(51) International Patent Classification: B65D 83/08

(21) International Application Number: PCT/US2004/036209

(22) International Filing Date: 29 October 2004 (29.10.2004)

(25) Filing Language: English

(26) Publication Language: English


(72) Inventors; and


(54) Title: NIGHTTIME LOCATABLE DISPENSER

(34) References cited in specification:


(37) Other References:
P. N. G. S. Clancy, As stated in "US Patent No. 1,071,081", issued on February 18, 2003, comprising a package (20) containing at least one disposable article (39) and wherein at least a portion of the package's exterior comprises a glowl in the dark material (42). In one embodiment, the product comprises: a package (20) having an exterior (21) and an interior, the interior of the package containing at least one disposable article (39); a dispensing opening (34) located in the package for withdrawing the disposable article (39) from the interior; and wherein at least a portion of the exterior comprises a glow in the dark material (42) that highlights the location of the dispensing opening (34).

(57) Abstract: A product comprising a package (20) containing at least one disposable article (39) and wherein at least a portion of the package's exterior comprises a glow in the dark material (42). In one embodiment, the product comprises: a package (20) having an exterior (21) and an interior, the interior of the package containing at least one disposable article (39); a dispensing opening (34) located in the package for withdrawing the disposable article (39) from the interior; and wherein at least a portion of the exterior comprises a glow in the dark material (42) that highlights the location of the dispensing opening (34).
NIGHTTIME LOCATABLE DISPENSER

BACKGROUND

Disposable articles, such as facial tissues, are often placed into packaging for storing and dispensing of the articles. For example, facial tissues are often packaged into either an upright or flat carton for dispensing. Many people keep a box of facial tissues located near their bed for use by placing them on a nightstand, a table, or the floor. While placement of the tissue box near the bed is convenient, during the middle of the night, when the room is dark, the tissue box can be hard to locate without the assistance of a light.

European patent application EP 1 357 046, filed April 17, 2003 entitled Packaging Wrapper for Hygiene or Wiping Products and herein incorporated by reference, discloses a packaging wrapper having part or parts that exhibit an afterglow in the dark for assistance in locating the product in the dark.

However, even if the wrapper is located or observable by glowing in the dark, finding the exact location of the exposed tissue sheet can also be a problem when the tissue must be grabbed quickly to catch a sneeze, cough, or otherwise be rapidly found without fumbling with the box to find the exposed sheet. Another situation where it might be necessary to quickly locate the dispensing opening is for packages containing disposable articles that are used while driving at night. The dispensing opening needs to be quickly located so as not to prolong the driver’s distraction while reaching for the article. Thus, there is a need for a package containing disposable articles that can be readily found in the dark. There is also a need for a package that helps direct a person to the dispensing opening for ease of dispensing the disposable articles in the dark.

SUMMARY

The inventors have found that the above problems can be overcome by a package having at least a portion that glows in the dark to help a person find the package in the dark. Furthermore, by placing the glow in the dark material at specific locations on the package, the dispensing opening can be highlighted, enabling a person to immediately locate the disposable article.

Hence, in one aspect, the invention resides in a product comprising: a package having an exterior and an interior, the interior of the package containing at least one disposable article; a dispensing opening located in the package for withdrawing the
disposable article from the interior; and wherein at least a portion of the exterior comprises a glow in the dark material that highlights the location of the dispensing opening.

**BRIEF DESCRIPTION OF THE DRAWINGS**

The above aspects and other features, aspects, and advantages of the present invention will become better understood with regard to the following description, appended claims, and accompanying drawings in which:

Figure 1 illustrates an upright facial tissue package.

Figure 2 illustrates a flat facial tissue package.

Figure 3 illustrates a wet wipes package.

Figure 4 illustrates a cylindrical package.

Repeated use of reference characters in the specification and drawings is intended to represent the same or analogous features or elements of the invention.

**DEFINITIONS**

As used herein, forms of the words “comprise”, “have”, and “include” are legally equivalent and open-ended. Therefore, additional non-recited elements, functions, steps or limitations may be present in addition to the recited elements, functions, steps, or limitations.

As used herein, “disposable article” means an item intended for a single use after which it is thrown away. Examples of disposable articles include, but are not limited to, paper products such as facial tissue, bath tissue, and paper towels; infant products such as diapers, nappies, and wet wipes; child products such as training pants, swimwear, and bedwetting products; feminine products such as sanitary napkins, liners, and tampons; adult incontinent products such as undergarments, briefs, guards for men, and liners; cleaning products such as wipes, makeup removal pads; and health care products such as masks, gloves, gowns, and drapes.

As used herein, “glow in the dark material” means a fluorescent, a phosphorescent, a luminescent, a chemiluminescent, or a bioluminescent material that emits light without the need for an external electrical power source such as a battery or electrical plug.
DETAILED DESCRIPTION

It is to be understood by one of ordinary skill in the art that the present discussion is a description of exemplary embodiments only, and is not intended as limiting the broader aspects of the present invention, which broader aspects are embodied in the exemplary construction.

Referring now to Figure 1, a package 20 having an exterior 21 and enclosing an interior is shown. Disposed within the package’s interior is a disposable article 22. In this embodiment, the package comprises an upright facial tissue carton and the disposable article comprises a plurality of facial tissues. In an upright tissue carton, the facial tissues are formed into an inverted U-shaped stack before being placed into the carton. The package includes a top 24, a bottom 26, and a sidewall 28. In the illustrated embodiment, the sidewall comprises four generally rectangular panels, such as panels 30, and 32, that intersect at approximately 90 degree angles. Located in the top is a dispensing opening 34.

The dispensing opening 34 can comprise a simple cutout through the package exterior enabling access to the package’s interior. In other embodiments, the dispensing opening can include additional elements such as a dispensing film 36 having an aperture 38 in the form of an X-shaped cut. In yet another embodiment, the dispensing opening can include a removable cover or surfboard that is removed to access the facial tissue. The facial tissues 39 are dispensed through the dispensing opening and can be prevented from falling back into the carton’s interior by the aperture within the film. The package can also have a brand indicator 40 that can be placed on any portion of the exterior. The brand indicator can either identify the manufacturer of the product or represent a trademark linked to the manufacturer of the product. At least a portion of the exterior surface of the package comprises a glow in the dark material.

To further enhance the functionality of the package, and in particular to aid in finding the exposed facial tissue residing within the dispensing opening, the placement of the glow in the dark material is optimized. For example, the entire top 24, exclusive of the dispensing opening and dispensing film, can comprise a glow in the dark material. Thus, the darkened location of the dispensing opening 34 would be easily observable in the top, quickly enabling a person to find the exposed facial tissue in the dark.

In another embodiment, the dispensing film 36 can comprise a glow in the dark material to highlight the location of the dispensing opening 34. The glow in the dark
dispensing film can have multiple fingers or petals that would help to find the exposed
tissue and could even illuminate portions of the exposed tissue adjacent the film.

In another embodiment, the sidewall 28 can comprise a glow in the dark material
such that the top and dispensing opening would appear darkened. This also serves to
highlight the dispensing opening’s location. Because the top would appear dark relative to
the other visible exposed portions of the package, a person could simply move their hand
towards the darkened area and grab the exposed tissue.

In another embodiment, different portions of the package’s exterior can comprise
different colors or contrasting glow in the dark materials to highlight the location of the
dispensing opening. For example, the top can comprise one color such as fluorescent green
and the sidewall can comprise another color such as fluorescent orange. Alternatively, the
dispensing film and top can comprise contrasting glow in the dark materials. In either case,
the contrast in color between different portions of the package’s exterior can be used to
highlight the dispensing opening or its location.

In addition to highlighting the location of the dispensing opening with the glow in
the dark material, the brand indicator 40 can comprise a glow in the dark material. Thus,
by means of the glowing brand indicator, the package will function similar to a billboard or
advertisement when placed into a darkened environment. Illumination of the brand
indicator will further strengthen the brand’s recognition with the purchaser and enhance the
comfort or satisfaction of the consumer in using that particular brand. In one embodiment,
a glow in the dark brand indicator was placed onto each of the four panels comprising the
sidewall. Thus, regardless of the package’s orientation relative to the observer, at least one
of the glowing brand indicators should be visible in the dark reinforcing the supplier or
source of the product.

Referring now to Figure 2, another package 20 having an exterior 21 and enclosing
an interior is shown. Disposed within the package’s interior is a disposable article. In this
embodiment, the package comprises a flat facial tissue carton and the disposable article
comprises a plurality of facial tissues. In a flat facial tissue carton, the stack of tissues
within the carton is not bent or folded as done in an upright carton. As before, the package
includes a top 24, a bottom 26, and a sidewall 28. In the illustrated embodiment, the
sidewall 28 comprises four generally rectangular panels, such as panels 30, and 32, that
intersect at approximately 90 degree angles.
Located in the top is a dispensing opening 34. The dispensing opening can comprise a simple cutout through the package exterior enabling access to the package’s interior. In other embodiments, the dispensing opening can include additional elements such as a dispensing film 36 having an aperture 38 in the form of a slit. In yet another embodiment, the dispensing opening can include a removable cover or surf board that is removed to access the facial tissue. The facial tissues 39 are dispensed through the dispensing opening and can be prevented from falling back into the carton’s interior by the aperture within the film. At least a portion of the exterior surface of the package comprises a glow in the dark or phosphorescent material.

To further assist in locating the dispensing opening or the exposed facial tissue, the package can include at least one indicia 42 comprising a glow in the dark material. The indicia can be stripes, arrows, straight lines, curved lines, circles, figures, geometric shapes, or other patterns that point towards, surround, or intersect with the dispensing opening.

In the illustrated embodiment, the phosphorescent indicia includes a plurality of arrows 44 pointing towards the dispensing opening, a plurality of diagonal lines 46 intersecting with the dispensing opening, and at least one curved line 48 that surrounds the dispensing opening. The arrows, diagonal lines, curved lines, or other indicia can be used either independently or in any desired combination. Because the glow in the dark indicia are used to highlight the location of the dispensing opening, the exposed facial tissue is readily found in the dark.

Variations of the illustrated indicia are possible. For example, the location, number, size, and shape of the arrows can be varied. More than one curved line surrounding the dispensing opening can be included forming a figure similar to a bull’s-eye. The curved line can be spaced away from the dispensing opening instead of being immediately adjacent to it. The curved line could be discontinuous or dashed. The location, number, and size of the diagonal lines can be varied.

Referring now to Figure 3, another package 20 having an exterior 21 and enclosing an interior is shown. Disposed within the package’s interior is a disposable article. In this embodiment, the package comprises a wet wipes dispenser and the disposable article comprises a plurality of wet wipes. The package includes a top 24, a bottom 26, and a sidewall 28. In the illustrated embodiment, the sidewall comprises four generally rectangular panels, such as panels 30, and 32, that intersect at approximately 90 degree angles.
The top of the dispenser is connected to the sidewall with hinges such that the entire top can be opened for refilling the dispenser. Located in the top is a dispensing opening 34. The dispensing opening comprises a dispensing cover 50, a flexible dispensing membrane 52 with an aperture 38 and a button 54 for opening the dispensing cover. The dispensing cover is connected to the top with hinges. Upon actuation of the button, the dispensing cover can spring open to reveal the exposed wet wipe (not shown) located beneath the cover. At least a portion of the exterior of the package comprises a glow in the dark material.

In one embodiment of the invention, the glow in the dark portion of the package comprises the button, thus pointing out to someone using the package in the dark exactly where to apply pressure to open the dispensing cover for access to the exposed portion of the wet wipe. Highlighting the button with a glow in the dark material highlights the dispensing opening’s location. In another embodiment of the invention, the dispensing cover can be transparent and both the button and the flexible membrane can comprise a glow in the dark material. Thus, after the button is actuated and the dispensing cover springs open, the glowing flexible dispensing membrane would further assist in locating the exposed portion of the wet wipe and the location of the dispensing opening.

In another embodiment of the invention, the top, exclusive of the dispensing cover and button, can comprise the glow in the dark material, thereby highlighting the darkened dispensing opening. Alternatively, the top and the dispensing cover can comprise the glow in the dark material and thereby highlight the non-glowing or darkened button. In either case, the contrast between the glowing portions of the package’s exterior and the dark portions will highlight the dispensing opening’s location.

In another embodiment of the invention, the glow in the dark portion of the package comprises the dispensing cover to highlight the dispensing opening’s location. By making the cover glow in the dark, a person could conveniently locate the adjacent button, which could have a raised or otherwise textured portion 56, thus enabling rapidly finding the button even if the button itself did not glow.

In another embodiment, different portions of the package’s exterior can comprise different colors or contrasting glow in the dark materials to highlight the location of the dispensing opening. For example, the dispensing cover can comprise one color such as fluorescent green and the button can comprise another color such as fluorescent orange. Alternatively, the top exclusive of the dispensing cover comprise one contrasting glow in
the dark material and the button another contrasting glow in the dark material. Any two or more elements such as the top, the dispensing cover, the button, or the dispensing membrane can comprise contrasting glow in the dark materials. In any case, the contrast in color between different portions of the package's exterior can be used to highlight the dispensing opening or its location.

Referring now to Figure 4, another package 20 having an exterior 21 and enclosing an interior is shown. Disposed within the package's interior is a disposable article 22 (not shown). In this embodiment, the package comprises a dispenser suitable for placement in an automobile cup holder, and the disposable article can comprise either wet wipes or facial tissue. The package includes a removable top 24, a bottom 26, and a sidewall 28. At least a portion of the exterior of the package comprises a glow in the dark material.

In the illustrated embodiment, the sidewall is generally circular and comprises a larger diameter upper portion and a smaller diameter lower portion for insertion into a cup holder. Alternatively, the circular sidewall can be straight or tapered for insertion into the cup holder. Alternatively, the maximum dimension of the lower portion of the sidewall can be designed to fit into the cup holder and the remaining portions of the sidewall can be configured in any suitable manner.

The dispensing opening 34 is hidden beneath the dispensing cover 50, which is attached to the removable top by a flexible strap 58. The dispensing cover also includes a finger tab 60, which can be used to open the dispensing cover to reveal the dispensing opening and the exposed portion of the wipe or facial tissue.

In one embodiment, the location of the dispensing opening is highlighted by applying a circular glow in the dark pressure sensitive label to the dispensing cover. In another embodiment, only the finger tab is highlighted by a glow in the dark material. As with the other embodiments of the invention, contrasting glow in the dark materials or contrasts between the glowing exterior portions and the darkened exterior portions of the package can be used. For example, the dispensing cover, finger tab, and/or strap can be one glow in the dark color or appear darkened if the top glows, and the removable top can be another glow in the dark color or appear darkened if the dispensing cover, finger tab, and/or strap glows.

The glow in the dark material can be incorporated to the exterior of the package in a number of ways. For example, in-mold labeling with glow in the dark materials can be used. Glow in the dark pressure sensitive labels can be used. Glow in the dark shrink wrap
sleeves or films can be used. Glow in the dark materials forming various portions of the package can be used such as glow in the dark pigments suitable for incorporation into thermoplastics or thermosetting plastics. Glow in the dark inks can be used.

The glow in the dark material can glow for a length of time suitable to the intended purpose and have a luminance or brightness suitable for the intended purpose. In one embodiment of the invention, the brightness during the afterglow period can be about 0.32 millicandela per square meter (mcd/m²) or greater, which is approximately 100 times the limit of human perception in order to ensure that the glowing material was sufficiently visible. In other embodiments of the invention, the brightness of the glow in the dark material can be about 0.6 mcd/m² or greater, about 1 mcd/m² or greater, about 2 mcd/m² or greater, about 10 mcd/m² or greater, about 40 mcd/m² or greater, between about 0.3 mcd/m² to about 2000 mcd/m², or between about 1 mcd/m² to about 500 mcd/m².

In various embodiments of the invention, the extinction time for the brightness of the afterglow to diminish to less than 0.32 mcd/m² at a temperature of 73 degrees Fahrenheit can be about 1 hour or greater, about 3 hours or greater, about 5 hours or greater, about 8 hours or greater, between about 1 hour to about 12 hours, or between about 8 hours to about 10 hours.

Longer duration extinction times and higher brightness levels can be used for applications where a person may need to find the dispenser and the dispensing opening’s location in the middle of the night quickly without disturbing someone else who may be sleeping. However, the brightness level should not be too great, which could serve as a distraction while attempting to fall asleep. For this embodiment, in order to ensure that the dispenser remains visible overnight when placed adjacent to the bed, the glow in the dark portions of the package should have a brightness of about 0.32 mcd/m² or greater for a duration of about 8 hours or greater.

Examples of suitable glow in the dark materials include phosphorescent, long after glow phosphorescent, light emitter, or fluorescent substances. The glow in the dark material may be for example a polycrystalline inorganic zinc sulphide which can create a green illumination or an alkaline earth sulphide which can create a red or blue illumination. In general, there are two categories of phosphors: zinc sulfide and oxides of strontium aluminate that are suitable glow in the dark materials, with the zinc sulfide having a shorter extinction time as compared to the longer lived strontium aluminate.
The glow in the dark material may be a SAFE-GLO or SPARKLE-GLO film available from Coburn Corporation in New Jersey. SAFE-GLO film comprises a rigid PVC copolymer with an incorporated second surface of an inorganic zinc sulfide phosphor. SPARKLE-GLO has transparent polyester particles harmoniously dispersed within the second surface and is offered in four different color hues.

Suitable glow in the dark materials are available from LUNAPLAST long afterglow LUNA Technologies International in Kent, Washington, who are makers of high performance photoluminescent lighting, coatings, compounds, films and paints. LUNAPLAST long afterglow photoluminescent pigment, available from LUNA Technologies, can be used for the glow in the dark material.

Suitable glow in the dark materials are available from Nemoto & Co. Ltd, Tokyo, Japan, makers of phosphorescent and fluorescent pigments. LUMINOVA is a suitable glow in the dark material based on strontium aluminate and is disclosed in U.S. patent 5,424,006 entitled Phosphorescent Phosphor issued on June 13, 1995, to Murayama et al., and herein incorporated by reference.

Suitable glow in the dark materials are available from Honeywell Specialty Chemicals Seelze GmbH, Seelze, Germany. Honeywell Specialty Chemicals makes several LUMILUX branded glow in the dark materials, including LUMILUX SN and N pigments that qualify as long afterglowing products according to DIN 67510 part 4 that are suitable for the glow in the dark material. Additional glow in the dark materials are disclosed in US Pub. No. 2003/0225386 A1 entitled Glow in the Dark Absorbent Article, published on December 4, 2003, to Jose Luis Rodriguez, and herein incorporated by reference.

Other modifications and variations to the present invention may be practiced by those of ordinary skill in the art, without departing for the spirit and scope of the present invention, which is more particularly set forth in the appended claims. For example, different packages than those illustrated may be used and different disposable articles can be housed in the packages. It is understood that aspects of the various embodiments may be interchanged in whole or part. All cited references, patents, or patent applications in the above application for letters patent are herein incorporated by reference in a consistent manner. In the event of inconsistencies or contradictions between the incorporated references and this application, the information present in this application shall prevail. The preceding description, given by way of example in order to enable one of ordinary skill
in the art to practice the claimed invention, is not to be construed as limiting the scope of the invention, which is defined by the claims and all equivalents thereto.
CLAIMS

We Claim:

1. A product comprising:
   a package having an exterior and an interior, the interior of the package containing at
   least one disposable article;
   a dispensing opening located in the package for withdrawing the disposable article
   from the interior; and
   wherein at least a portion of the exterior comprises a glow in the dark material that
   highlights the location of the dispensing opening.

2. A product comprising:
   a package having an exterior comprising a top, a bottom, and a sidewall enclosing an
   interior, the interior of the package containing at least one disposable article;
   a dispensing opening located in the top for withdrawing the disposable article from
   the interior; and
   wherein at least a portion of the exterior comprises a glow in the dark material that
   highlights the location of the dispensing opening.

3. The product of claim 1 or 2 wherein the package comprises a facial tissue carton.

4. The product of claim 1 or 2 wherein the glow in the dark material comprises an oxide
   of strontium aluminate.

5. The product of claim 1 or 2 wherein the disposable article comprises facial tissue.

6. The product of claim 1 or 2 wherein the disposable article comprises a wet wipe.

7. The product of claim 1 or 2 comprising a brand indicator located on the package’s
   exterior and wherein the brand indicator comprises a glow in the dark material.
8. The package of claim 1 or 2 wherein the exterior portion of the package comprising the glow in the dark material comprises glow in the dark indicia.

9. The package of claim 8 wherein the indicia comprise at least one arrow pointing to the dispensing opening.

10. The package of claim 8 wherein the indicia comprise at least one diagonal line intersecting with the dispensing opening.

11. The package of claim 8 wherein the indicia comprise at least one curved line surrounding the dispensing opening.

12. The product of claim 2 wherein the highlighted dispensing opening comprises a glow in the dark sidewall and a darkened top.

13. The product of claim 2 wherein the highlighted dispensing opening comprises a glow in the dark top and a darkened dispensing opening.

14. The product of claim 2 comprising a film having an aperture located in the dispensing opening and wherein the film comprises a glow in the dark material.

15. The product of claim 1 or 2 comprising a dispensing cover covering the dispensing opening and wherein the dispensing cover comprises a glow in the dark material.

16. The product of claim 2 comprising a dispensing cover covering the dispensing opening and wherein the top and the cover appear in contrasting hues from application of the glow in the dark material.
17. The product of claim 2 comprising a dispensing cover covering the dispensing opening and a button for opening the dispensing cover and wherein the button comprises a glow in the dark material.

18. The product of claim 2 wherein the sidewall comprises four generally rectangular panels intersecting at approximately 90 degree angles.

19. The product of claim 2 wherein the sidewall comprises a circular shape.

20. The product of claim 1 or 2 wherein the glow in the dark material has a brightness of about 0.32 mcd/m² or greater and an extinction time of about 5 hours or greater.
**INTERNATIONAL SEARCH REPORT**

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC 7 B65D83/08

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic database consulted during the international search (name of database and, where practical, search terms used)

EPO-Internal

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>WO 2005/018370 A (DODD, CAROLINE, MARIE) 3 March 2005 (2005-03-03) page 5, line 5 - line 10; figure 3</td>
<td>1-3,8, 13,18</td>
</tr>
<tr>
<td>A</td>
<td>EP 1 357 046 A (SCA HYGIENE PRODUCTS GMBH) 29 October 2003 (2003-10-29) cited in the application paragraph <em>0006</em></td>
<td>1</td>
</tr>
<tr>
<td>A</td>
<td>US 4 465 215 A (KAI ET AL) 14 August 1984 (1984-08-14) column 5, line 6 - line 45 column 8, line 58 - line 64; figure 1</td>
<td>1</td>
</tr>
<tr>
<td>A</td>
<td>WO 00/55743 A (ADD-VISION, INC) 21 September 2000 (2000-09-21) page 2, line 20 - page 3, line 12</td>
<td>1</td>
</tr>
</tbody>
</table>

**X** Further documents are listed in the continuation of box C.

**X** Patent family members are listed in annex

* Special categories of cited documents

*A* document defining the general state of the art which is not considered to be of particular relevance

*E* earlier document but published on or after the international filing date

*L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

*O* document referring to an oral disclosure, use, exhibition or other means

*P* document published prior to the international filing date but later than the priority date claimed

**TT** later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

**X** document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

**Y** document of particular relevance, the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

**X** document member of the same patent family

**Date of the actual completion of the international search**

17 June 2005

**Date of mailing of the international search report**

01/07/2005

**Name and making address of the ISA**

European Patent Office, P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk
Tel (+31-70) 340-2040, Tx 31 651 epo nl, Fax (+31-70) 340-3016

**Authorized officer**

Vesterholm, M
<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>US 6 523 690 B1 (BUCK FREDERICK ALLAN ET AL) 25 February 2003 (2003-02-25) figure 1</td>
<td>1</td>
</tr>
<tr>
<td>A</td>
<td>EP 0 953 516 A (THE PROCTER &amp; GAMBLE COMPANY) 3 November 1999 (1999-11-03) paragraph ‘0009! – paragraph ‘0010!; figure 1</td>
<td>1</td>
</tr>
<tr>
<td>Patent document cited in search report</td>
<td>Publication date</td>
<td>Patent family member(s)</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>-----------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>WO 2005018370 A</td>
<td>03-03-2005</td>
<td>WO 2005018370 A1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EP 1357046 A1</td>
</tr>
<tr>
<td>US 4465215 A</td>
<td>14-08-1984</td>
<td>JP 57125140 A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JP 1516633 C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JP 57149190 A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JP 63063360 B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JP 57183946 A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AU 553404 B2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AU 7983782 A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CA 1175015 A1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DE 3270539 D1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EP 0057017 A1</td>
</tr>
<tr>
<td>WO 0055743 A</td>
<td>21-09-2000</td>
<td>AU 3887400 A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>WO 0055743 A1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BR 0109717 A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CA 2399249 A1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CN 1418166 A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EP 1268308 A1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JP 2003529505 T</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MX PA02009347 A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TW 555540 B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>WO 0174687 A1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AT 228959 T</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AU 3163799 A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BR 9909984 A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CA 2330098 A1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CN 1298361 A ,C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DE 69904316 D1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DE 69904316 T2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EP 1075436 A1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ES 2186342 T3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HK 1034499 A1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>WO 9955599 A1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JP 2002534324 T</td>
</tr>
<tr>
<td></td>
<td></td>
<td>US 6419114 B1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ZA 200005299 A</td>
</tr>
</tbody>
</table>