An inner container of sheets to be dispensed, which is adapted to be mounted inside a sheets dispenser used for dispensing the sheets, is disclosed. The inner container includes an aperture maintained by a substantially cylindrical collar. The collar is adapted to mount to a mounting means of the sheets dispenser. The collar is provided with a shaped profile adapted to cooperate with a corresponding shaped profile provided on the mounting means.
INNER CONTAINER OF SHEETS TO BE DISPENSED

[0001] This invention relates to an inner container of sheets to be dispensed, for use particularly, but not exclusively, to contain wet wipes to be dispensed.

[0002] Wet wipes are sheets of a fabric material infused with a cleansing fluid, and they have multiple uses. One of the most common applications are wet wipes for cleaning parts of the human body, for example the hands or face, or for use as toilet paper or baby wipes. In such cases the cleansing fluid can be a soap or other chemical detergent suitable for the purpose. Wet wipes are also used to clean domestic surfaces, and other installations, and in such cases the fabric is often heavier and the cleansing fluid formulated accordingly.

[0003] Wet wipes can dry out if left exposed to air for too long. Therefore, they are often packaged in a container with an opening provided with a sealable lid, which can be shut when the wipes are not required. These containers can be something as simple as an outer wrapper made from a flexible plastics material, which has an access opening formed on one side with a peelable and re-usable sticky-backed lid. Such containers are single use and are disposed of when the wipes run out. Alternatively, it is known to provide a re-usable box formed from a rigid plastics material, which has an opening with a rigid hinged lid. Such boxes have a top which can be removed, or which is hinged to the body of the box, so they can be opened and refilled with wipes. The wipes can be loose, or they can be inside an outer wrapper as described above. The opening with the lid is provided in the top.

[0004] However, these known examples of containers are very simple in construction and the lids often fail to provide an adequate air seal, and as a result the wipes closest to the opening can dry out. In addition, the user must close the lid manually, and if they forget to do so the wipes will also dry out.

[0005] It can be awkward to thread the first wipe through the opening with these re-usable boxes. When a packet of wipes is placed in the box, the first one must be partially withdrawn from it, then threaded through the box’s opening from underneath. This is awkward because the packet and the box are not physically connected to one another, and the box’s opening is in the top, which is rotated away from the inside of the box when it is open.

[0006] In order to overcome the above problems U.S. Ser. No. 12/308,368 in the name of the applicant discloses a sheets dispenser comprising a container with an opening, and a spring loaded lid adapted to close said opening, in which the opening is provided with extrusion means, and in which the lid is biased into a closed position. U.S. Ser. No. 12/308,368 describes an inner container for use with the dispenser, which comprises an aperture maintained by a substantially cylindrical collar, in which said collar is adapted to mount to a mounting means of said sheets dispenser, and in which the inner container comprises an aperture maintained by a substantially cylindrical collar, in which said collar is adapted to mount to a mounting means of said sheets dispenser, and in which said collar is provided with a shaped profile adapted to co-operate with a corresponding shaped profile provided on said mounting means.

[0009] (The term “sheets” used herein refers to any sheets of material which can be dispensed from a dispenser, and not only wet wipes, although preferably the inner container can contain wet wipes.)

[0010] The shaped profile of the invention has a number of functions. Wet wipes come in a number of varieties for a number of different purposes. Where it is important to ensure that only the correct types of wet wipes are loaded into particular dispensers, different shaped profiles can be used on the inner containers which will only mate with the mounting means of the appropriate dispenser type.

[0011] In addition, the shaped profile can be used to ensure that only inner containers of wet wipes from an approved manufacturer can be used with the dispensers, as other designs will not fit onto the mounting means.

[0012] Further, the shaped profiles can be adapted to only allow the collar to be fitted to the mounting means at one rotational position, which ensures the inner container is loaded correctly in the dispenser.

[0013] The inner container can comprise a bag, and said aperture can be located at a top of the bag. As such, the collar can be adapted to fit onto mounting means comprising a downwardly depending boss provided inside the dispenser with which the inner container is used. The cylinder can be rigid, and can slide over the boss and locate in position. Preferably the collar can be a snap-fit with the boss.

[0014] The cylindrical collar can comprise an upper rim and a lower rim, and the shaped profile can comprise a number of abutments arranged on an inner surface of the cylindrical collar, adjacent said lower rim. In use these abutments can co-operate with corresponding slots provided in a lower rim of said boss.

[0015] As an alternative to this construction the shaped profile can comprise one or more indentations formed in the inner surface of the collar.

[0016] In one construction the cylindrical collar can comprise an axial indent delimited by said upper rim and lower rim, and the inner surface of the cylindrical collar can comprise a curve-linear recessed portion extending through part of the annular extent of the collar, and axially from said lower rim to a lip below said upper rim. The shaped profile can be formed in the inner surface between said lip and said upper rim. This construction provides a thin panel at the top of the collar which can have the particular shaped profile readily carved into it. The one or more indentations can be curve-linear.

[0017] Preferably the two above described shaped profiles can be used in conjunction with one another so the collar comprises two shaped profiles, which can have slightly different purposes. In particular the abutments can perform the task of only allowing the collar to fit onto the mounting means at the correct rotational position, while the indentations can be employed as keys which ensure only the correct type of inner containers from the desired manufacturer are fittable to the mounting means in question.

[0018] The cylindrical collar can be provided with an indicator on an outer surface thereof, which indicator can be
adapted to align with an indicator provided on said mounting means when said shaped profiles are aligned for co-operation.  

These sheets to be dispensed can be connected to one another in a sequence by connection means. In one version of the invention the sheets can be arranged in an overlapping sequence and the connection means can comprise portions of the sheets folded together, or it can comprise an adhesive. With such an arrangement a force required to sever the connection means can be less than a force required to pull a sheet through an extrusion means provided on the dispenser. Thus, when one wet wipe is removed from the dispenser in use, a portion of the next will be pulled through the extrusion means before the connection means is severed, which leaves a convenient portion of the next wet wipe extending from the extrusion means ready to be gripped for removal.

However, in an alternative and preferred construction the sheets can be formed from a length of material with perforated lines formed therein, such that a sequence of sheets are provided which are connected to one another end to end. In order to leave a convenient portion of the next wet wipe protruding from the opening on the dispenser with this arrangement, the extrusion means can be adapted such that in a first instance a first level of resistance is provided which is less than the force required to separate the sheets, such that a first sheet and a portion of a second sheet can be pulled therethrough, and in a second instance the level of resistance can be greater than the force required to separate the sheets, so they can then be separated.

The length of material can be formed into a roll inside the inner container, which roll can be axially aligned with the aperture. As such, the sheets can be removed from the inner container by pulling them from the inside of the roll. As referred to above, preferably the sheets can be wet wipes.

The outer surface of the cylindrical collar can have an upper circumferential flange and a lower circumferential flange, which together define a circumferential trough. A rim of the aperture can be bonded to the trough, thereby to secure the collar in the aperture. The lower circumferential flange can have an annular extension section which extends laterally into the bag, which prevents the sides of the bag from encroaching on the aperture.

As an alternative to this construction the outer surface of the cylindrical collar can have just a single circumferential flange, and an annular portion of the bag surrounding the aperture can be bonded to an upper surface of said circumferential flange, thereby to secure the collar in the aperture.

An inner surface of the cylindrical collar can be tapered, to assist its fitment to the boss on the dispenser.

The invention can be performed in various ways, but two embodiments will now be described by way of example and with reference to the accompanying drawings, in which:

FIG. 1 is a perspective view of a lid component of a main frame component of the sheets dispenser as shown in FIG. 1;  
FIG. 2 is a perspective view of the dispenser as shown in FIG. 1;  
FIG. 3 is a part cross-sectional side view of the dispenser as shown in FIG. 1;  
FIG. 4 is a part cross-sectional side view of the dispenser as shown in FIG. 1;  
FIG. 5 is a perspective view of a main frame component of the sheets dispenser as shown in FIG. 1;  
FIG. 6 is a perspective view of a panel component of the sheets dispenser as shown in FIG. 1;  
FIG. 7 is a perspective view of a lid component of the sheets dispenser as shown in FIG. 1;  
FIG. 8 is a perspective view of a main frame component of the sheets dispenser as shown in FIG. 1;  
FIG. 9 is a part cross-sectional perspective view of a first inner container according to the present invention;  
FIG. 10 is a perspective front view of a frame component of a dispenser with which a second inner container according to the invention is used;  
FIG. 11 is a top view of a collar component of a second inner container according to the invention;  
FIG. 12 is a perspective rear view of the collar component shown in FIG. 11;  
FIG. 13 is a perspective front view of the collar component shown in FIG. 11;  
FIG. 14 is a perspective view of the collar component shown in FIG. 11 aligned for fitment to the frame component shown in FIG. 10; and,  
FIG. 15 is a perspective view of the collar component shown in FIG. 11 fitted to the frame component shown in FIG. 10.

FIG. 9 shows an inner container 50 of sheets 63 to be dispensed, which is adapted to be mounted inside a sheets dispenser with which it is used for dispensing of said sheets, like dispenser 1 shown in FIGS. 1 and 2. The inner container 50 comprises an aperture 52 maintained by a substantially cylindrical collar 54, which is adapted to mount to a mounting means of a sheets dispenser, like boss 16 as shown in FIGS. 3 and 4. The collar 54 is provided with a shaped profile 59 adapted to co-operate with a corresponding shaped profile provided on said mounting means, like shaped profile 19 as shown in FIG. 5.

FIGS. 1 to 8 show the sheets dispenser disclosed in U.S. Ser. No. 12/308,368, and that document includes a full description of that dispenser. FIGS. 1 to 8 are included herein to show the general type of dispenser with which the inner container of the present invention is intended to be used. In particular, the dispenser 1 comprises a container 2 with an opening 3 at a top side 7 thereof. The container 1 comprises a base 5 and a cover 6 hinged thereto to allow access to the interior for the loading and unloading of inner containers 50 of wet wipes.

FIGS. 3 to 5 show mounting means in the form of cylindrical boss 16, which depends inwards from said opening 3. The boss 16 is provided with resilient arms 17 with protrusions 18 at their ends. It is also provided with shaped profile 19 along its outer rim 20, and an indicator 21 on its outer surface. As is clear from FIGS. 3 and 4, the boss 16 is also slightly tapered. FIGS. 3 and 4 show the collar 54 in place on the boss.

A panel 22 is mounted in the opening 3, which carries extrusion means in the form of star shaped aperture 23. (The panel 22 is shown individually in FIG. 6). The aperture 23 provides means by which wet wipes removed from the inner container 50 can be separated.

Referring now to FIG. 9, the inner container comprises a bag 51 with the aperture 52 at its top 53. The aperture 52 is maintained by the rigid collar 54.

The rigid collar 54 has an upper circumferential flange 55, and a lower circumferential flange 56, which together define a circumferential trough 57. The bag 51 is bonded to the trough 57, thereby to secure the collar 54 in the
aperture 52. The lower circumferential flange 56 has an annular extension section 58 which extends laterally into the bag 51, and prevents the sides of the bag 51 from encroaching on the aperture 52. The collar 54 and its features are not shown in cross section in Fig. 9.

[0047] The collar 54 has a shaped profile 59 comprising a number of abutments, arranged on its inner surface 60 adjacent a lower rim 61. The collar 54 also has two slots, only one of which 62 is visible, on its inner surface 60. The other slot is opposite to slot 62. The inner surface 60 of the collar 54 is slightly tapered.

[0048] The inner container 50 carries wet wipes 63 to be dispensed. The wet wipes 63 are formed from a length of wet wipe material with perforated lines formed therein, one of which 64 is visible in Fig. 9. As such the wet wipes 63 are connected to one another end to end. As is clear from Fig. 9 the wet wipes 63 are arranged in a roll 65 inside the bag 51, which is axially aligned with aperture 52. The wet wipes 63 are removed from the inside of the roll 65 in use.

[0049] The inner container 50 is provided with a cover (not shown) which seals the aperture 52, which is removed for use. To fit the inner container 50 in the dispenser 1, it is opened up as shown in Fig. 2, and the inner container 50 is placed inside the cover 6, and the collar 54 is connected to the boss 16. (FIGS. 3 and 4 show a collar 54 in position on the boss 16, but the inner container 50 is not shown in these Figures.)

[0050] An indicator (not visible in the Figures) provided on the collar 54 is aligned with indicator 21 on the boss 16, and the collar 54 is slid over the boss 16. The inner surface 60 of the collar 54 and the outer surface of the boss 16 have corresponding tapered surfaces, such that the collar 54 slides smoothly into position on the boss 16, as shown in FIGS. 3 and 4.

[0051] As the collar 54 is slide over the boss, the resilient arms 17 engage with the slots 62. The arms 17 are pushed inward until the protrusions 18 emerge from the slots 62, and hold the collar 54 in place on the boss 16 in a snap-fit arrangement.

[0052] Simultaneous with this movement, the shaped profile 59 on the collar 54 slides neatly into the shaped profile 19 on the boss 16. The shaped profiles 59 and 19 engage before the protrusions 18 emerge from the slots, so the correct profile 59 must be used for the collar 54 to fit onto the boss 16.

[0053] The cover 6 is then hinged back onto the base 5, and fastened in position as shown in FIG. 1. The lid 4 is then opened, and the first wet wipe 63 is pulled from the inner container 50, and threaded through the star-shaped aperture 23 in the panel 22. The wet wipes 63 are then removed in sequence from the inner container 50 as they are drawn through the extrusion means.

[0054] When the wet wipes 63 have all been used up, the container 2 can be opened up again as described above, the collar 54 can be disengaged from the boss 16, and inner container 50 can be disposed of. The upper sections of the arms 17 are pressed inward until the protrusions 18 clear the slots 62, and the collar 54 can be released. A replacement inner container 50 with further wet wipes 63 can then be placed in the container 2 as described above.

[0055] In use as described above the shaped profile 59 slots into the shaped profile 19, to allow the collar 54 to be fitted onto the boss 16. Thus, if the shaped profiles of a collar and a boss do not match they cannot be connected together. This ensures that only the correct specification of wet wipe is fitted to each particular dispenser, and also that any third party products will not fit.

[0056] FIGS. 10 to 15 show a second embodiment of the present invention. In the second embodiment an inner container (not shown) is identical to inner container 50 shown in FIG. 9, however the construction of the collar 100 is different.

[0057] Referring to FIGS. 11 to 13, the collar 100 is a rigid cylindrical collar like collar 54, and it shares a number of identical features. In particular, collar 100 comprises a shaped profile 101 comprising a number of abutments, arranged on its inner surface 102 adjacent a lower rim 103. In addition, the collar 100 has a circumferential flange 104, which is the same as lower circumferential flange 56 and its extension section 58 on collar 54 described above. However, there is no upper circumferential flange, and in this case an annular portion of the bag (not shown) surrounding the aperture thereof is bonded to the upper surface 105 of the circumferential flange 104, thereby to secure the collar 100 in the aperture.

[0058] The collar 100 has an indicator arrow 106 on an outer surface 107 thereof, which is the same as that provided on collar 54.

[0059] However, unlike collar 54, collar 100 has a further shaped profile 108 comprising a number of indentations, which is provided on the inner surface 102 adjacent an upper rim 109. As is clear from the Figures, a thin panel 110 is provided along the upper rim 109 which carries the shaped profile 108. In order to facilitate this a curve-linear recessed portion 111 is provided in the inner surface 102, which extends through part of the annular extent of the collar 100, and axially from the lower rim 103 to a lip 112 below said upper rim 109.

[0060] This construction allows for the shaped profile 108 to be readily carved into the collar 100 during manufacture, and reduces friction between the shaped profile 108 and the corresponding shaped profile provided on the dispenser, which is described further below.

[0061] (This construction also provides a curve-linear extended portion 113 on the outer surface 107 of the collar, as shown in FIG. 13. This construction can allow for the collar 100 to be located at a desired rotational position in the aperture of the bag, by providing the aperture with the corresponding shape arranged at that rotational position. This can be useful if the bag has a construction which fits neatly into the dispenser at a particular rotational position, for example a bag with a seam or a Dowy base.)

[0062] The shaped profile 108 comprises a plurality of curve-linear indentations 114 formed in a pre-determined configuration from one of a number of possible combinations. This allows the shaped profile 108 to act as a key which only allows the collar 100 to be fitted to a particular dispenser which has the corresponding shaped profile, and no other.

[0063] The system employed in this construction is based on seven possible indentations arranged along the extent of the panel 110. There is a central narrow indentation 115, and three broader equally spaced indentations 116 on either side. In the case of the collar 100 shown in the Figures, the shaped profile 108 comprises the central narrow indentation 115, the three broader indentations 116 on its left, and the middle broader indentation 116 on its right. As such, collar 100 will only fit in a dispenser which has the corresponding shaped profile, and no other.

[0064] It will be appreciated that other collars can be constructed with any of a large number of alternative combinations of indentations 114, which correspond to predetermined dispensers.

[0065] FIG. 10 shows a frame component 117 of a dispenser (not shown) which is for use with an inner container with collar 100. The frame component 117 is the same as frame component 15 shown in FIG. 5, and comprises an inwardly depending cylindrical boss 118. The boss 118 is provided with resilient arms 119 with protrusions 120 at their
ends. It is also provided with shaped profile 121 along its outer rim 122, adapted to co-operate with the shaped profile 101 on collar 100.

[0066] However, boss 118 also has a further shaped profile 123 on an outer surface 124 thereof, which comprises a plurality of elongate curve-linear abutments 125. The abutments 125 correspond in shape and position to the indentations 114 on the collar 100. (As is clear from FIG. 10, two further abutments 126 and 127 are present on the boss 118, but they do not extend down the outer surface 124 of the boss 118 where the collar 100 is disposed in use. This shows how the boss 118 can be moulded with all seven possible abutments 125 in place, and can have particular abutments 125 removed to form a pre-determined combination adapted to receive only one type of collar.)

[0067] Referring to FIGS. 14 and 15, in use the collar 100 is offered up to the boss 118 with the indicator arrow 106 aligned with an equivalent indication on the boss 118 (not visible). As such, the shaped profile 101 is aligned with the shaped profile 121, and the shaped profile 108 is aligned with the shaped profile 123. The profiles 101 and 121 principally function to ensure that the collar 100 is fitted onto the boss 118 at the correct rotational position, while the profiles 108 and 123 principally function as a identifying key system which ensures that only the correct type of inner container can be fitted to a particular dispenser.

[0068] (It will be appreciated that it is also possible to alter the shaped profiles 101 and 121 to provide an additional identifying key system, which can provide further security, and an enhanced number of possible combinations of collar and boss.)

[0069] As the collar 100 is slid over the boss 118, the resilient arms 119 are pushed inward until the protrusions 120 emerge from the lower rim 103 of the collar 100, and hold the collar 100 in place on the boss 118 in a snap-fit arrangement, which is shown in FIG. 15. To remove the collar 100 from the boss 118, upper sections of the arms 119 are pressed inward until the protrusions 120 clear the lower rim 103, and the collar 100 can be released.

[0070] The embodiments described above can be altered without departing from the scope of Claim 1. For example, in one alternative embodiment (not shown) a collar is provided with only a shaped profile like profile 108 on collar 100, and not with any further shaped profile like 101 on collar 100.

[0071] In addition, in other alternative embodiments (not shown), the shaped profiles comprise a single continuous abutment or indentation with an undulating profile.

[0072] Therefore, an inner container of wet wipes is provided which can be readily fitted to a dispenser for dispensing the wet wipes. In addition, an inner container is provided which can only be fitted to pre-determined dispensers, which prevents the incorrect specification of wet wipes being fitted, and prevents unauthorised third party products from being used.

1. An inner container of sheets to be dispensed, which is adapted to be mounted inside a sheets dispenser with which it is used for dispensing said sheets, in which the inner container comprises an aperture maintained by a substantially cylindrical collar, in which said collar is adapted to mount to a mounting means of said sheets dispenser, and in which said collar is provided with a shaped profile adapted to co-operate with a corresponding shaped profile provided on said mounting means.

2. An inner container as claimed in claim 1 in which the cylindrical collar comprises an upper rim and a lower rim, and in which the shaped profile comprises a number of abutments arranged on an inner surface of the cylindrical collar, adjacent said lower rim.

3. An inner container as claimed in claim 1 in which the cylindrical collar comprises an inner surface, and in which the shaped profile comprises one or more indentations formed in said inner surface.

4. An inner container as claimed in claim 3 in which the cylindrical collar comprises an axial extent delimited by an upper rim and a lower rim, in which the inner surface of the cylindrical collar comprises a curve-linear recessed portion extending through part of the annular extent of the cylindrical collar, and axially from said lower rim to a lip below said upper rim, and in which the shaped profile is formed in the inner surface between said lip and said upper rim.

5. An inner container as claimed in claim 4 in which the one or more indentations are curve-linear.

6. An inner container as claimed in claim 5 in which the cylindrical collar comprises a second shaped profile adapted to co-operate with a corresponding shaped profile provided on said mounting means, in which the second shaped profile comprises a number of abutments arranged on an inner surface of the cylindrical collar, adjacent said lower rim.

7. An inner container as claimed in claim 1 in which the cylindrical collar is provided with an indicator on an outer surface thereof, which indicator is adapted to align with an indicator provided on said mounting means when said shaped profiles are aligned for operation.

8. An inner container as claimed in claim 1 in which the sheets to be dispensed are connected to one another in a sequence by connection means.

9. An inner container as claimed in claim 8 in which the sheets are formed from a length of material with perforated lines formed therein, in which the length of material is formed into a roll inside the inner container, which roll is axially aligned with the aperture.

10. An inner container as claimed in claim 9 in which the sheets are wet wipes.

11. An inner container as claimed in claim 1 in which the inner container comprises a bag, in which said aperture is at a top of the bag, and in which the cylindrical collar is rigid.

12. An inner container as claimed in claim 11 in which an outer surface of the cylindrical collar has an upper circumferential flange and a lower circumferential flange, which upper and lower circumferential flanges together define a circumferential trough, and in which a rim of the aperture is bonded to the trough, thereby to secure the collar in the aperture.

13. An inner container as claimed in claim 12 in which the lower circumferential flange has an annular extension section which extends laterally into the bag, and prevents the sides of the bag from encroaching on the aperture.

14. An inner container as claimed in claim 11 in which an outer surface of the cylindrical collar has a circumferential flange, and in which an annular portion of the bag surrounding the aperture is bonded to an upper surface of said circumferential flange, thereby to secure the collar in the aperture.

15. An inner container as claimed in claim 1 in which an inner surface of the cylindrical collar is tapered.

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