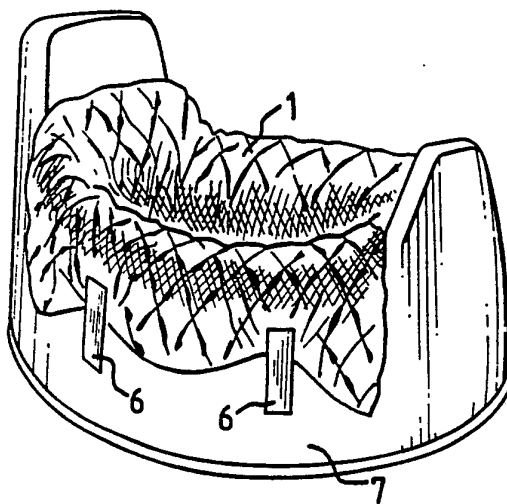




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

| | | |
|--|---|--|
| (51) International Patent Classification ⁵ : A47K 11/06 | A1 | (11) International Publication Number: WO 90/11714 (43) International Publication Date: 18 October 1990 (18.10.90) |
| <p>(21) International Application Number: PCT/GB90/00487</p> <p>(22) International Filing Date: 2 April 1990 (02.04.90)</p> <p>(30) Priority data: 8907272.2 31 March 1989 (31.03.89) GB</p> <p>(71)(72) Applicant and Inventor: HARRISON, Ian, Alexander [GB/GB]; 1 Sefton Lodge, 207-209 Richmond Road, Kingston-upon-Thames, Surrey KT2 5DE (GB).</p> <p>(74) Agent: HACKETT, Sean, James; Marks & Clerk, 57-60 Lincoln's Inn Fields, London WC2A 3LS (GB).</p> | <p>(81) Designated States: AT (European patent), BE (European + patent), CA, CH (European patent), DE (European patent), DK (European patent), ES (European patent), FR (European patent), GB (European patent), IT (European patent), LU (European patent), NL (European patent), SE (European patent), US.</p> <p>Published <i>With international search report.</i></p> | |

(54) Title: DISPOSABLE CHAMBER-POT LINERS



(57) Abstract

A disposable chamber-pot liner comprises a waterproof translucent plastics wall. The plastics wall (1) has folded sides (2 and 3) and a closed end (4). A soft padded lining (5) is adhered to the inner surface of the liner and is impregnated with a colour changing means which changes colour on contact with urine. Self adhesive tabs (6) are provided for securing the liner (1) to the chamber-pot.

DESIGNATIONS OF "DE"

Until further notice, any designation of "DE" in any international application whose international filing date is prior to October 3, 1990, shall have effect in the territory of the Federal Republic of Germany with the exception of the territory of the former German Democratic Republic.

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

| | | | | | |
|----|------------------------------|----|--|----|--------------------------|
| AT | Austria | ES | Spain | MG | Madagascar |
| AU | Australia | FI | Finland | ML | Mali |
| BB | Barbados | FR | France | MR | Mauritania |
| BE | Belgium | GA | Gabon | MW | Malawi |
| BF | Burkina Faso | GB | United Kingdom | NL | Netherlands |
| BG | Bulgaria | HU | Hungary | NO | Norway |
| BJ | Benin | IT | Italy | RO | Romania |
| BR | Brazil | JP | Japan | SD | Sudan |
| CA | Canada | KP | Democratic People's Republic of Korea | SE | Sweden |
| CF | Central African Republic | KR | Republic of Korea | SN | Senegal |
| CG | Congo | LI | Liechtenstein | SU | Soviet Union |
| CH | Switzerland | LK | Sri Lanka | TD | Chad |
| CM | Cameroon | LJ | Luxembourg | TG | Togo |
| DE | Germany, Federal Republic of | MC | Monaco | US | United States of America |
| DK | Denmark | | | | |

DISPOSABLE CHAMBER-POT LINERS

This invention relates to disposable chamber-pot liners.

Existing disposable liners are invariably bag-shaped in construction and consist of a generally opaque thin plastics material. They are generally suitable for holding solid or fluid waste material but are not suitable for lining a chamber-pot.

One disadvantage with such disposable liners is that fluids held within them can leak or spill from the liner if the liner becomes punctured or is dropped. Leakage or spillage can be a serious problem particularly when the fluids are harmful, or if the fluids are ones which may stain household items such as carpets. Leakage or spillage of fluids from a disposable liner may be unpleasant in the case where the fluids are human or animal waste material, that is urine and the like.

It is an aim of the present invention to provide a disposable chamber-pot liner of a size and configuration suitable for lining a chamber-pot and which overcomes the aforementioned disadvantage.

According to the present invention, there is provided a disposable chamber-pot liner which is generally bag-shaped and comprises a non-permeable base material supporting an absorbent layer on at least part of one side thereof, which absorbent layer is suitable for absorbing and retaining fluids.

Embodiments of the invention have the advantage that they absorb and retain fluids (i. e. urine) thereby reducing or eliminating the risk of spillage of the fluids therefrom when the liner is removed from the chamber-pot and thrown away.

Means may be provided within the absorbent layer for changing colour on contact with one or more of the fluids.

The plastics material of the liner may be translucent so that the colour change can be seen from the side of the liner not covered with the absorbent layer.

The disposable chamber-pot liner may be provided with means for securing the liner to the chamber-pot. The securing means may be in the form of adhesive tabs positioned around the opening of the liner. Alternatively, the securing means may be in the form of

a draw-cord or integrally moulded handles positioned around the opening of the liner.

In a preferred embodiment of the invention, part or all of the external surface of the disposable liner may be formed so as to have a tendency to cling to the container which is lined by the liner. More specifically, the plastics material itself may be of a material which inherently has this tendency.

Embodiments comprising the draw-cord have the advantage that the liner may be closed in a relatively simple manner after use, thereby preventing the spillage of fluids and/or solid materials from within.

The means provided within the absorbent layer for changing colour may be a material which has one colour in its anhydrous salt form and a different colour in the hydrated salt form. Such materials maybe of a water soluble nature, for example, copper sulphate which is white when anhydrous and turns blue on contact with water which forms part of the urine. The degree of blue colouring within the absorbent layer of the lining may serve to indicate the extent to which the liner is filled. This may in turn indicate the need to replace the chamber-pot liner.

Alternatively cobalt chloride may be used which is blue when anhydrous and pink when hydrated.

Alternatively, the salt may be water-insoluble, such as cobalt carbonate which is blue when anhydrous and pink when hydrated.

In a preferred embodiment of the invention a means of providing a colour change would be the use of an acid/base indicator. Such materials change colour in response to a change in pH (acidity or alkalinity) in the contact medium. Since the normal pH range of urine is 6.0 - 6.5 (that is, slightly acid) any indicator which changes colour at pH values below 7 or above 5.5 will serve to indicate the presence of urine. Suitable acid/base indicators may include litmus (blue when alkaline changing to pink when acid) and phenolphthalein (pink when alkaline changing to colourless when acid). Other suitable indicators may include but are not limited to bromocresol purple, bromophenol red, nitrazine yellow, bromothymol blue, brilliant yellow, neutral red, methyl red, ethyl red and chlorophenol red. Such indicators may be used alone or in combination to form clear colour changes when in contact with urine.

In an alternative embodiment of the invention, the

absorbent layer of the chamber-pot liner comprises, for example, diacetyl monoxime reagent (consisting of: diacetyl monoxide - $\text{CH}_3\text{CO.C}(\text{NOH})\text{CH}_3$ - in solution with sodium chloride and BRIJ 35, that is the polyethylene glycol ether of lauryl alcohol). Alternatively, the means for changing colour may be a ferric alum reagent, consisting of ammonium ferric sulphate in acid solution.

These substances produce a pronounced colour on contact with urine. This has the advantage that a child's mother can more easily determine whether and to what extent any urine has been passed by her child using the chamber-pot lined with disposable liner. This is in addition to the advantage that the urine is absorbed by the absorbent layer and retained therein, thereby reducing or eliminating the risk of spillage. A further advantage with impregnation of the absorbent layer in this manner is that the change in colour on contact with the urine may act as a point of interest to the child thereby making use of the chamber-pot more attractive for the child.

The colour change means may be distributed within the absorbent layer in such a manner that shapes, for example, animal shapes appear on the absorbent layer when the chamber-pot is used. The colour change means

may be printed on or otherwise incorporated into the absorbent layer in pattern form such that, for example geometrical shapes appear when the chamber-pot is used. Naturally any shape may be printed on or incorporated into the liner. This aspect of the embodiment is likely to encourage a child to use the chamber-pot on account of the attraction of patterns being formed during use.

Another significant advantage with this embodiment is that after use, the waste matter of the child can be disposed of easily without the need to clean or sterilise the chamber-pot.

Embodiments of the invention may be packaged in sheet or roll form. For example, a plurality of bag-shaped chamber-pot liners may be packaged in the form of a roll, one individual liner being separable from the next by means of a tear-line. The tear-line may be formed by means of perforations.

The invention will now be further described by way of example, with reference to the accompanying drawing, in which:

Figure 1 shows a bag-shaped liner embodying the present invention for a chamber-pot;

Figure 2 shows the embodiment of Figure 1 in position within a chamber-pot;

Figure 3 is a plan view of the arrangement of Figure 2; and

Figure 4 illustrates a plurality of the liners Figure 1 packaged in roll form.

Figure 1 shows a bag-shaped liner which comprises a waterproof, translucent plastics wall 1. The plastics wall 1 may be extruded in cylindrical form and folded at sides 2, 3 so as to enable flat packaging thereof. The closed end of the bag-shaped liner may be formed by a sealing weld 4. This weld may be established by heat treatment.

Prior to sealing the closed end of the liner, a soft, padded lining 5 is adhered to the inner surface of the liner. The lining is formed from any kind of absorbent material which would be known to the skilled man in the art.

An alternative method of construction may involve lining one side of a sheet of plastics material with the absorbent layer and subsequently folding the sheet about a line running along the length thereof so that the absorbent layer on one side of the line is folded over to contact the layer on the other side of the line. The largest open edge can then be sealed together. The open and closed ends of individual bag-shaped liners 1 can

then be formed in the continuous length of liner by methods known in the art.

The absorbent layer is impregnated with a diacetyl monoxime reagent which changes colour on contact with urine (see examples given above).

Self-adhesive tabs 6 are provided for securing the bag-shaped liner 1 to a chamber-pot. Figure 2 illustrates a chamber-pot 7 in which the liner 1 has been placed.

Figure 4 illustrates a plurality of bag-shaped liners 1 packaged in the form of a roll 8. A tear-line, comprising a series of perforations 9 is associated with the open end of each of the liners 1. The closed end of the liners 1 is defined by a sealing weld 10.

A draw-cord 11 may be provided around the periphery of the open end of each liner either for enabling securing of the liner around a container and/or for enabling closing of the liner after use.

CLAIMS

1. A disposable chamber-pot liner (1) which is generally bag-shaped and comprises a non-permeable base material supporting an absorbent layer (5) on at least part of one side thereof, which absorbent layer is suitable for absorbing and retaining fluids; wherein means is provided within the absorbent layer for changing colour on contact with one or more of the fluids.

2. A disposable chamber-pot liner according to claim 1, wherein the non-permeable base material is of a translucent plastics material thereby enabling the colour change to be seen from the side of the liner not covered with the absorbent layer.

3. A disposable chamber-pot liner according to any one of claims 1 or 2, comprising means (6) for securing the chamber-pot liner to the chamber-pot.

4. A disposable chamber-pot liner according to claim 3, wherein the securing means is in the form of adhesive tabs (6) positioned around the opening of the liner.

5. A disposable chamber-pot liner according to

claim 3, wherein the securing means is in the form of a draw-cord (11) or integrally moulded handles positioned around the opening of the liner.

6. A disposable chamber-pot liner according to claim 1, wherein the means for changing colour is a material which has one colour in its anhydrous salt form and a different colour in the hydrated salt form.

7. A disposable chamber-pot liner according to claim 6, wherein the means for changing colour is any one or more of copper sulphate, cobalt chloride, or cobalt carbonate.

8. A disposable chamber-pot liner according to claim 6, wherein the means for changing colour is a reagent for detecting the present of urea.

9. A disposable chamber-pot liner according to claim 8, wherein the reagent is any one or more of a litmus indicator, phenolphthalein, bromocresol purple, bromophenol red, nitrazine yellow, bromothymol blue, brilliant yellow, neutral red, methyl red, ethyl red and chlorophenol red, or diacetyl monoxine reagent, or a pheric alum reagent.

10. A disposable chamber-pot liner according to any

one of the preceding claims, wherein the colour changing means is patterned or distributed within the absorbent layer such that when the chamber-pot is used patterned shapes, for example animal shapes or geometrical patterns, appear on the absorbent layer.

11. A plurality of disposable chamber-pot liners according to any one of the preceding claims packaged in a roll, successive liners being separable from the next by means of a tear-line.

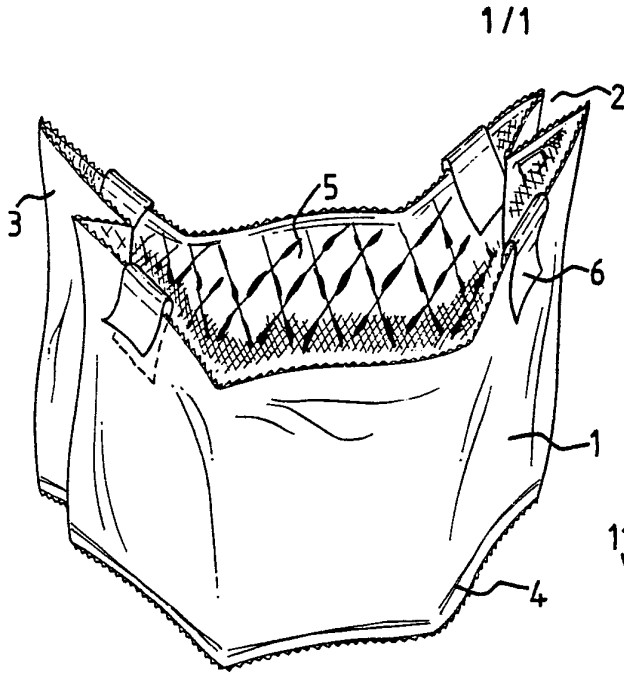


FIG. 1

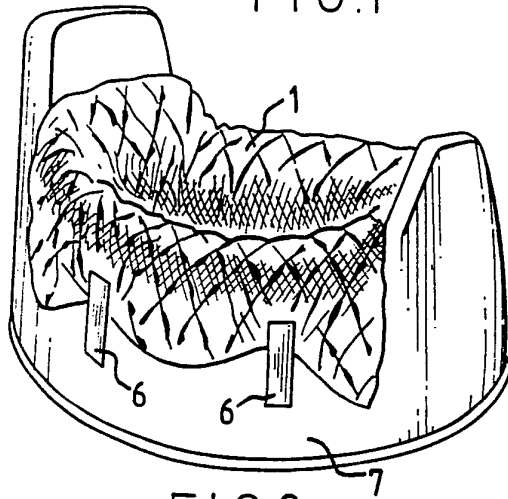


FIG. 2

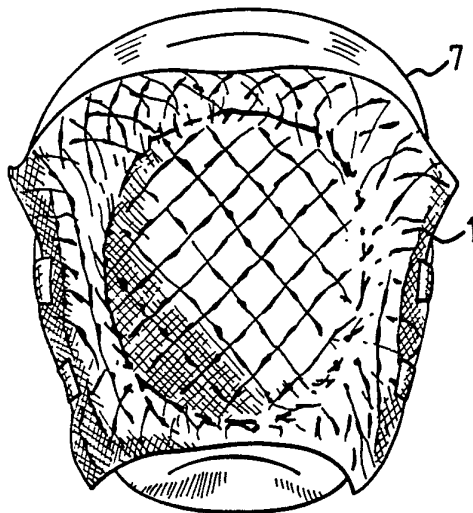


FIG. 3

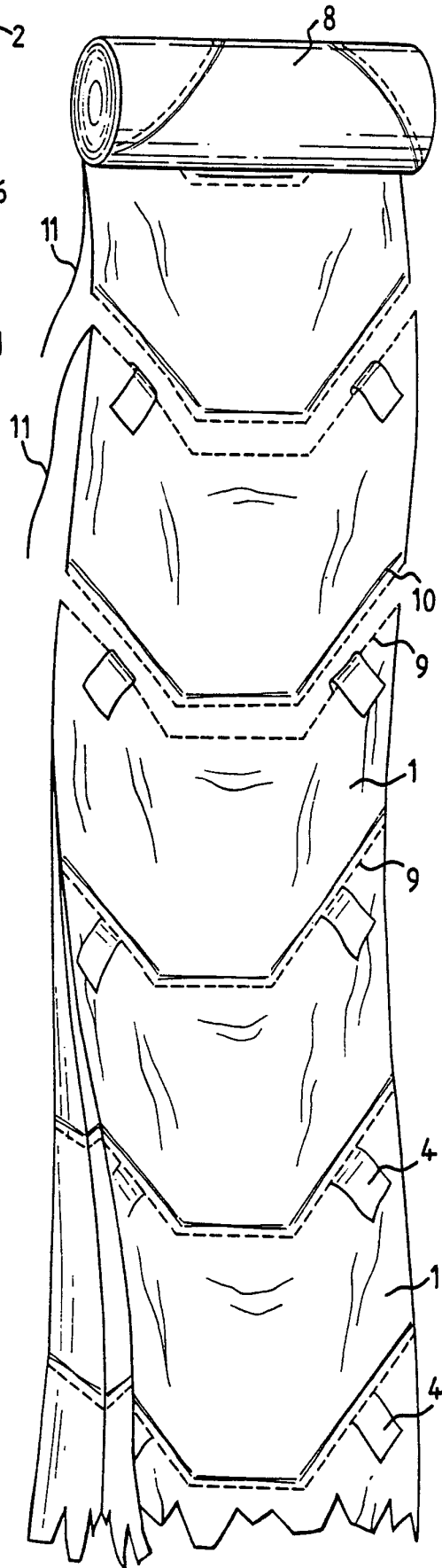
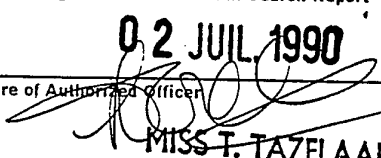


FIG. 4

INTERNATIONAL SEARCH REPORT

International Application No PCT/GB 90/00487

| | | |
|---|--|-------------------------------------|
| I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) ⁶ According to International Patent Classification (IPC) or to both National Classification and IPC IPC5: A 47 K 11/06 | | |
| II. FIELDS SEARCHED | | |
| Minimum Documentation Searched ⁷ | | |
| Classification System | Classification Symbols | |
| IPC5 | A 47 K; A 01 K | |
| Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in Fields Searched ⁸ | | |
| III. DOCUMENTS CONSIDERED TO BE RELEVANT⁹ | | |
| Category * | Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹² | Relevant to Claim No. ¹³ |
| Y A | GB, A, 2196246 (BRENTON V) 27 April 1988, see the whole document -- | 1,3-5,6-9 2,11 |
| Y | GB, A, 2218902 (GILLIAN P W) 29 November 1989, see page 6, line 11 - line 15 -- | 1 |
| Y | US, A, 3978818 (HELDENBRAND) 7 September 1976, see column 4, line 53 - line 58; column 5, line 31 - line 61; column 6, line 8 - line 19; figures 6-8 -- | 1,3,6-9 |
| * Special categories of cited documents: ¹⁰ "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 "T" 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 "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. "&" document member of the same patent family | | |
| IV. CERTIFICATION | | |
| Date of the Actual Completion of the International Search | Date of Mailing of this International Search Report | |
| 14th June 1990 | 02 JUL 1990  MISS T. TAZELAAR | |
| International Searching Authority | Signature of Authorized Officer | |
| EUROPEAN PATENT OFFICE | | |

| III. DOCUMENTS CONSIDERED TO BE RELEVANT (CONTINUED FROM THE SECOND SHEET) | | |
|--|--|----------------------|
| Category * | Citation of Document, with indication, where appropriate, of the relevant passages | Relevant to Claim No |
| A | US, A, 4507121 (LEUNG) 26 March 1985, see abstract -- | 1,6-9 |
| A | US, A, 4705513 (SHELDON ET AL) 10 November 1987, see column 2, line 19 - line 22 -- ----- | 10 |

**ANNEX TO THE INTERNATIONAL SEARCH REPORT
ON INTERNATIONAL PATENT APPLICATION NO.PCT/GB 90/00487**

SA 35624

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report.
The members are as contained in the European Patent Office EDP file on 07/05/90
The European Patent office is in no way liable for these particulars which are merely given for the purpose of information.

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|--|------------------|-------------------------|------------------|
| GB-A- 2196246 | 27/04/88 | NONE | |
| GB-A- 2218902 | 21/11/89 | WO-A- 89/11317 | 30/11/89 |
| US-A- 3978818 | 07/09/76 | NONE | |
| US-A- 4507121 | 26/03/85 | NONE | |
| US-A- 4705513 | 10/11/87 | NONE | |

For more details about this annex : see Official Journal of the European patent Office, No. 12/82