A container 10 for wipes 10 formed from a continuous sheet of impregnated material divided into individual wipes by lines of perforations 11 comprising a housing 2A,2B containing a supply of wipes with a dispensing nozzle 20, the nozzle having a resilient aperture 21 through which the wipes are withdrawn from the housing, the resilient aperture being expandable to allow for the withdrawal of wipes but being biased towards a closed state. In use, the nozzle contracts around the tail of the next adjacent wipe to prevent release of moisture from the inside of the housing and to help prevent wicking of moisture from a wipe tail.
Title: Container of Wipes with Dispensing Nozzle

The present invention relates to a container of wipes with a dispensing nozzle.

It is well known to house wipes in containers. Such containers typically comprise a cylindrical housing with a sealed and open end. Wipes are stored in the housing. An end cap is provided for the open end, and an aperture is provided in the end cap through which wipes are dispensed. The wipes are in the form of an elongate continuous sheet of impregnated material with spaced lines of perforations dividing the sheet of material into hand-size wipes. In use of such containers, when a wipe is withdrawn through the aperture, a line of perforations ruptures and a wipe is released from the sheet of material whilst leaving a tail of the next wipe projecting through the cap aperture.

There are three main problems associated with such containers. Often when a wipe is withdrawn from the container, the line of perforations ruptures before the wipe is fully withdrawn through the cap aperture. The tail of the next wipe is then left inside the container, and the user needs to remove the cap and feed the tail of the next wipe to be dispensed through the cap aperture. On other occasions, the lines of perforations separating the wipes may fail to rupture as the wipe is removed resulting in a ‘stream’ of wipes being inadvertently extracted when only one was required. Also the wipes are intended to be moist, but if the container if wipes is stored and not used for a length of time, the wipes dry out due to wicking and because vapour can emerge from the container through the cap aperture.
The invention seeks to provide a solution to these problems.

According to the present invention there is provided a container of wipes with a dispensing nozzle comprising:

a) a housing containing wipes, said wipes being formed on a continuous sheet of impregnated material with spaced lines of perforations dividing the sheet of material into wipes, and

b) a dispensing nozzle extending from the housing, said nozzle being formed with a resilient aperture through which wipes can be withdrawn from the housing, said resilient aperture being expandable to allow withdrawal of wipes therethrough but being biased towards a contracted state,

in use a wipe can be withdrawn through the nozzle and separated by rupturing the perforations joining the wipe to a next adjacent wipe with said nozzle expanding as required to allow passage of the wipe through the nozzle aperture, and said nozzle contracting around the tail of the next adjacent wipe to prevent release of moisture from the inside of the housing and to help prevent wicking of moisture from a wipe tail.

Preferably the nozzle is shaped such that any force pulling a wipe back through the aperture into the housing biases the nozzle aperture into a contract state.

Preferably the nozzle is formed from a flexible projection whereby the nozzle will flex toward a direction a wipe is being withdrawn.
In one embodiment the nozzle moves from a first contracted position to a second expanded position as a wipe is extracted through the aperture.

Part of the nozzle adjacent the aperture may invert when moving from the first contracted position to the second expanded position.

Preferably the nozzle is generally teat-shaped and tapers from a widened base to a tip, and an aperture is provided in the tip.

In another embodiment the nozzle wall, before a wipe is inserted therein, tapers inwards from a widened base and then curves outwards into an annular projection defining an aperture inside the wall of the projection. The inside wall of the projection may support one or more ribs or ratchet teeth to grip a wipe to help prevent a wipe passing back through the nozzle into the container.

Preferably the nozzle projects beyond the outer surface of the container.

In another embodiment the container further supports a set of teeth spaced from the nozzle which engage into perforations in the sheet of material as a wipe is withdrawn to separate a wipe from an adjacent wipe.
The container of the invention may be used in conjunction with a dispenser as described in either of patent applications nos GB0617066.6, GB0705702.9, or GB0617924.6, the contents of both of which are incorporated herein by reference.

Embodiments of the invention will now be described with reference to the accompanying drawings in which:

Figure 1 shows a perspective view of a container,

Figures 2A and 2B show a first nozzle in a contracted and expanded position,

Figures 3A and 3B show a second nozzle in a contracted and expanded position,

Figures 4A and 4B show a third nozzle in a contracted and expanded position, and

Figures 5A and 5B show a third nozzle in a contracted and expanded position.

Referring to Figure 1 there is shown a container 1 of wipes with a dispensing nozzle. Container 1 has a housing formed from cylindrical base 2A with one closed end and an end cap 2B which screws onto the other end of base 2A. Container 1 houses a roll of wipes 10, with the wipes being formed on a continuous sheet of impregnated material with spaced lines of perforations 11 dividing the sheet of material into wipes.
A teat like rubber dispensing nozzle 20 extends from an aperture in the end cap 2B and, as shown, projects beyond the outer surface of the container 1. Nozzle 20 is therefore beyond the aperture of the dispenser so as to enable easy access to the wipe if used in conjunction with a dispenser as described in patent application nos GB0617066.6, GB0705702.9, or GB0617924.6. Nozzle 20 tapers from a widened base 20A to a tip 20B, and is formed with a resilient aperture 21 through which wipes can be withdrawn from the housing as shown. The resilient aperture 21 is expandable to allow withdrawal of wipes 10 therethrough but being biased towards a contracted state. Nozzle 20 is flexible whereby the nozzle will flex toward a direction a wipe is being withdrawn.

In use a wipe 10 can be withdrawn through the nozzle 20 and separated by rupturing the perforation 11 joining the wipe to a next adjacent wipe with the nozzle expanding as required to allow passage of the wipe through the nozzle aperture. The nozzle then contracts around the tail of the next adjacent wipe to prevent release of moisture from the inside of the container 1 housing and to help prevent wicking of moisture from a wipe tail.

End cap 2B supports an annular set of teeth 30 spaced around the nozzle 20. Teeth engage into perforations in the sheet of material as a wipe is withdrawn to separate a wipe from an adjacent wipe. The teeth also ensure that the tail of the next adjacent wipe has a predetermined length substantially equal to the distance between the nozzle aperture and the teeth.
Nozzle 20 may take a variety of different shapes and constructions. A few examples are described below.

In Figure 2A and 2B there is shown in cross section a first design of nozzle 20 with an aperture 21 defined by a rolled ring 22 which moves from a first contracted position (Figure 2A) to a second expanded position (Figure 2B) as a wipe is extracted through the aperture. As shown, part of the nozzle adjacent the aperture inverts when moving from the first contracted position to the second expanded position. The nozzle is shaped such that any force pulling a wipe back through the aperture when in the expanded state into the housing biases the nozzle aperture from its expanded state into a contract state.

In Figure 3A and 3B there is shown in cross section a second design of nozzle 20 with an aperture 21 defined by a rolled tip 22 which moves from a first contracted position (Figure 3A) to a second expanded position (Figure 3B) as a wipe is extracted through the aperture 21. As shown, part of the nozzle adjacent the aperture inverts when moving from the first contracted position to the second expanded position. The nozzle is shaped such that any force pulling a wipe back through the aperture when in the expanded state into the housing biases the nozzle aperture from its expanded state into a contract state.
In Figure 4A and 4B there is shown in cross section a third design of nozzle 20 with an aperture 21 defined by a curved tip 22 which moves from a first contracted position (Figure 4A) to a second expanded position (Figure 4B) as a wipe is extracted through the aperture 21.

In Figure 5A and 5B there is shown in cross section a fourth design of nozzle 20 with an aperture 21 defined by an annular projection 22 which moves from a first contracted position (Figure 5A) to a second expanded position (Figure 5B) as a wipe is extracted through the aperture 21. Before a wipe is inserted therein, nozzle 20 wall has a widened base 20A which tapers inwards 20B and then curves outwards 20C into the annular projection 22. The tapering inwards and curving outwards of the wall creates a funnel to funnel a wipe through the aperture smoothly. This prevents wipes from bunching and clogging the nozzle, or premature severance of perforations before a wipe has fully exited the aperture 21 and exposed the tail of the next adjacent wipe.

The inside wall of the annular projection 22 may support one or more annular ratchet teeth 23 to grip a wipe to help prevent a wipe falling back through the nozzle 20 into a container. Instead of annular ratchet teeth, one or more annular ribs (e.g. semi-circular in cross-section) may be used.

The invention may take a form different to that specifically described above. For example the teeth 30 could be omitted.
The container of the invention may be used in conjunction with a dispenser as described in either of patent applications nos GB0617066.6, GB0705702.9, or GB0617924.6, the contents of which are incorporated herein by reference. In this respect the housing of wipes of this invention may have an external shape to match the internal shape of a wipe dispenser chamber. This ensures that the housing remains stable during heavy usage and ensures that the user positions the tub correctly upon insertion into a dispenser so as to correctly align the cap of the tub with the receiving means on the dispenser.

Further modifications will be apparent to those skilled in the art without departing from the scope of the present invention.
CLAIMS

1. A container of wipes with a dispensing nozzle comprising:
   a) a housing containing wipes, said wipes being formed on a continuous sheet of impregnated
      material with spaced lines of perforations dividing the sheet of material into wipes, and
   b) a dispensing nozzle extending from the housing, said nozzle being formed with a resilient
      aperture through which wipes can be withdrawn from the housing, said resilient aperture being
      biased towards a first contracted position and being expandable to a second expanded position as
      a wipe is extracted through the aperture to allow withdrawal of wipes therethrough,
      in use a wipe can be withdrawn through the nozzle and separated by rupturing the perforations
      joining the wipe to a next adjacent wipe with said nozzle expanding as required to allow passage
      of the wipe through the nozzle aperture, and said nozzle contracting around the tail of the next
      adjacent wipe to prevent release of moisture from the inside of the housing and to help prevent
      wicking of moisture from a wipe tail.

2. A container of wipes according to claim 1, wherein the nozzle is shaped such that any force
   pulling a wipe back through the aperture into the housing biases the nozzle aperture into a
   contract state.

3. A container of wipes according to claim 1 or 2, wherein the nozzle is formed from a flexible
   projection whereby the nozzle will flex toward a direction a wipe is being withdrawn.
4. A container of wipes according to any preceding claim, wherein part of the nozzle adjacent the aperture may invert when moving from the first contracted position to the second expanded position.

5. A container of wipes according to any preceding claim, wherein the nozzle is generally teat-shaped and tapers from a widened base to a tip, and an aperture is provided in the tip.

6. A container of wipes according to any preceding claim, wherein the nozzle wall, before a wipe is inserted therein, tapers inwards from a widened base and then curves outwards into an annular projection defining an aperture inside the wall of the projection.

7. A container of wipes according to claim 6, wherein the inside wall of the projection may support one or more ribs or ratchet teeth to grip a wipe to help prevent a wipe passing back through the nozzle into the container.

8. A container of wipes according to any preceding claim, wherein the nozzle projects beyond the outer surface of the container.

9. A container of wipes according to any preceding claim, wherein the container further supports a set of teeth spaced from the nozzle which engage into perforations in the sheet of material as a wipe is withdrawn to separate a wipe from an adjacent wipe.
10. A container of wipes substantially as hereinbefore described with reference to and as shown in the accompanying drawings.
Application No: GB0710596.8  
Claims searched: 1-10  
Examiner: Mr Mike Leaning  
Date of search: 17 August 2007

Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

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| A.E      | -                  | WO2006/124429 A1  
(BKI HOLDING CORP.) Please see the figures. A centre-pull dispenser with a fixed nozzle and a moisture-retaining shape to the lower portion of the main 180 and secondary 300 portions of the housing. |
| A        | -                  | US6328252 B1  
(NEVEU et al.) Please see the figures. A wipes dispenser with a fixed nozzle. |
| A        | -                  | US6186374 B1  
(GROSS) Please see the figures. A container for fluent products with a resilient dispensing nozzle through which the contents of the container are withdrawn, the resilient nozzle being expandable when dispensing and being biased towards a closed state. |
| A        | -                  | US5542568 A  
(JULIUS) Please see the figures and column 1 line 54 to column 2 line 13. A wipes dispenser with a non-resilient dispensing opening of fixed size. |
| A        | -                  | US5246137 A  
(SCHUTZ et al.) Please see the figures. A product dispenser having a non-resilient dispensing nozzle that may be changed in size by selecting from a number of different linings. |
| A        | -                  | US5215211 A  
(EBERLE) Please see the figures and column 6 lines 7-19. A sheet material dispenser with a ball-and-socket type of mount for a dispensing nozzle 48 that is non-resilient but may be of a size selected to best suit the material to be dispensed. |
| A        | -                  | DE4006987 A1  
(PENATEN GmbH) Please see the figures noting the 'ductile cap' 5. A dispenser for wet, as opposed to damp, facial tissues. |

Categories:

- X Document indicating lack of novelty or inventive step  
- Y Document indicating lack of inventive step if combined with one or more other documents of same category.  
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Field of Search:
Search of GB, EP, WO & US patent documents classified in the following areas of the UKC
B8M; B8T
Worldwide search of patent documents classified in the following areas of the IPC
A47K; B65D
The following online and other databases have been used in the preparation of this search report
Online: WPI, EPDOC.

International Classification:

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