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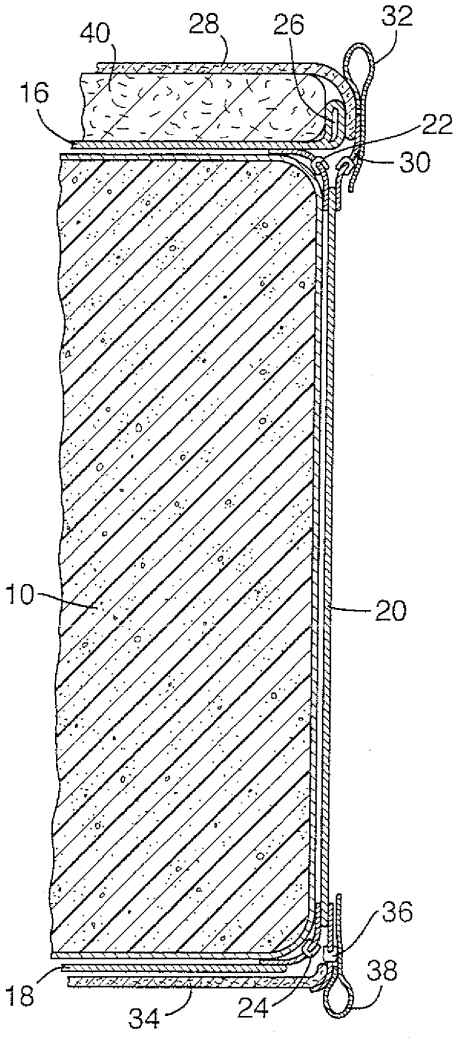
(54) **Mattresses**

(57) A mattress system comprises a mattress core component (10), a mattress cover (14) removably attachable about the core, and a mattress panel component (28) at least partially detachable from the cover. The mattress cover may be formed from several parts joined together and to the mattress panel component by sliding clasp fasteners. The parts can be washed in a domestic washing machine. Pads (40) can be inserted into a pocket formed between the cover and the panel component. A range of mattress core components, panel components, cover parts and pad components enables users to customise the mattress.

Fig.2.



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Description

Introduction

[0001] This invention relates to mattress systems including mattress cores and covers, and optionally panels and pads.

Background

[0002] Mattresses are traditionally sold fully assembled through retail outlets as complete items; that is, a mattress core and a permanent cover. The mattress core may, for example, be of a simple plastics foam, or have complex interior springing with over layers of different materials. Mattress covers may be of a multitude of materials, depending on the use to which the mattress is to be put and customers' requirements; such as feel, softness/hardness, water resistance, moisture permeability, etc.

[0003] Separate mattress pads are well known, such pads simply being laid on top of a mattress under a bottom sheet.

Prior Art

[0004] It is known to fit mattress covers about mattress cores using a sliding clasp fastener (zipper) to link free mattress cover edges; see for example JP-A-2002095555 (MARUHACHI MAWATA Co. Ltd.), GB-A-2038175 (ABRAHAM DAVID BENDELL), GB-A-1304373 (MAURICE GOLD), US-A-2004/0143903 (PATRICK NOEL DALY).

[0005] MOTHERCARE Plc. sell a Sleepright® mattress which has a removable, waterproof, zippered cover incorporating a moisture absorbent top panel. The cover is also sold separately.

Object of the Present Invention

[0006] It is an object of the present invention to provide a mattress system that enables customers (mattress users) to obtain (customise) a mattress having desired properties by selecting from a range of mattress components of differing characteristics; the components being designed to enable a user to assemble/acquire a chosen complete mattress at a point-of-sale and to enable a user to subsequently change/replace mattress components.

Statement of Invention

[0007] According to the present invention, a mattress system comprises a mattress core component and a mattress cover removably attachable about the core, characterised in that the system comprises a mattress panel component at least partially detachable from the mattress cover. One cover may therefore be substituted for another having different characteristics. The cover may also be removed for cleaning.

[0008] An additional pad may be trapped between the panel component and the cover. The panel component and cover may form a pocket in the upper part of the mattress, into which one of a range of mattress pads can be inserted; thus positively retaining the pad in place. Different pads can be used or substituted one for another, to provide different mattress characteristics.

[0009] According to some embodiments of the present invention, the mattress panel component is removably attachable to the cover. This enables a range of different mattress panels to be fitted instead of or as well as a range of pads and mattress covers. By this means, a range of mattress core components, covers and panel components of different characteristics can be provided and from which a user can select the components appropriate to desired mattress properties. The properties of the mattress can be subsequently altered by simple replacement of the appropriate system component.

[0010] According to some embodiments of the present invention, the panel component is attachable to the cover about a peripheral edge region of the mattress core.

[0011] According to some embodiments of the present invention, the cover comprises a plurality of parts removably attachable one to another. The cover may be in two, three four or more parts. The panel components may likewise be formed from a plurality of parts. This enables individual cover parts to be washed in a domestic washing machine, even in the case of large (e.g. king size) mattress covers.

[0012] According to some embodiments of the present invention, at least some of the cover parts are attachable to one another in a peripheral edge region of the mattress core.

[0013] An attachment region between the panel component and cover may be superimposed upon an attachment region between cover parts.

[0014] According to some embodiments of the present invention, the cover comprises a plurality of parts attachable to one another at:-

- an upper peripheral edge region of the mattress core; and/or
- a lower peripheral edge region of the mattress core; and/or
- a mattress core side region intermediate the upper and lower mattress core peripheral edge regions.

[0015] According to some embodiments of the present invention, sliding clasp or hook-and-loop fasteners, press studs, buttons and button holes or any other suitable fasteners are provided to removeably attach panel components and/or coverparts.

[0016] According to some embodiments of the present invention, upper and lower panel components are respectively attachable to upper and lower cover parts.

Introduction to the Drawings

[0017] The above and further features of the present invention are illustrated, by way of example, in the Drawings, wherein:-

Fig. 1 is a perspective view of a mattress system embodying the present invention, with a corner cut away to show mattress components;
Fig. 2 is a part sectional elevation of the mattress of Fig. 1;
Fig. 3 is a detail illustrating a panel component-cover sliding fastening superimposed upon a cover part-part sliding fastening;
Fig. 4 is a detail illustrating an alternate panel component - cover / cover part - cover part component hook and loop fastening;
Fig. 5 is a similar view top that of Fig. 1, but for another embodiment of the present invention;
Fig. 6 is a part sectional elevation of the mattress of Fig. 5 and,
Fig. 7 is a similar view to that of Fig. 6, but for a further embodiment of the present invention.

Detailed Description

[0018] As shown by Figs 1 to 4, one embodiment of a mattress system comprises a mattress core component 10, such as an HR or other foam e.g. PU, PE and or latex with or without a fabricated layer or combination of layers of e.g. PU visco-elastic foams. The core component may be with or without a textile wrapping or inner cover such as poly-cotton mix tricot, or 100% cotton 'Jersey' or 100% polyester stockinette 12. A mattress cover 14 comprises three parts:

1) a rectangular upper face part 16 of any conventional mattress fabric, e.g. double Jersey, non-quilted or quilted with textile fibres such as polyester or wool wadding material and / or foam e.g. PU, PE and / or Latex, and a backing material such as 100% cotton tricot;
2) a rectangular lower face part 18 e.g. of the same or similar material to the upper face part and
3) a side part 20 e.g. again of the same or similar material to the upper face part.

[0019] The three cover parts 16, 18, 20 are attached to one another by two open-ended, sliding clasp fasteners 22, 24. Each face cover part has a peripheral roll edge 26, to which one strip of the sliding fastener is fixed. When the cover parts 16-20 and 18-20 are attached to one another about the core component 10, the joined fasteners 22, 24 are located and partially hidden by the roll edges 26.

[0020] An upper mattress panel component 28, of a complementary rectangular shape to cover upper face part 16, is attached to the cover 14 by an open ended sliding clasp fastener 30 located about and between the periphery of the upper panel component 28 and the upper edge region of the cover side part 20, outwardly of the fastener 22. The upper panel component 28 has a peripheral roll edge 32, to which one strip of the sliding fastener 30 is fixed; in a similar manner to cover roll edge 26 and sliding fastener 22. The upper panel-cover side sliding clasp fastener 30 overlies and hides upper cover face-cover side sliding fastener 22 (see Fig. 3). When the upper panel component 28 is removed, the roll edge 16 overlies and partially covers the fastener 22.

[0021] A range of panel components 28 are provided, each having a different characteristic. For example, a panel component may be a fabric envelope with a quilted upper surface and different types of fillings, e.g. for summer, winter, hypo-allergic, etc. The fabric may be any suitable textile material or materials, such as woven, non-woven or knitted fabrics of polyester, cotton, silk, viscose or mixed fibres; CLIMACONTROL™ or TENCEL™ top fabrics. Suitable fillings are textile fibres (e.g. polyester, wool, cotton, silk), and / or foam e.g. PU, PE and / or latex. Alternatively the panel may be non-quilted. Yet alternatively or in addition, a panel component may be of a breathable or non-breathable, fluid repelling and / or resistant material e.g. Terry cloth: 80% cotton, 20% polyester, PU laminated, for use by babies, elderly or incontinent people e.g. bed mattresses for nursing homes, residential care homes, children's mattresses.

[0022] A lower mattress panel component 34, of a complementary rectangular shape to cover lower face part 18, is peripherally attached by an open ended sliding clasp fastener 36 to envelop the cover lower face part 18. The lower panel component 34 has a peripheral roll edge 38, to which one strip of the sliding fastener 36 is fixed. Lower panel-cover side sliding clasp fastener 36 overlies and hides lower cover face-cover side sliding fastener 24 (see Fig. 1 expanded detail).

[0023] Conveniently, the lower panel component 34 may have a different characteristic to that of upper panel component 28; for example summer and winter fillings.

[0024] A rectangular mattress pad component 40, of similar but slightly smaller shape to that of upper panel component 28, is loosely fitted (trapped) between the upper panel component 28 and the upper cover face part 16. A range of pad components may be provided, each having a different characteristic; for example toppers of varying thickness (e.g. 3 cm to 5cm) and/or firmness, such as an HR foam topper or a visco foam topper; a gel fibre filled quilted insert - fibre bed style; an electrical heating blanket; an incontinence barrier; insect repellent; specialist inserts e.g. containing magnets. The roll edge 26 of upper cover face part 16 is of sufficient depth to accommodate pad components.

[0025] The lower panel component 34 and lower cover face part 18 could be similarly adapted to accommodate a pad component.

[0026] The size and materials of the panel components and cover parts can be selected to that they can be

washed in a domestic washing machine e.g. of 7 kg load capacity.

[0027] A hook and loop fastener 42 could be used instead of some or all sliding clasp fasteners; as illustrated by Fig. 4. Alternative fastenings include pop studs or buttons and button holes.

[0028] The embodiment illustrated by Figs. 5 and 6 is generally the same as that of Figs. 1 to 3, with the exception that the side cover part 20 is in two halves 44 and 46 joined by a sliding clasp fastener 48 located midway down the side of the mattress side, intermediate upper and lower mattress edge regions. Thus, cover 14 is formed of more, smaller parts; further enabling it to be readily washed in a domestic washing machine.

[0029] This embodiment has five separate sliding clasp fasteners, as opposed to the four fasteners of the Figures 1 to 3 embodiment.

[0030] Mattress cores 10 may have two halves 50 and 52 of differing characteristics, for example, the upper half 50 being of a different foam density to that of the lower half 52.

[0031] The embodiment illustrated by Fig. 7 is generally the same as that of Figs. 1 to 3, with the exception that the cover 14 is in two parts 54 and 56 joined by a sliding clasp fastener 48 located midway down the side of the mattress and intermediate upper and lower mattress edge regions. Cover part 54 is equivalent to upper face part 16 and upper side half 44 and cover part 56 to lower face part 18 and lower side half 46 of Figures 5 and 6. There are only three sliding clasp fasteners.

[0032] In each of these embodiments the core 10 is completely enveloped within the removable cover 14 in normal use. The pads 40 and panel components 28, 34 are thereby firmly secured in place and the core 10 is fully enclosed and protected.

[0033] In the simplest embodiment of the present invention, the upper mattress panel component is not removable from the mattress cover, but is permanently attached on one, two or three sides to the cover upper face; so as to form a pocket in the mattress upper face into which alternative mattress pad components can be trapped. Such a mattress is still customisable to an extent and has the advantage of positively locating pads on a mattress; as opposed to the conventional lose-laid mattress pad. A partially-extending sliding clasp fastener provides an openable pocket on the upper face of the mattress into which a pad can be inserted and retained. This would provide a customer with real, albeit more limited, facility for customisation.

[0034] A fully-extending sliding clasp fastener would enable alternative upper mattress components to be attached to the mattress as well as / instead of pads.

[0035] Although generally rectangular mattress core components, covers, pads and panel components have been described above, the invention is clearly applicable to mattresses of other shapes, such as circular, oval, octagonal, etc. The shapes of the core components, covers, pads and panel components can be readily adapted accordingly.

Claims

1. A mattress system comprising a mattress core component (10) and a mattress cover (14) removably attachable about the core, **characterised in that** the system comprises a mattress panel component (28, 34) at least partially detachable from the mattress cover.

2. A mattress system as claimed in claim 1, wherein the cover (14) comprises a plurality of parts (16, 18, 20, 44, 46, 54, 56) removably attachable one to another.

3. A mattress system as claimed in claim 2, wherein the cover is in two (54, 56), three (16, 18, 20), four (16, 18, 44, 46) or more parts.

4. A mattress system as claimed in claim 2 or 3, wherein at least some of the cover parts (16, 18, 20, 44, 46) are attachable to one another in a peripheral edge region of the mattress core.

5. A mattress system as claimed in any preceding claim, wherein the panel component (28, 34) is removably attachable to the mattress cover (14).

6. A mattress system as claimed in any preceding claim, wherein the panel component (28, 34) is attachable to the cover (14) about a peripheral edge region of the mattress core.

7. A mattress system as claimed in any preceding claim, wherein an attachment region between the panel component (28, 34) and mattress cover (14) is superimposed upon an attachment region between cover parts (16, 18, 20, 44, 46).

8. A mattress system as claimed in any preceding claim, in which the panel component (28, 34) comprises a plurality of parts removably attachable to one another.

9. A mattress system as claimed in any preceding claim, wherein upper and lower panel components (28, 34) are respectively attachable to upper and lower mattress cover parts (16, 18).

10. A mattress system as claimed in any preceding claim, wherein a mattress pad (40) is trapped between the panel component (28) and the cover (14).

11. A mattress system as claimed in any preceding claim, wherein the mattress cover (14) comprises a plurality of parts (16, 18, 20, 44, 46, 54, 56) attach-

able to one another at:-

an upper peripheral edge region of the mattress core; and/or
a lower peripheral edge region of the mattress core; and/or
a mattress core side region intermediate the upper and lower mattress core peripheral edge regions.

12. A mattress system as claimed in any preceding claim, wherein sliding clasp or hook-and-loop fasteners (22, 24, 30, 36, 48), press studs, buttons and button holes or other suitable fasteners are provided to attach panel components (28, 34) and/or mattress cover parts (16, 18, 20, 44, 46, 54, 56).

13. A mattress core component (10) for a mattress system as claimed in any preceding claim.

14. A mattress cover (14) / cover part (16, 18, 20, 44, 46, 54, 56) for a mattress system as claimed in any of claims 1 to 12.

15. A mattress panel component (28, 34) for a mattress system as claimed in any of claims 1 to 12.

16. A mattress pad component (40) for a mattress system as claimed in claim 10.

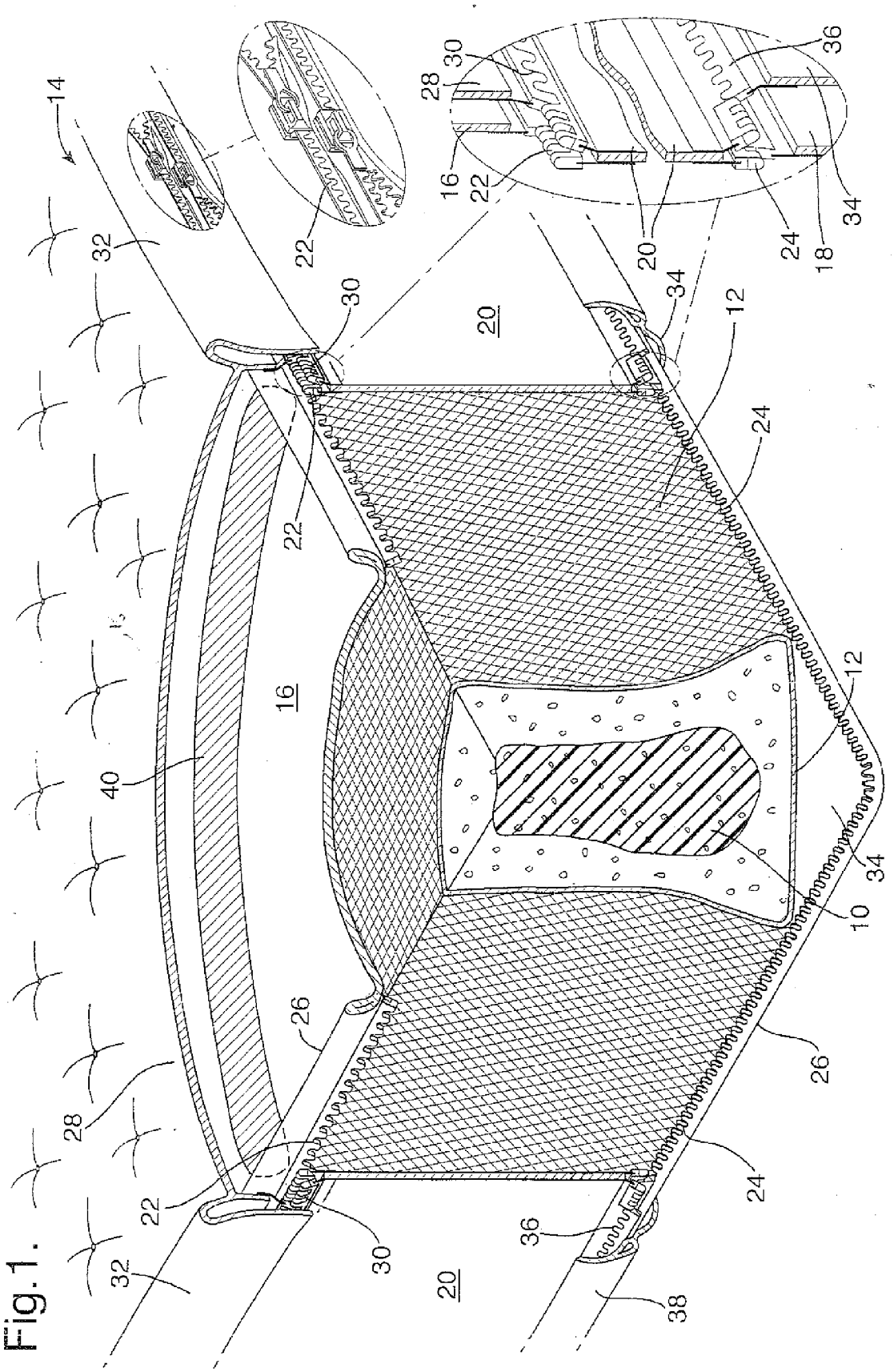


Fig.1.

Fig.2.

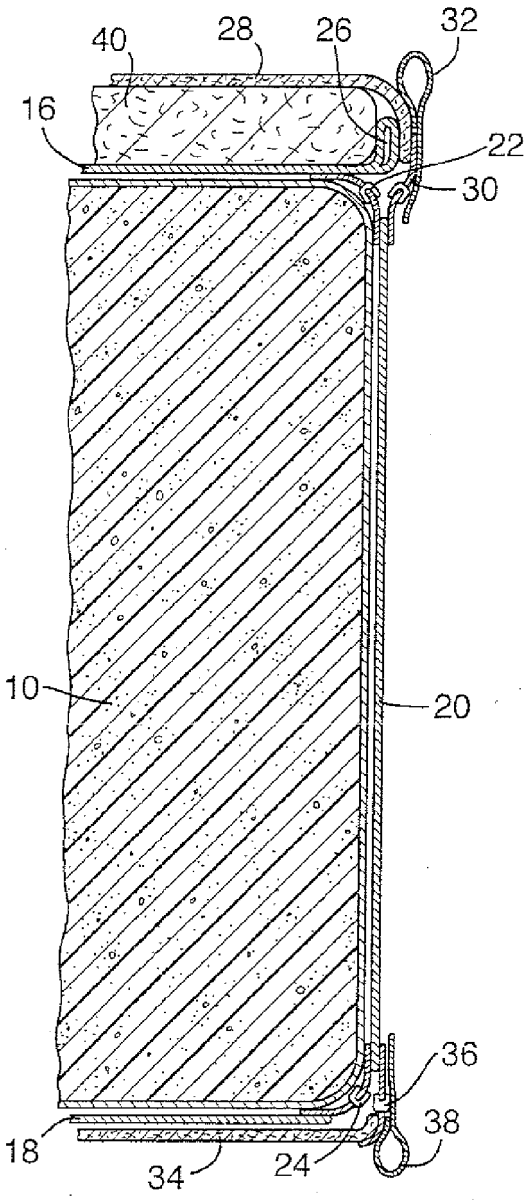


Fig.4.

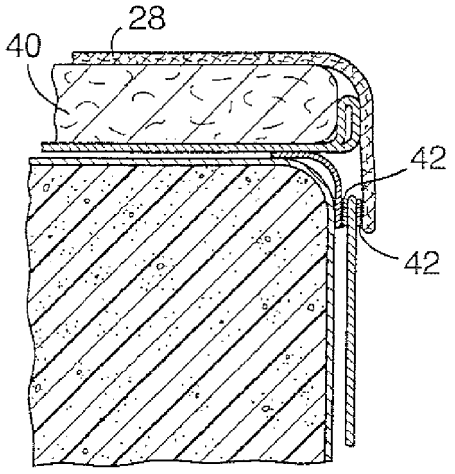
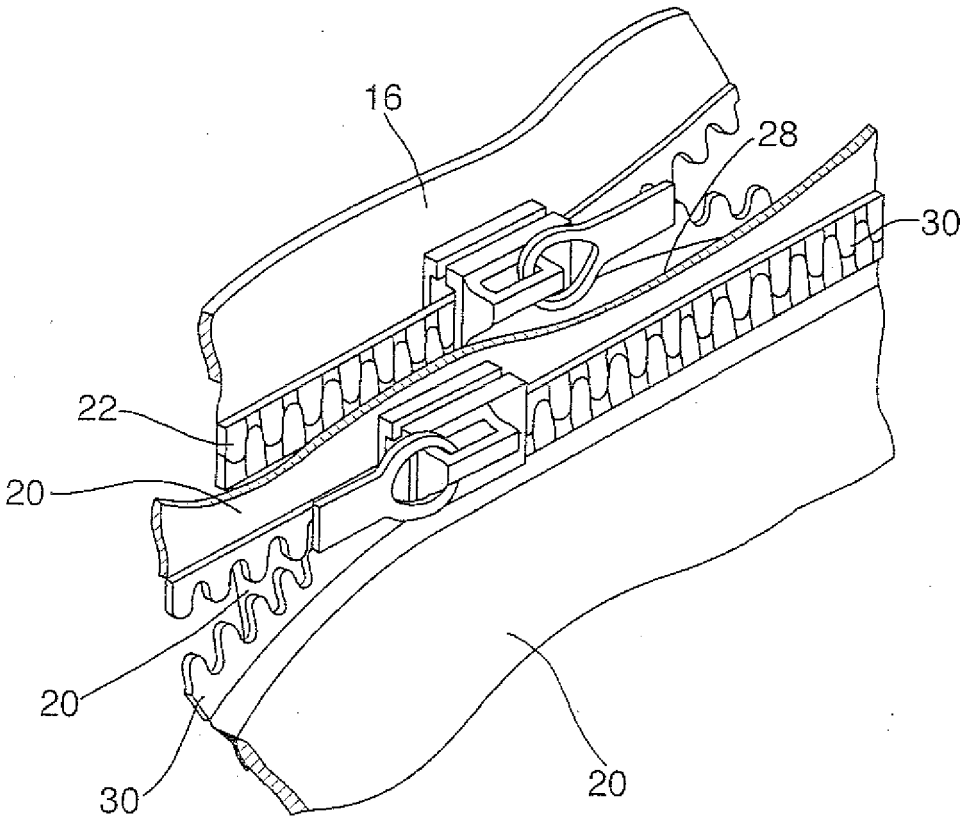


Fig.3.



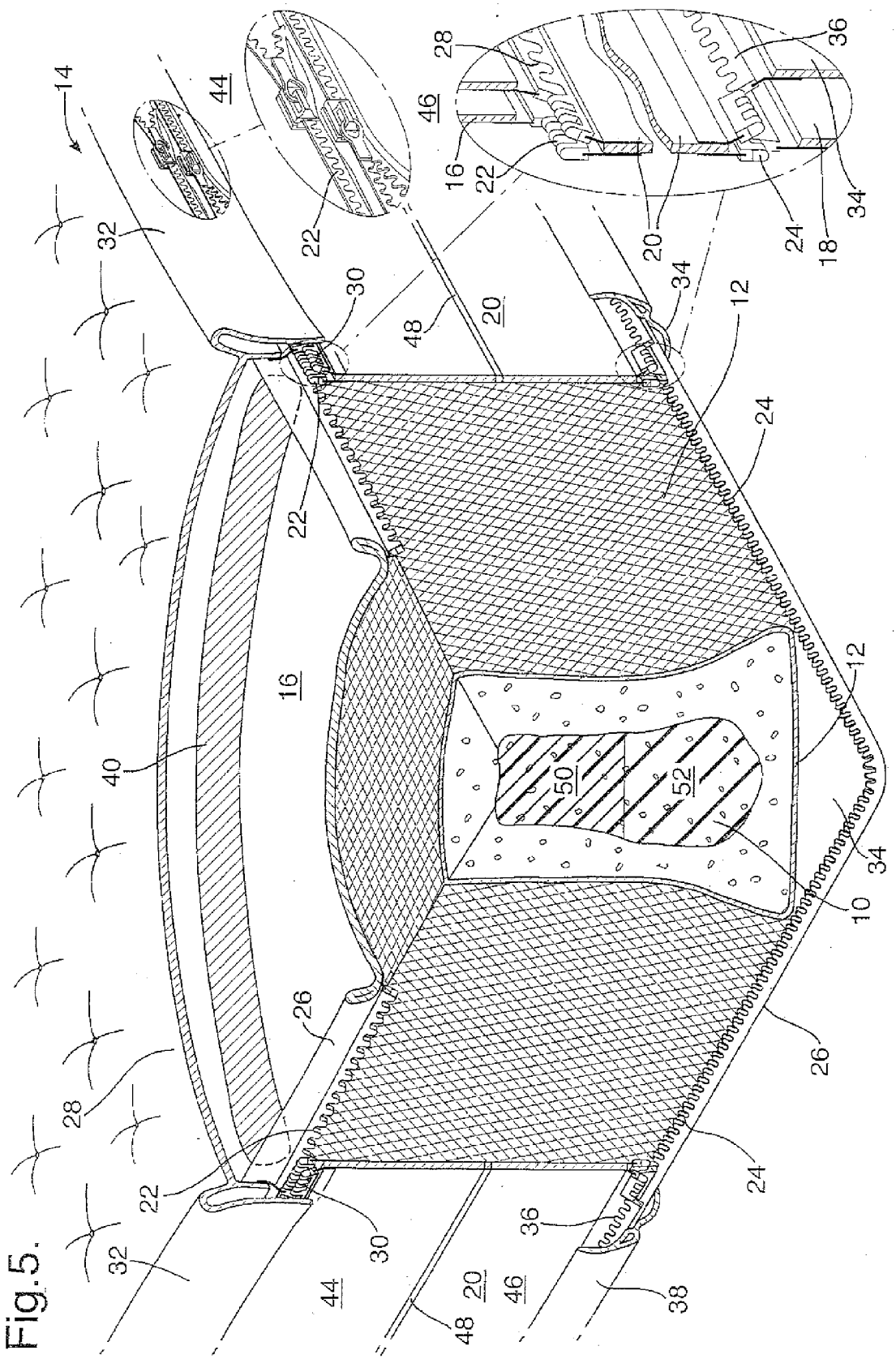


Fig.5.

Fig.6.

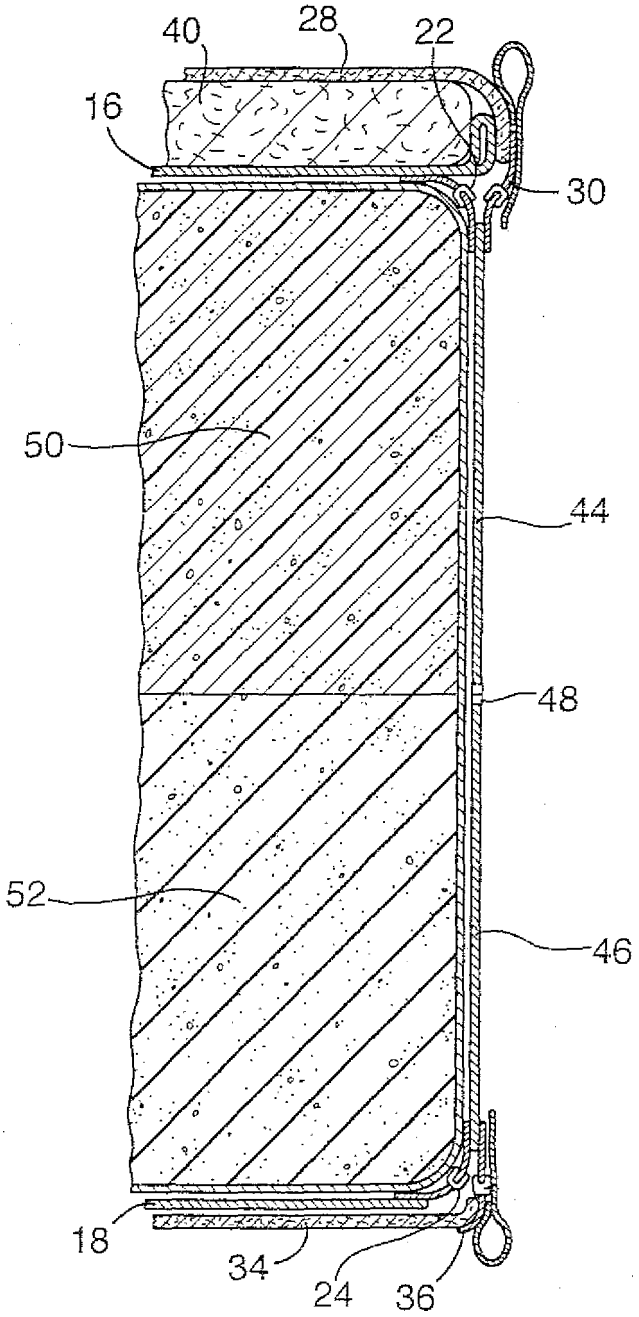
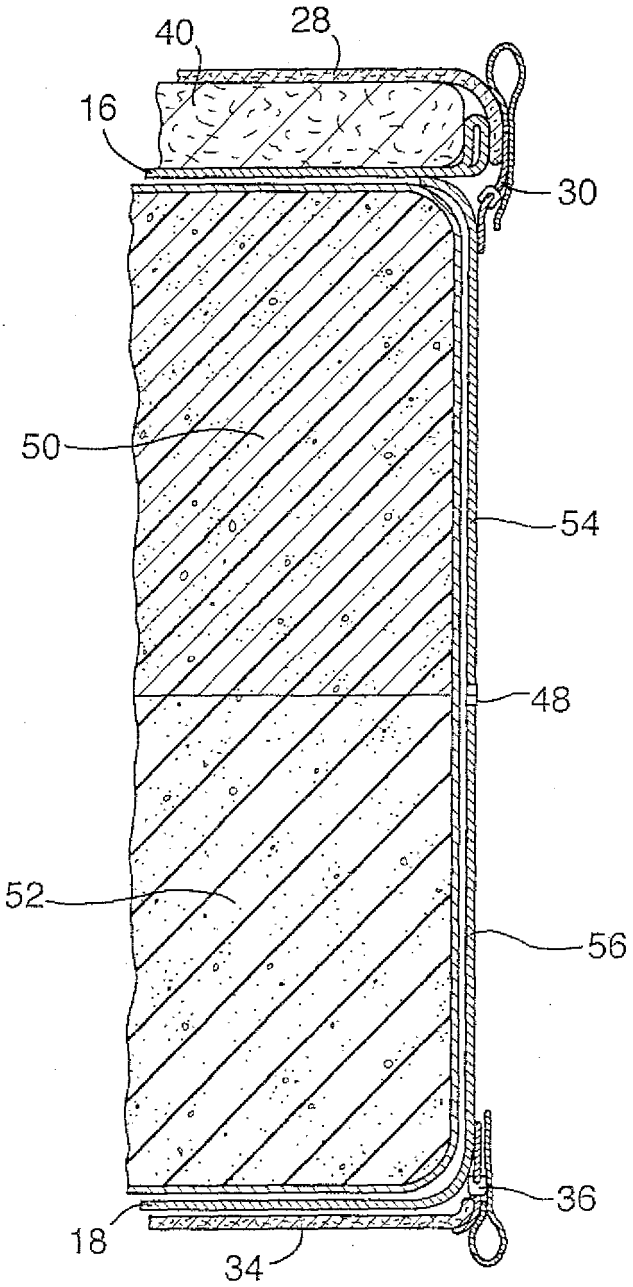


Fig.7.



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EUROPEAN SEARCH REPORT

Application Number
EP 07 10 0225

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	24 April 2007	Kus, Slawomir

CATEGORY OF CITED DOCUMENTS

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

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