection can be provided for the towel roll product 10. Consequently, so long as one or these portions (or protective layers) 14.5 or 16.1 remains intact, the consumer can be rest assured that the product 10 has not been environmentally contaminated (via exposure starting at its top surface 10.1) prior to its sale.

[0027] It will be appreciated the embodiments of the present invention can take many forms. The true essence and spirit of these embodiments of the invention are defined in the appended claims, and it is not intended the embodiment of the invention presented herein should limit the scope thereof.

What is claimed is:

1. A generally cylindrical towel roll product comprising an absorbent towel roll having an upright axis, a circumferential outer surface and top and bottom surfaces, and a flexible, water resistant, protective wrapper engaging each of the surfaces of the towel roll and having sufficient strength to restrain significant diametric expansion of the towel roll and to increase axial stiffness of the product, top and bottom portions of the wrapper encasing the top and bottom surfaces of the roll, respectively, the wrapper top portion having a tear-away perforated portion, the perforated portion comprising a first layer of a double layer of initial protection for the towel roll at the top surface prior to access to the towel roll being enabled.

2. The towel roll product of claim 1 wherein the perforated portion when torn away provides an opening sized to permit single toweling sheets of the towel roll to be centerpulled there through.

3. The towel roll product of claim 2 wherein the perforated portion when torn away provides axial access to the product.

4. The towel roll product of claim 2 further comprising a rigid disk positioned between the upper surface of the towel roll and the wrapper top portion, the disk having a portion aligned with the perforated portion in the wrapper top portion, the disk portion comprising a second layer of the double layer.

5. The towel roll product of claim 4 wherein the disk is substantially coextensive with the top surface of the towel roll.

6. The towel roll product of claim 5 wherein the disk has a diameter that is substantially similar to a diameter of outer periphery of the towel roll, wherein shape of the towel roll product is preserved over a use life of the towel roll.

7. The towel roll product of claim 5 wherein the disk portion is removable, and when removed following removal of the perforated portion, forms an aperture enabling axial access to the towel roll.

8. The towel roll product of claim 7 wherein the disk portion comprises a tear-away perforated portion.

9. The towel roll product of claim 7 wherein the disk includes confronting lobes positioned to encounter toweling of the towel roll as the toweling is withdrawn axially from the towel roll.
10. The towel roll product of claim 7 wherein the size of the opening is larger than the aperture.

11. The towel roll product of claim 1 wherein the perforated portion is configured to be torn away from the wrapper without having adverse effect to the sufficient strength of the wrapper.

12. A generally cylindrical towel roll product comprising an absorbent towel roll having an upright axis, a circumferential outer surface and top and bottom surfaces, and a flexible, water resistant, protective wrapper engaging each of the surfaces of the towel roll and having sufficient strength to restrain significant diametric expansion of the towel roll and to increase axial stiffness of the product, top and bottom portions of the wrapper encasing the top and bottom surfaces of the roll, respectively, the wrapper top portion having a perforated portion, the perforated portion configured to be torn away from the wrapper without having adverse effect to the sufficient strength of the wrapper.

13. The towel roll product of claim 12 wherein the perforated portion when torn away provides an opening sized to permit single toweling sheets of the towel roll to be centerpulled there through.

14. The towel roll product of claim 13 wherein the perforated portion when torn away provides axial access to the product.

15. The towel roll product of claim 13 further comprising a rigid disk positioned between the upper surface of the towel roll and the wrapper top portion, the disk having a portion aligned with the perforated portion in the wrapper top portion.

16. The towel roll product of claim 15 wherein the perforated portion and the disk portion comprise a first layer and a second layer of a double layer of initial protection for the towel roll at the top surface prior to access to the towel roll being enabled.

17. The towel roll product of claim 15 wherein the disk is substantially coextensive with the top surface of the towel roll.

18. The towel roll product of claim 15 wherein the disk portion is removable, and when removed following removal of the perforated portion, forms an aperture enabling axial access to the towel roll.

19. The towel roll product of claim 18 wherein the disk portion comprises a tear-away perforated portion.

20. A generally cylindrical towel roll product comprising an absorbent towel roll having an upright axis, a circumferential outer surface and top and bottom surfaces, and a flexible, water resistant, protective wrapper engaging each of the surfaces of the towel roll and having sufficient strength to restrain significant diametric expansion of the towel roll and to increase axial stiffness of the product, top and bottom portions of the wrapper encasing the top and bottom surfaces of the roll, respectively, the wrapper top portion having a tear-away perforated portion that when torn away provides an opening sized to permit toweling to be centerpulled there through.

21. The towel roll product of claim 20 wherein the perforated portion when torn away provides axial access to the product.

22. The towel roll product of claim 21 further comprising a rigid disk positioned between the upper surface of the towel roll and the wrapper top portion, the disk having a portion aligned with the perforated portion in the wrapper top portion.

23. The towel roll product of claim 22 wherein the perforated portion and the disk portion comprise a first layer and a second layer of a double layer of initial protection for the towel roll at the top surface prior to access to the towel roll being enabled.

24. The towel roll product of claim 22 wherein the disk is substantially coextensive with the top surface of the towel roll.

25. The towel roll product of claim 22 wherein the disk portion is removable, and when removed following removal of the perforated portion, forms an aperture enabling axial access to the towel roll.

26. The towel roll product of claim 25 wherein the disk portion comprises a tear-away perforated portion.