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(54) **ANTI-DECUBITUS MATTRESS OR MAT**

ANTIDEKUBITUSMATRATZE ODER -MATTE

MATELAS OU TAPIS ANTI-DÉCUBITUS

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Description

[0001] The present invention relates to an anti-decubitus mattress or mat and a method for its production.

[0002] It is known that in many cases patients admitted to a health facility are forced, for various reasons, to stay for a long period of time on supports not suitable for remaining for a prolonged time (supports positioned in waiting rooms, examination rooms, operating theatres, etc.) and this can create conditions for the formation of bedsores, especially in the case of patients already at risk for developing bedsores and in the case of patients forced to remain in the same position for a long time (for example in the case of unconsciousness or anaesthesia).

[0003] Anti-decubitus mattresses heal or prevent bedsores or lesions.

[0004] Prolonged contact with the surface of a support can in fact create lesions caused by excessive body pressure (especially in areas where the bones protrude more). If these sores are not prevented or treated, there is a risk of causing injury to the internal tissues (bone and muscle), leading to necrosis and therefore permanent damage to the same.

[0005] Anti-decubitus mattresses have been developed specifically for ensuring defense of the skin but also for greater hygiene.

[0006] Document US 2014/090178 describes a mattress composed of various layers having a different softness so that the desired softness can be chosen by rotating the mattress. In order to keep the mattress in place on the support (bed), rubber inserts are provided to prevent it from sliding off the support during articulation movements of the bed. This type of mattress obviously cannot be used on tilted supports, as there are no suitable means for keeping it in position.

[0007] Document EP 2789270 describes a mattress which can be glued or attached by means of adhesive tape to the support.

[0008] Document EP 2095745 describes a modular supporting element for producing mattresses, pillows and the like comprising an elastically deformable body in at least one deformation direction, which comprises a first portion having a first modulus of elasticity and a second portion (305) having a second modulus of elasticity different from said first modulus of elasticity.

[0009] Document EP 2 802 305 describes a mattress made of viscoelastic foam (polyurethane foam) which can be fixed to the medical table by means of straps so as to be able to support the patient even when the table is in a tilted position.

[0010] The straps however are bulky, they make the mattress expensive to construct, they require that the rigid support be of such a shape as to allow it to be hooked and are not suitable for fixing a small mattress, which only has to support a part of the patient's body, to a rigid support.

[0011] The general objective of the present invention is

to produce an anti-decubitus mattress or mat that is disposable, and therefore does not require sanitization after use, economical, hypoallergenic, thanks to the absence of latex and phthalates, suitable for supporting any part of the body and for use in any context, i.e. that can be positioned on stretchers, medical examination tables, operating tables, robotic operating tables.

[0012] A further objective of the present invention is to provide a mattress or mat which is fast, easy and intuitive to use.

[0013] Another objective of the present invention is a method for the easy and economical production of said mattress or mat.

[0014] The above objectives are achieved by an anti-decubitus mattress or mat and a method for its production according to the enclosed independent claims and sub-claims.

[0015] The anti-decubitus mattress or mat according to the present invention, for positioning at least part of a patient's body on a rigid support, is composed of at least one layer of shape-memory viscoelastic polyurethane foam, also known as memory foam or viscoelastic, elastic shape-memory sponge, and has an upper surface suitable for coming into contact with at least part of the patient's body and a lower surface suitable for being connected to the rigid support. Said mattress or mat comprises at least one strip or insert in gel, or in a compact polymer product, with adhesive properties, such as an adhesive polyurethane gel, which guarantees the adhesion of at least part of said lower surface to said rigid support.

[0016] The method, object of the present invention, provides that said at least one strip, insert or layer in a compact polyurethane, adhesive polymer product or in gel form, be injected or glued directly on said at least one layer of shape-memory viscoelastic polyurethane, also called memory foam, or viscoelastic, elastic, shape-memory sponge, or on at least one non-adhesive polyurethane layer in gel form, as better described hereunder, so as to create a whole with said overlying layer.

[0017] The structural and functional characteristics of the invention and its advantages will appear more understandable from the following description, referring to the enclosed figures, which illustrate a possible non-limiting embodiment of the invention itself.

[0018] In the drawings:

- figure 1 is a schematic side view of a mattress or mat according to a first embodiment of the present invention;
- figure 2 is a schematic view from below of the mattress of figure 1;
- figure 3 is a schematic side view of a mattress according to a second embodiment of the present invention wherein a single protective film of the adhesive inserts is provided;
- figure 4 is a schematic side view of a mattress

according to the second embodiment of the present invention wherein a protective film is provided for each of the adhesive inserts;

- figure 5 is a schematic view from below of the mattress of figures 3 and 4;
- figure 6 is a schematic side view of a mattress according to a third embodiment of the present invention wherein a single protective film of the adhesive inserts is provided;
- figure 7 is a schematic side view of a mattress according to the third embodiment of the present invention wherein a protective film is provided for each of the adhesive inserts;
- figure 8 is a schematic view from below of the mattress of figures 6 and 7;
- figure 9 is a schematic side view of a mattress according to a fourth embodiment of the present invention wherein a single protective film of the adhesive inserts is provided;
- figure 10 is a schematic side view of a mattress according to the fourth embodiment of the present invention wherein a protective film is provided for each of the adhesive inserts;
- figure 11 is a schematic view from below of the mattress of figures 9 and 10;
- figure 12 is a schematic side view of a mattress according to a fifth embodiment of the present invention wherein a single protective film of the adhesive inserts is provided;
- figure 13 is a schematic side view of a mattress according to the fifth embodiment of the present invention wherein a protective film is provided for each of the adhesive inserts;
- figure 14 is a schematic view from below of the mattress of figures 12 and 13;
- figure 15 is a schematic side view of a further embodiment of the mattress according to the present invention;
- figure 16 is a schematic view from below of the mattress of figure 15.

[0019] The anti-decubitus mattress or mat, object of the present invention, indicated in the figures with 1, is composed of at least one layer or sponge in viscoelastic or elastic shape-memory polyurethane foam 101 and has an upper surface A suitable for coming into contact with at least part of the patient's body (not shown) and a lower surface B suitable for being connected with a rigid support (not shown), said mattress or mat 1 comprises at least one strip or insert in adhesive polymer gel, or a compact polymer product, 102, 102' which ensures the adhesion of at least part of said lower surface B to said rigid support.

[0020] Said at least one strip or insert in gel form not only ensures the non-occurrence of the bottom-out effect, but intrinsically possesses adhesive properties and therefore attaches itself very stably (but removably) to the surface of the support without the need for straps or other

mechanical fixing elements for remaining in position.

[0021] Said at least one strip or insert in polymer gel preferably has a compact structure that is non-spongy, non-expanded, free of cells.

5 **[0022]** Said at least one strip or insert in polymer gel is adhesive and allows the adhesion or stable but removable connection of at least part of said lower surface B to said rigid support.

10 **[0023]** According to a preferred embodiment, said gel, or compact adhesive polymer product, is a polyurethane gel.

[0024] It can, for example, be a soft elastomeric polyurethane gel known with the trade-name KAIROS HDR G 2015 or 207 L.

15 **[0025]** Said one or more strips or inserts 102, 102' have a thickness ranging from 0.01 cm to 10 cm.

[0026] Said at least one layer or sponge of viscoelastic or elastic shape-memory polyurethane foam 101 has a thickness ranging from 5 mm to 40 cm.

20 **[0027]** According to an embodiment, the mattress 1 comprises a plurality of adhesive polymer gel strips 102 positioned parallel to each other and distributed over at least part of the lower surface B.

25 **[0028]** Or said strips 102 can be positioned intersected with each other and distributed over at least part of the lower surface B.

30 **[0029]** In the embodiment that provides for the inserts, said inserts have a geometric shape 102' and are distributed over at least part of the lower surface B of the mattress or mat 1.

[0030] In a preferred embodiment, said at least one strip or insert in adhesive polymer gel 102, 102' is distributed uniformly on at least part of the lower surface B of the mattress or mat 1.

35 **[0031]** It is obviously possible to provide an embodiment of a mattress or mat 1 which comprises one or more inserts 102' in combination with said one or more strips 102.

40 **[0032]** Said strips can obviously be understood as being inserts with an elongated shape, for example inserts with a rectangular base, whereas inserts refer to gel elements having various geometrical shapes, for example, inserts with a round, oval, square, rectangular or similar base or inserts with an irregular base. The combination of these elements guarantees the adhesion of the mattress to the support 8 (also in the absence of a single adhesive layer of gel) and at the same time avoids the bottom-out phenomenon.

45 **[0033]** Thanks to the layer or sponge in viscoelastic or elastic shape-memory polyurethane foam 101, which is available in different thicknesses and sizes, suitable for operating and robotic tables, and for the practical adhesion system to surfaces, patients can be positioned in all safety in any position and inclination. All this is possible thanks to the presence, on the lower side of the mattress 1, of said inserts/strips 102, 102' having various shapes and positions, in a variable number and which are arranged both at regular intervals and randomly, produced

in adhesive polyurethane gel. Once its use is complete, the mattress or mat 1 can be detached from the surface of the rigid support (for example an operating table) by applying only a very light force, and subsequently correctly disposed of.

[0034] The thickness of these inserts/strips 102, 102' is preferably minimal, for example about 1-2 mm, and in any case such as not to create discomfort or pain for the patient.

[0035] In the embodiment illustrated in figures 1 and 2, said at least one strip or insert in adhesive polyurethane gel 102, or in a compact polymer product which is also adhesive, covers the whole lower surface B of the mattress or mat 1 to form a single continuous adhesive layer 102". Said layer 102" in polymeric gel which covers the whole lower surface B of the mattress or mat 1 is adhesive and allows at least the stable adhesion (but removable by applying a force on said mattress 1) of at least part of said lower surface B to said rigid support. Said gel layer 102", in fact, not only ensures the non-occurrence of the bottom-out effect, but also intrinsically possesses adhesive properties and therefore adheres stably to the surface of the support without the need for straps or other mechanical fastening elements for remaining in position.

[0036] Said single continuous layer 102" has a thickness ranging from 5 mm to 40 cm.

[0037] The layer or sponge in viscoelastic or elastic shape-memory polyurethane foam 101 allows both the release of the contact pressures and also the correct skin aeration, whereas the gel layer 102", i.e. the compact layer, allows the mattress 1 to stably adhere to the underlying supporting structure, stabilizes it and also avoids the bottom-out effect, as it (102") is also deformable even if more load-bearing than the upper layer 101.

[0038] The same effects, but with a reduction in the use of gel material and with a greater manufacturing economy, are also obtained in mattresses 1 with strips 102 and inserts 102', the inserts 102' or strips 102 in gel in said mattresses 1, allow the mattress 1 to be used during surgical operations and in tilted positions.

[0039] Given the known characteristics of the memory foam combined with the great stability (adhesion) of the mattress or mat 1 object of the present invention, patients can be positioned in all positions and inclinations that can be reached from any bed or operating table or generic support, keeping the patients appropriately anchored while the pressure and friction forces due to the various positions are attenuated, also ensuring the correct transpiration of the skin in contact with the upper surface A of said mattress or mat 1.

[0040] Both the underlying layer 102" and the inserts 102' or strips 102 in gel, in fact, not only ensure the non-occurrence of the bottom-out effect, but also intrinsically possess adhesive properties and therefore adhere very stably to the surface of the table without requiring straps or other mechanical fasteners for remaining in position.

[0041] According to a further embodiment, said at least one layer or sponge in viscoelastic or elastic polyur-

ethane shape-memory foam 101 is provided in combination with at least one layer in non-adhesive polyurethane gel 103.

[0042] Said at least one compact layer, in non-adhesive polyurethane gel 103, has a thickness ranging from 1 mm to 10 mm.

[0043] Said at least one layer in non-adhesive polyurethane gel 103 can be inserted between at least two layers or sponges of viscoelastic or elastic shape-memory polyurethane foam 101.

[0044] Alternatively or in combination, said at least one layer in non-adhesive polyurethane gel 103 is provided on the side of the mattress 1 facing the rigid support and said at least one strip or insert in adhesive polyurethane gel 102, 102', 102", suitable for at least partially adhering said lower surface B to said rigid support, is provided on said at least one layer in non-adhesive polyurethane gel 103.

[0045] According to the present invention, said at least one strip or insert in adhesive polyurethane gel 102, 102', which guarantees the at least partial adhesion of said lower surface B, i.e. of at least part of said lower surface B, to said rigid support, has a compactness, a thickness, an elasticity and a distribution on said lower surface sufficient for avoiding the bottom-out phenomenon, i.e. that at least part of the patient's body sinks down to the rigid support.

[0046] The distribution and quantity of said inserts and strips 102, 102' provided on said lower surface B are in fact such as to ensure that the mattress is comfortable for the patient and that at the same time it can be securely positioned on the support.

[0047] Said at least one non-adhesive polyurethane gel layer 103, when provided in the mattress 1, also has a compactness, a thickness, an elasticity and a distribution on said lower surface sufficient for avoiding the bottom-out phenomenon, i.e. that at least part of the patient's body sinks down to the rigid support.

[0048] Furthermore, said at least one strip or insert 102, 102' or said continuous layer 102" in adhesive polyurethane gel which guarantees at least partial adhesion of said lower surface B to said rigid support, obviously has at least one protective film 104 on the side facing the rigid support, that can be removed before use.

[0049] Another polymer can obviously be used, alternatively or in combination with polyurethane, to form said layer 103, strips or inserts or adhesive layer 102, 102', 102" in gel, with a compact structure.

[0050] The present invention also relates to a method for producing an anti-decubitus mattress or mat 1 as described above wherein said at least one strip or insert or layer in adhesive polymeric gel 102, 102', 102", is injected or glued directly onto said at least one layer or sponge in viscoelastic or elastic shape-memory polyurethane foam 101 or on said at least one layer of non-adhesive polyurethane gel 103 so as to create a whole with said overlying layer.

[0051] The embodiments of the mattress or mat 1

described above are disposable and should be preferably used for a short period, i.e. for supporting the patient to be operated and transported, for example: they consequently do not require any management and sanitization, but must simply be disposed of once used.

[0052] These mattresses are easy to use and install thanks to the layer or inserts in gel: a high stability is guaranteed both on horizontal and tilted supports.

[0053] The mattress 1 object of the present invention can be produced in various shapes and sizes to be able to adapt to and support every part of the patient's body or the whole of the patient's body.

[0054] The enclosed figures schematically show different, non-limiting embodiments of the invention.

[0055] Figure 1 schematically illustrates a mattress or mat 1 according to an embodiment of the present invention which comprises a layer or sponge in viscoelastic or elastic shape-memory polyurethane foam 101 and a compact layer, i.e. not expanded, not with a spongy structure, in adhesive polyurethane gel 102" suitable for adhering to or connecting with (stably but removably, i.e. with the possibility of detaching the mattress from the support 1 once its function is considered complete) the lower surface B of the mattress 1 to the rigid support.

[0056] The adhesive side of the gel layer/insert is protected by a film 104 which is removed before use (figure 2) in order to allow the mattress 1 to adhere to the support.

[0057] This embodiment, which is highly performing from an anti-decubitus point of view, is therefore composed of a single double-layer sheet: the upper layer, in contact with the patient, is made of memory foam polyurethane foam whereas the underlying layer is produced by extrusion of polyurethane gel, which is reacted and injected, or glued, directly on the memory foam surface so as to be one with the overlying layer.

[0058] Each layer can be produced in various shapes and sizes (length and width of the two layers are variable), with a thickness of each layer ranging for example from a minimum of 5 mm to a maximum of 40 cm, always guaranteeing a result that is soft to the touch and deformable.

[0059] The particular processing makes this product smooth and pleasant to the touch on the upper side, towards the patient, while guaranteeing a high adhesive power to the lower layer, allowing a safe and stable fixing on any surface.

[0060] At the end of its use, the mattress or mat 1 is detached from the surface of the rigid support by applying only a very light force, and is correctly disposed of.

[0061] Figures 3 to 15 show further embodiments wherein the mattress or mat 1 can further comprise at least one non-adhesive polyurethane gel layer 103 and wherein the mattress 1 does not have the lower surface B consisting of a whole layer of adhesive polyurethane gel 102" but the adhesion of the mattress 1 to the rigid support is guaranteed by one or more inserts or strips 102, 102' in adhesive polyurethane gel.

[0062] In particular, figures 3-5 schematically illustrate a mattress 1 comprising a first layer or sponge in viscoelastic or elastic shape-memory polyurethane foam 101, a second layer in non-adhesive polyurethane gel 103 positioned below said first layer 101 and strips of adhesive polyurethane gel 102 which guarantee the adhesion of the mattress 1 to the rigid support, not shown, said layers/strips in gel preferably having a compact, non-expanded, non-foamy structure.

[0063] The adhesive side is protected during non-use by a film 104 which covers all the strips (figure 3) or by various separate films 104 (figure 4).

[0064] Figures 6-8 schematically illustrate a mattress 1 comprising a layer or sponge in viscoelastic or elastic shape-memory polyurethane foam 101 and strips of adhesive polyurethane gel 102 which ensure the adhesion of the mattress 1 to the rigid support, not shown.

[0065] The adhesive side is protected during non-use by a film 104 which covers all the strips (figure 6) or by various separate films 104 (figure 7).

[0066] Figures 9-11 schematically show a mattress 1 comprising a layer or sponge in viscoelastic or elastic shape-memory polyurethane foam 101 and a lattice of strips of adhesive polyurethane gel 102 which guarantee the adhesion of the mattress 1 to the rigid support, not illustrated.

[0067] The adhesive side of the lattice is protected during non-use by a single film 104 which covers the whole lattice (figure 9) or by various separate films 104 (figure 10).

[0068] Figures 12-14 schematically illustrate a mattress 1 comprising a layer or sponge in viscoelastic or elastic shape-memory polyurethane foam 101 and a plurality of inserts 102', of various shapes and sizes in adhesive polyurethane gel, which guarantee the adhesion of the mattress 1 to the rigid support, not illustrated.

[0069] The adhesive side of the inserts 102' is protected during non-use by a single film 104 that covers them (figure 12) or by various separate films 104 (figure 13).

[0070] Figures 15 and 16 illustrate a further embodiment wherein the mattress or mat 1 is composed, in its adhesive component, of strips of adhesive polyurethane gel 102 and, in its component for releasing the pressures exerted by at least part of a patient's body, by a sandwich structure comprising two layers or sponges in viscoelastic or elastic shape-memory polyurethane foam 101 interspersed with a layer of non-adhesive polyurethane gel 103.

[0071] The mattress or mat 1 object of the present invention is disposable and can be simply disposed of once used, therefore without the need for sanitization.

[0072] The mattress or mat 1 object of the present invention guarantees a first protection, i.e. emergency and not prolonged over time, for the patient against bed-sores as it allows the discharge of contact pressures and allows an excellent skin ventilation; it can consequently be used in both emergency situations and in the operat-

ing theatre, thus facilitating the positioning of the patient, preferably for times not exceeding 48 hours.

[0073] These mattresses or mats 1 are useful, quick to apply, i.e. to adhere/connect stably but removably on rigid supports (horizontal or tilted) thanks to the adhesive layers or inserts 102, 102', easy to dispose of and at low costs.

[0074] Thanks to the presence of adhesive gel, the mattress or mat 1 object of the present invention can be stably attached to any surface without the need for using straps.

[0075] Furthermore, as the attachment to the surfaces is guaranteed by said gel, depending on the use, the mattress/mat 1 can be produced in any size and shape, even with different proportions between the layers.

[0076] The mattress/mat 1 is suitable for any handling procedure which provides, in some practices, for also keeping patients in tilted positions of many degrees, for example both in tilt, trendelenburg or antitrendelenburg.

[0077] The mattress/mat 1 can be used for example: in first aid, on ambulances, applied on stretchers, for facilitating the air transport of injured or seriously ill patients, in operating theatres, in veterinary surgery, on robotic operating tables.

[0078] The objectives of the invention mentioned in the preamble of the description have thus been achieved.

[0079] The protection scope of the present invention is defined by the enclosed claims.

Claims

1. An anti-decubitus mattress or mat (1) to be positioned on a rigid support for supporting at least part of a patient's body, said mattress or mat (1) being composed of at least one layer or sponge made of viscoelastic or elastic shape-memory polyurethane foam (101) and said mattress or mat (1) having an upper surface (A) suitable for coming into contact with at least part of the patient's body and a lower surface (B) suitable for being connected with the rigid support, said mattress or mat (1) comprises at least one strip or insert in polymer gel, said gel having adhesive properties (102,102') for ensuring the adhesion of at least part of said lower surface (B) to said rigid support **characterized in that** said mattress or mat (1) comprises various geometrical-shaped inserts (102') in adhesive polymer gel and distributed over at least part of the lower surface (B) of the mattress or mat (1), said geometrical-shaped inserts (102') with a round, square, oval or similar base are provided in combination with said one or more strips (102) i.e. elongated inserts with a rectangular base or the like, said strips and inserts in polymer gel (102,102') have a thickness ranging from 0.01 cm to 10 cm.

2. The anti-decubitus mattress or mat (1) according to

claim 1, **characterized in that** said at least one strip or insert in polymer gel (102,102') has a compact structure i.e. not spongy.

3. The anti-decubitus mattress or mat (1) according to one or more of the previous claims, **characterized in that** said at least one layer or sponge in viscoelastic or elastic shape-memory polyurethane foam (101) has a thickness ranging from 5 mm to 40 cm.

4. The anti-decubitus mattress or mat (1) according to one or more of the previous claims, **characterized in that** it comprises various strips in adhesive polymer gel (102) positioned parallel to each other and distributed over at least part of the lower surface (B) of the mattress or mat (1).

5. The anti-decubitus mattress or mat (1) according to one or more of the previous claims, **characterized in that** it comprises various strips in compact adhesive polymer gel (102) positioned intersecting each other and distributed over at least part of the lower surface (B) of the mattress or mat (1).

6. The anti-decubitus mattress or mat (1) according to one or more of the previous claims, **characterized in that** said at least one strip or insert (102,102') is uniformly distributed over at least part of the lower surface (B) of the mattress or mat (1).

7. The anti-decubitus mattress or mat (1) according to one or more of the previous claims, **characterized in that** said at least one layer or sponge made of viscoelastic or elastic shape-memory polyurethane foam (101) is provided in combination with at least one layer in non-adhesive polymer gel (103).

8. The anti-decubitus mattress or mat (1) according to claim 7, **characterized in that** said at least one layer in non-adhesive polymer gel (103) has a thickness ranging from 1 mm to 10 mm.

9. The anti-decubitus mattress or mat (1) according to claim 7 or 8, **characterized in that** said at least one layer in non-adhesive polymeric gel (103) is provided between at least two layers or sponges made of viscoelastic or elastic shape-memory polyurethane foam (101).

10. The anti-decubitus mattress or mat (1) according to one or more of the previous claims from 7 to 9, **characterized in that** said at least one non-adhesive layer (103) is provided on the side of the mattress or mat (1) facing the rigid support and said at least one strip or insert in adhesive polymer gel (102,102',102''), suitable for causing said lower surface (B) to at least partially adhere to said rigid support, is provided on said at

least one layer in non-adhesive polymer gel (103).

11. The anti-decubitus mattress or mat (1) according to one or more of the previous claims, **characterized in that** said at least one strip or insert in adhesive polymer gel (102,102',102'') which ensures the at least partial adhesion of said lower surface (B) to said rigid support, has, on the side facing the rigid support, at least one protective film (104) removable before use.
12. The anti-decubitus mattress or mat (1) according to claim 7, **characterized in that** said non-adhesive polymer gel (103) and/or said adhesive polymer gel (102,102',102'') is a polyurethane gel.
13. A method for the production of an anti-decubitus mattress or mat (1) according to one or more of the previous claims from 1 to 12, **characterized in that** said at least one strip or insert in adhesive polyurethane gel (102,102') is directly injected or glued onto said at least one layer or sponge made of viscoelastic or elastic shape-memory polyurethane foam (101) or onto said at least one layer of non-adhesive polymer gel (103), when provided in combination with said at least one layer or sponge made of viscoelastic or elastic shape-memory polyurethane foam (101) so as to create a whole with said overlying layer.

Patentansprüche

1. Anti-Dekubitus-Matratze oder -Matte (1) zum Positionieren auf einer starren Liege zum Auflegen mindestens eines Teils des Körpers eines Patienten, wobei die Matratze oder Matte (1) aus mindestens einer Schicht oder einem Schwamm aus viskoelastischem oder elastischem Formgedächtnis-Polyurethanschaum (101) besteht und die Matratze oder Matte (1) eine obere Fläche (A) aufweist, die geeignet ist, mit mindestens einem Teil des Körpers des Patienten in Kontakt zu kommen, und eine untere Fläche (B) aufweist, die geeignet ist, mit der starren Liege verbunden zu werden, die Matratze oder Matte (1) umfasst mindestens einen Streifen oder Einsatz aus Polymergel, wobei das Gel Klebeeigenschaften (102, 102') aufweist, um die Haftung mindestens eines Teils der unteren Fläche (B) der starren Liege sicherzustellen, **dadurch gekennzeichnet, dass** die Matratze oder Matte (1) verschiedene geometrisch geformte Einsätze (102') aus Polymer-Klebegel umfasst, die über mindestens einen Teil der unteren Fläche (B) der Matratze oder Matte (1) verteilt sind, wobei die geometrisch geformten Einsätze (102') mit einer runden, quadratischen, ovalen oder ähnlichen Basis in Kombination mit dem einen oder den mehreren Streifen (102)

bereitgestellt werden, d. h. bei länglichen Einsätzen mit einer rechteckigen Basis oder dergleichen, haben die Streifen und Einsätze aus Polymergel (102, 102') eine Dicke im Bereich von 0,01 cm bis 10 cm.

2. Anti-Dekubitus-Matratze oder -Matte (1) nach Anspruch 1, **dadurch gekennzeichnet, dass** der mindestens eine Streifen oder Einsatz aus Polymergel (102, 102') eine kompakte Struktur aufweist, d. h. nicht schwammig ist.
3. Anti-Dekubitus-Matratze oder -Matte (1) nach einem oder mehreren der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** die mindestens eine Schicht oder der mindestens eine Schwamm aus viskoelastischem oder elastischem Formgedächtnis-Polyurethanschaum (101) eine Dicke im Bereich von 5 mm bis 40 cm aufweist.
4. Anti-Dekubitus-Matratze oder Matte (1) nach einem oder mehreren der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** sie verschiedene Streifen aus Polymer-Klebegel (102) parallel zueinander und verteilt auf mindestens einen Teil der unteren Fläche (B) der Matratze oder Matte (1) umfasst.
5. Anti-Dekubitus-Matratze oder -Matte (1) nach einem oder mehreren der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** sie verschiedene Streifen aus kompaktem Polymer-Klebegel (102) umfasst, die sich kreuzen und über mindestens einen Teil der unteren Fläche (B) der Matratze oder Matte (1) verteilt sind.
6. Anti-Dekubitus-Matratze oder -Matte (1) nach einem oder mehreren der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** mindestens ein Streifen oder Einsatz (102,102') gleichmäßig über mindestens einen Teil der unteren Fläche (B) der Matratze oder Matte (1) verteilt ist.
7. Anti-Dekubitus-Matratze oder -Matte (1) nach einem oder mehreren der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** mindestens eine Schicht oder ein Schwamm aus viskoelastischem oder elastischem Formgedächtnis-Polyurethanschaum (101) in Kombination mit mindestens einer Schicht aus nichtklebendem Polymergel (103) vorgesehen ist.
8. Anti-Dekubitus-Matratze oder -Matte (1) nach Anspruch 7, **dadurch gekennzeichnet, dass** die mindestens eine Schicht aus nichtklebendem Polymergel (103) eine Dicke im Bereich von 1 mm bis 10 mm aufweist.
9. Anti-Dekubitus-Matratze oder -Matte (1) nach An-

spruch 7 oder 8, **dadurch gekennzeichnet, dass** die mindestens eine Schicht aus nichtklebendem Polymergel (103) zwischen mindestens zwei Schichten oder Schwämmen aus viskoelastischem oder elastischem Formgedächtnis-Polyurethanschaum (101) vorgesehen ist.

10. Anti-Dekubitus-Matratze oder -Matte (1) nach einem oder mehreren der vorstehenden Ansprüche von 7 bis 9, **gekennzeichnet dadurch, dass** die mindestens eine nichtklebende Schicht (103) auf der Seite der Matratze oder Matte (1), die der starren Liege zugewandt ist, vorgesehen ist und der mindestens eine Streifen oder Einsatz aus Polymer-Klebegel (102, 102', 102''), der geeignet ist, die untere Fläche (B) mindestens teilweise an der starren Liege haften zu lassen, auf der mindestens einen Schicht in nichtklebendem Polymergel (103) vorgesehen ist.

11. Anti-Dekubitus-Matratze oder -Matte (1) nach einem oder mehreren der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** der mindestens eine Streifen oder der Einsatz aus Polymer-Klebegel (102, 102', 102''), der die mindestens teilweise Haftung der unteren Fläche (B) an der starren Liege gewährleistet, auf der Seite, die der starren Liege zugewandt ist, mindestens eine Schutzfolie (104) aufweist, die vor dem Gebrauch entfernt werden muss.

12. Anti-Dekubitus-Matratze oder Matte (1) nach Anspruch 7, **dadurch gekennzeichnet, dass** das nichtklebende Polymergel (103) und/oder das Polymer-Klebegel (102, 102', 102'') ein Polyurethan-Gel ist.

13. Verfahren zur Herstellung einer Anti-Dekubitus-Matratze oder Matte (1) nach einem oder mehreren der vorstehenden Ansprüche von 1 bis 12, **dadurch gekennzeichnet, dass** mindestens ein Streifen oder Einsatz aus Klebegel (102, 102') direkt auf die mindestens eine Schicht oder den Schwamm aus viskoelastischem oder elastischem Formgedächtnis-Polyurethanschaum (101) oder auf die mindestens eine Schicht aus nichtklebendem Polymergel (103) gespritzt oder geklebt wird, wenn es in Kombination mit der mindestens einen Schicht oder dem Schwamm aus viskoelastischem oder elastischem Formgedächtnis-Polyurethanschaum (101) bereitgestellt wird, um ein Ganzes mit der darüber liegenden Schicht zu schaffen.

Revendications

1. Matelas ou tapis anti-décubitus (1) à positionner sur un support rigide pour supporter au moins une partie

du corps d'un patient, ledit matelas ou matelas (1) étant composé d'au moins une couche ou éponge en mousse de polyuréthane à mémoire de forme viscoélastique ou élastique (101) et ledit matelas ou matelas (1) ayant une surface supérieure (A) apte à venir en contact avec au moins une partie du corps du patient et une surface inférieure (B) apte à être reliée au support rigide, ledit matelas ou matelas (1) comprend au moins une bande ou un insert en gel polymère, ledit gel ayant des propriétés adhésives (102, 102') pour assurer l'adhérence d'au moins une partie de ladite surface inférieure (B) sur ledit support rigide, **caractérisé en ce que** lesdits matelas ou tapis (1) comprennent divers inserts de forme géométrique (102') en gel polymère adhésif et répartis sur au moins une partie de la surface inférieure (B) du matelas ou tapis (1), lesdits inserts de forme géométrique (102') à base ronde, carrée, ovale ou similaire sont fournis dans combinaison avec ladite ou lesdites bandes (102), c'est-à-dire des inserts allongés avec une base rectangulaire ou similaire, lesdites bandes et inserts en gel polymère (102, 102') ont une épaisseur allant de 0,01 cm à 10 cm.

2. Matelas ou tapis anti-décubitus (1) selon la revendication 1, **caractérisé en ce que** ladite au moins une bande ou insertion dans un gel polymère (102, 102') a une structure compacte, c'est-à-dire non spongieuse.

3. Matelas ou tapis anti-décubitus (1) selon une ou plusieurs des revendications précédentes, **caractérisé en ce que** ladite au moins une couche ou éponge en mousse de polyuréthane à mémoire de forme viscoélastique ou élastique (101) a une épaisseur allant de 5 mm à 40 cm.

4. Le matelas ou tapis anti-décubitus (1) selon une ou plus des revendications précédentes, **caractérisées en ce qu'elles** comprennent diverses bandes dans un gel polymère adhésif (102) positionnées parallèlement les uns aux autres et réparties à au moins une partie de la surface inférieure (B) du matelas ou du tapis (1) •

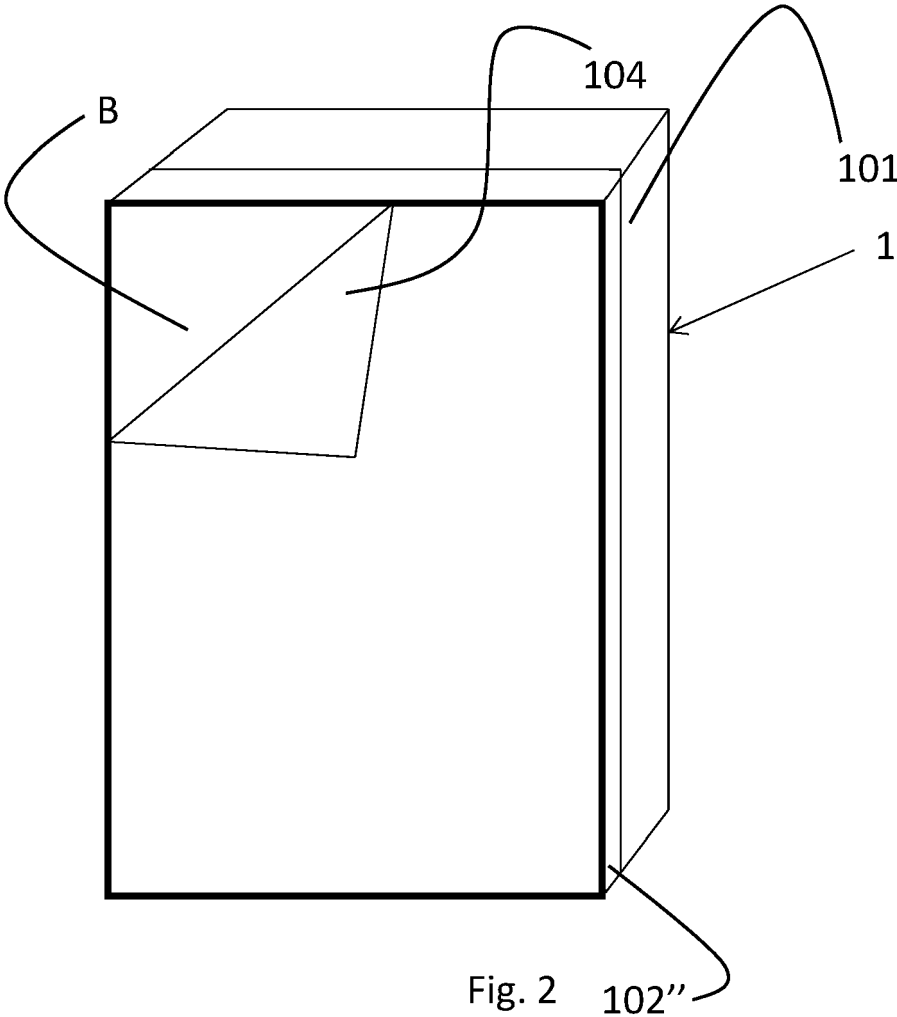
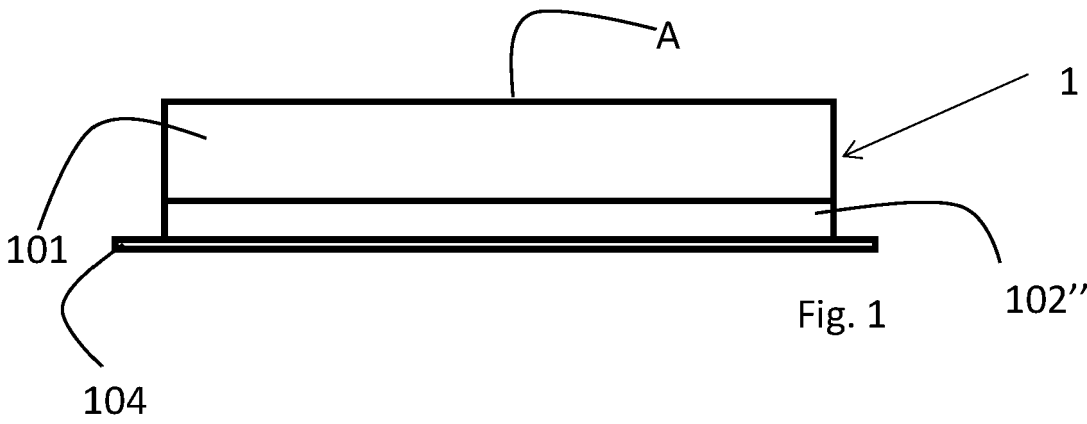
5. Le matelas ou tapis anti-décubitus (1) selon une ou plus des revendications précédentes, **caractérisées en ce qu'elles** comprennent diverses bandes en gel polymère adhésif compact (102) positionnées en intersection les unes avec les autres et réparties sur au moins une partie de la surface inférieure (B) du matelas ou du tapis (1) •

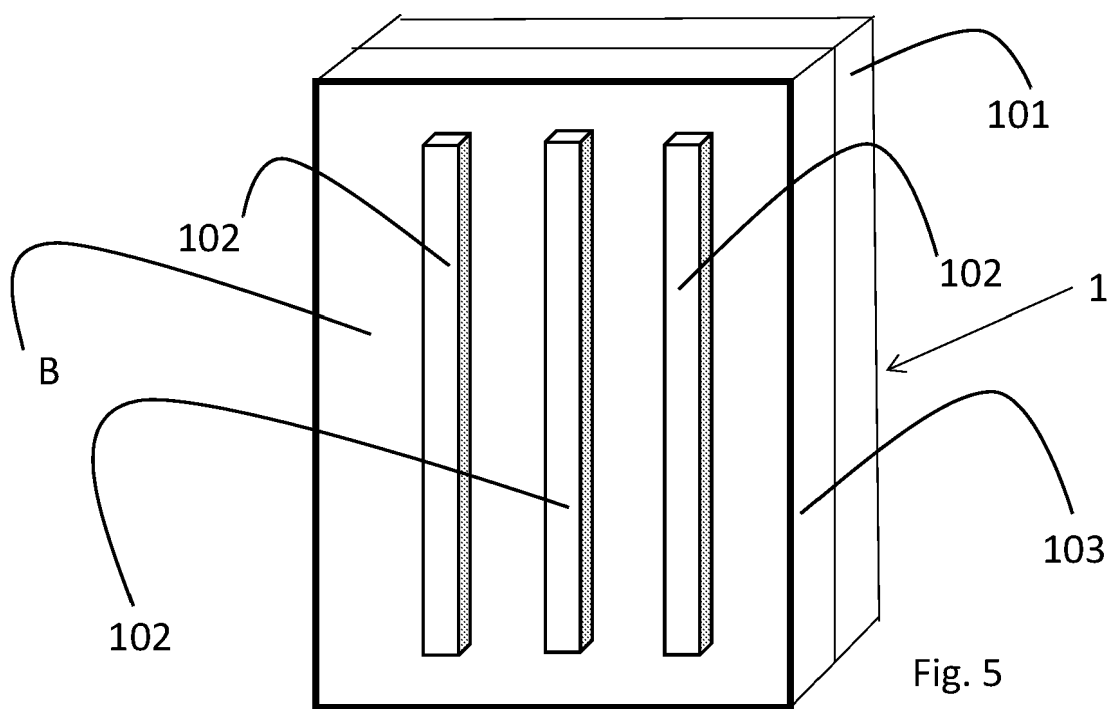
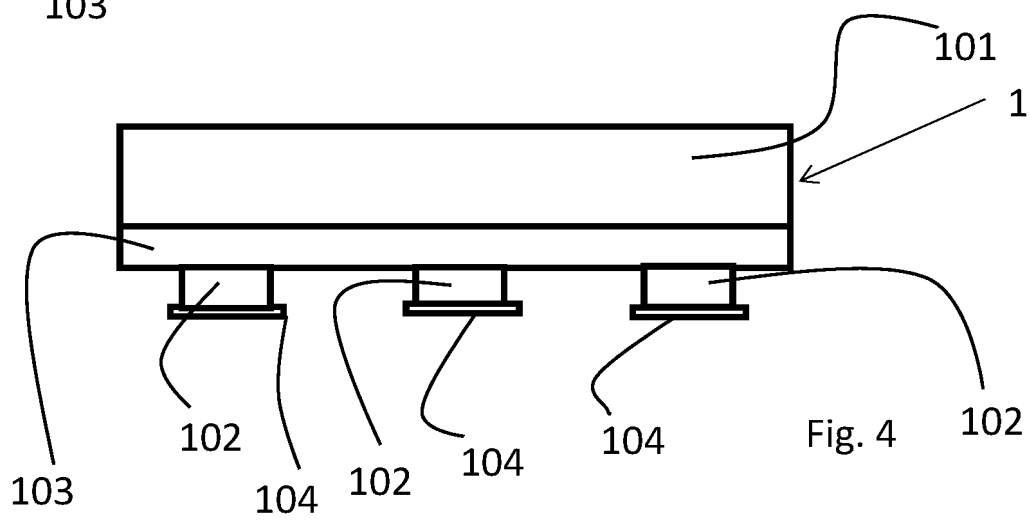
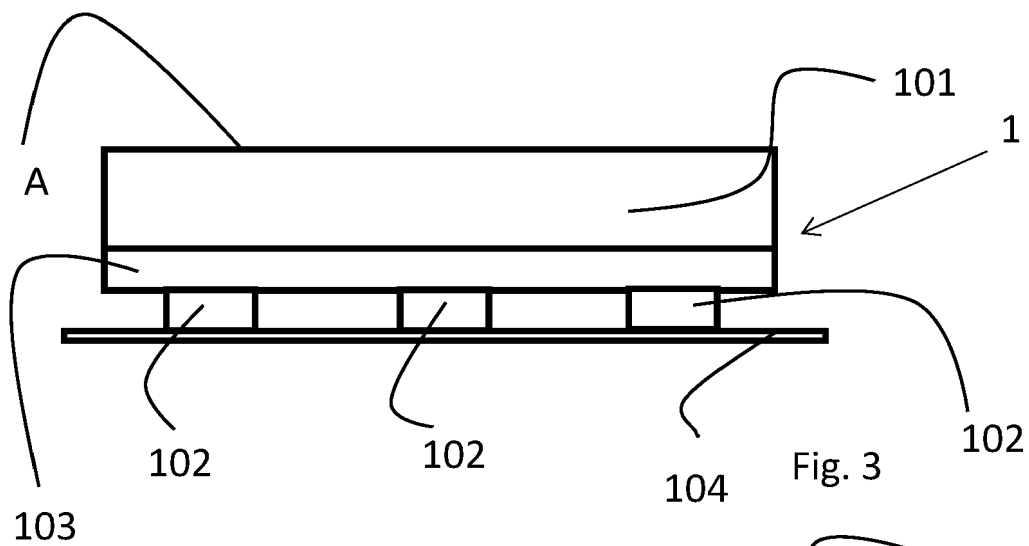
6. Le matelas ou tapis anti-décubitus (1) selon une ou plus des revendications précédentes, **caractérisées en ce que** ledit à au moins une bande ou un insert (102, 102') est uniformément réparti sur au moins une partie de la surface inférieure (B) du

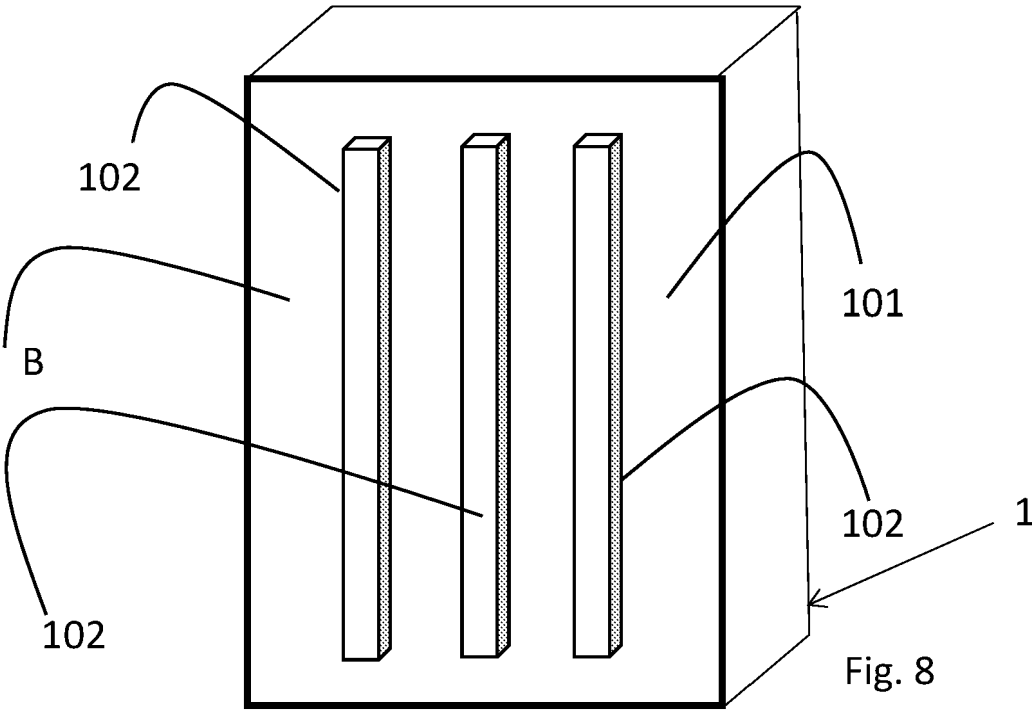
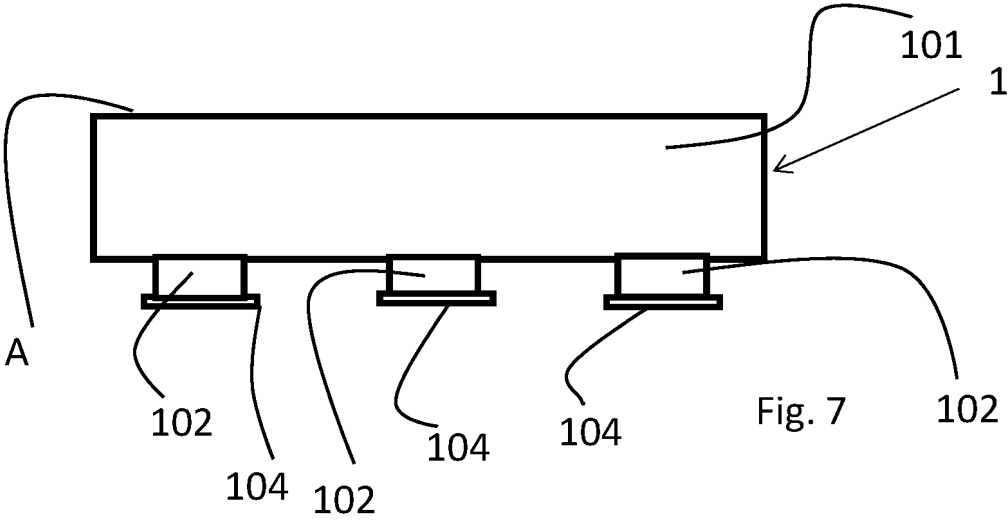
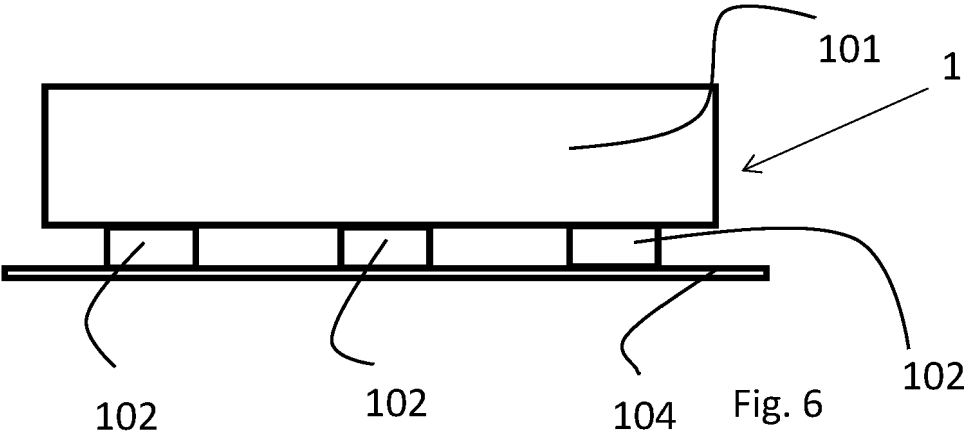
matelas ou tapis (1).

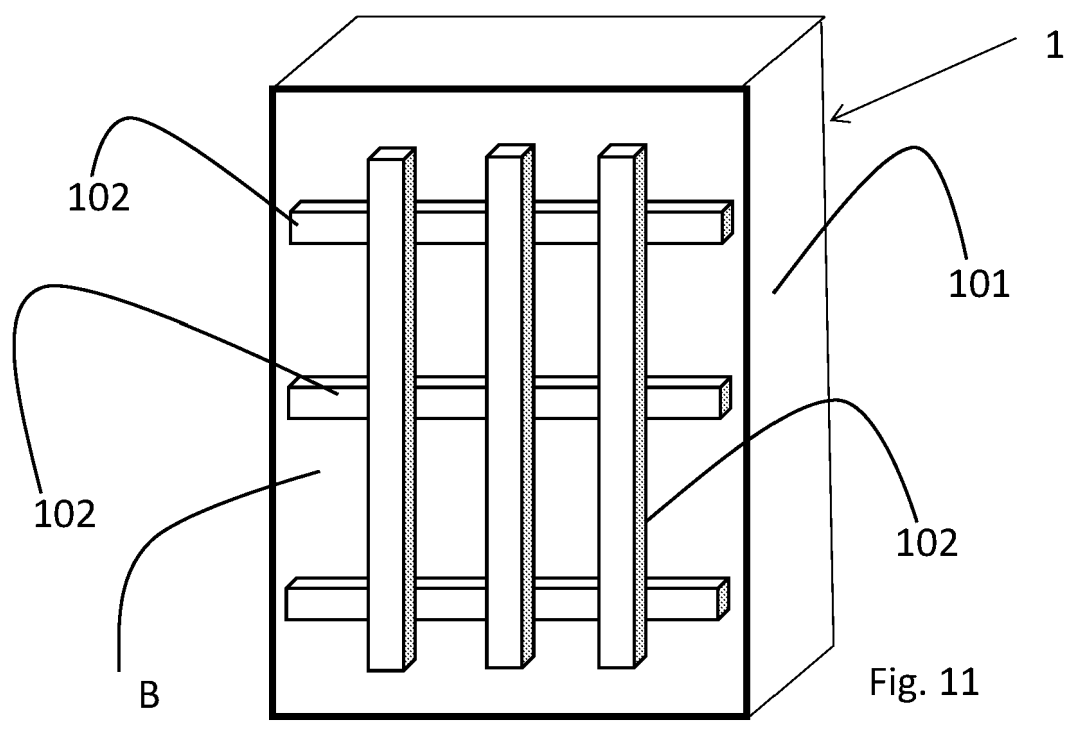
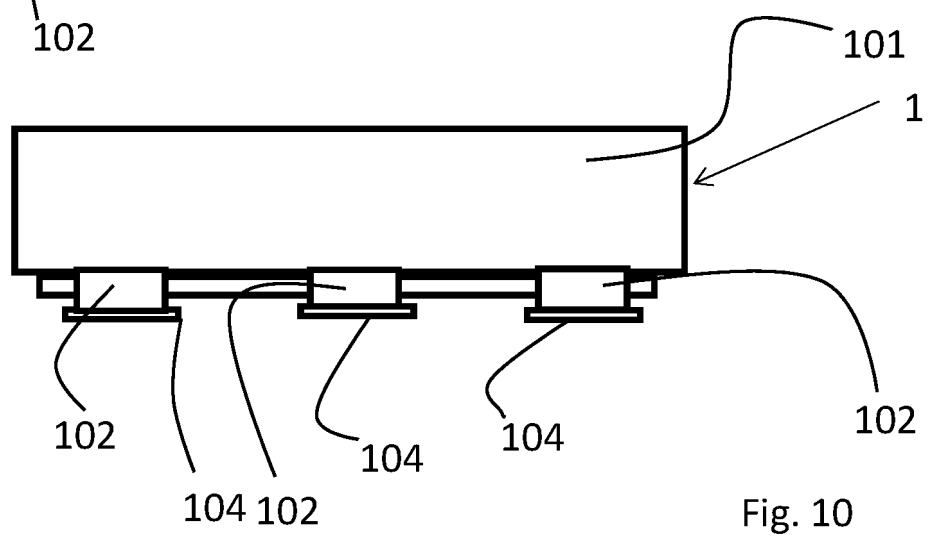
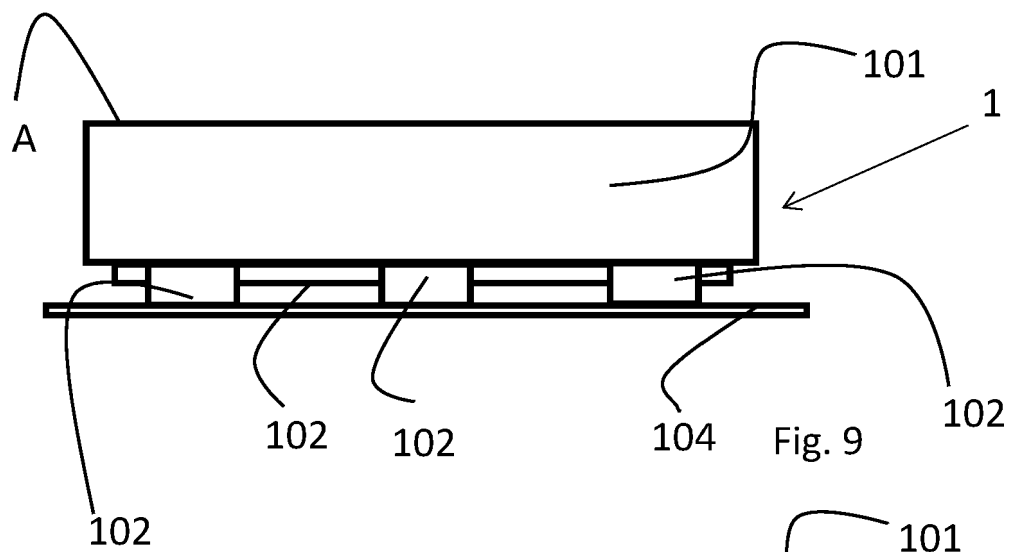
7. Le matelas ou tapis anti-décubitus (1) selon une ou plus des revendications précédentes, **caractérisées en ce que** ledit à au moins une couche ou éponge en mousse de polyuréthane à mémoire de forme viscoélastique ou élastique (101) est fournie en combinaison avec au moins une couche en gel polymère non adhésif (103) .
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8. Matelas ou tapis anti-décubitus (1) selon la revendication 7, **caractérisé en ce que** ladite au moins une couche dans un gel polymère non adhésif (103) a une épaisseur allant de 1 mm à 10 mm.
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9. Matelas ou tapis anti-décubitus (1) selon la revendication 7 ou 8, **caractérisé en ce que** ladite au moins une couche dans un gel polymère non adhésif (103) est prévue entre au moins deux couches ou éponges en mousse de polyuréthane à mémoire de forme viscoélastique ou élastique (101) .
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10. Le matelas ou tapis anti-décubitus (1) selon une ou plus des revendications précédentes de 7 à 9, **caractérisées par** que ladite au moins une couche non adhésive (103) est disposée sur le côté du matelas ou du tapis (1) faisant face au support rigide et que ladite au moins une bande ou insert dans un gel polymère adhésif (102, 102', 102"), approprié pour amener ladite surface inférieure (B) à adhérer au moins partiellement audit support rigide, est disposé sur ladite au moins une couche dans un gel polymère non adhésif (103) .
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11. Matelas ou tapis anti-décubitus (1) selon une ou plusieurs des revendications précédentes, **caractérisé en ce que** ladite au moins une bande ou ledit au moins un insert dans un gel polymère adhésif (102, 102', 102 ") qui assure l'adhésion au moins partielle de ladite surface inférieure (B) audit support rigide, comporte, sur le côté faisant face au support rigide, au moins un film de protection (104) amovible avant utilisation.
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12. Le matelas ou tapis anti-décubitus (1) selon revendication 7, **caractérisé en ce que** ledit gel polymère non adhésif (103) et/ou ledit gel polymère adhésif (102, 102', 102") est un gel de polyuréthane.
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13. Procédé de production d'un
matelas ou tapis anti-décubitus (1) selon l'une ou plusieurs des revendications de 1 à 12, **caractérisé en ce que** ledit au moins un bande ou insert en gel de polyuréthane adhésif (102, 102') est directement injecté ou collé sur ladite au moins une couche ou éponge à mémoire de forme viscoélastique ou élastique mousse de polyuréthane (101) ou sur ladite au moins une couche de gel polymère non adhésif
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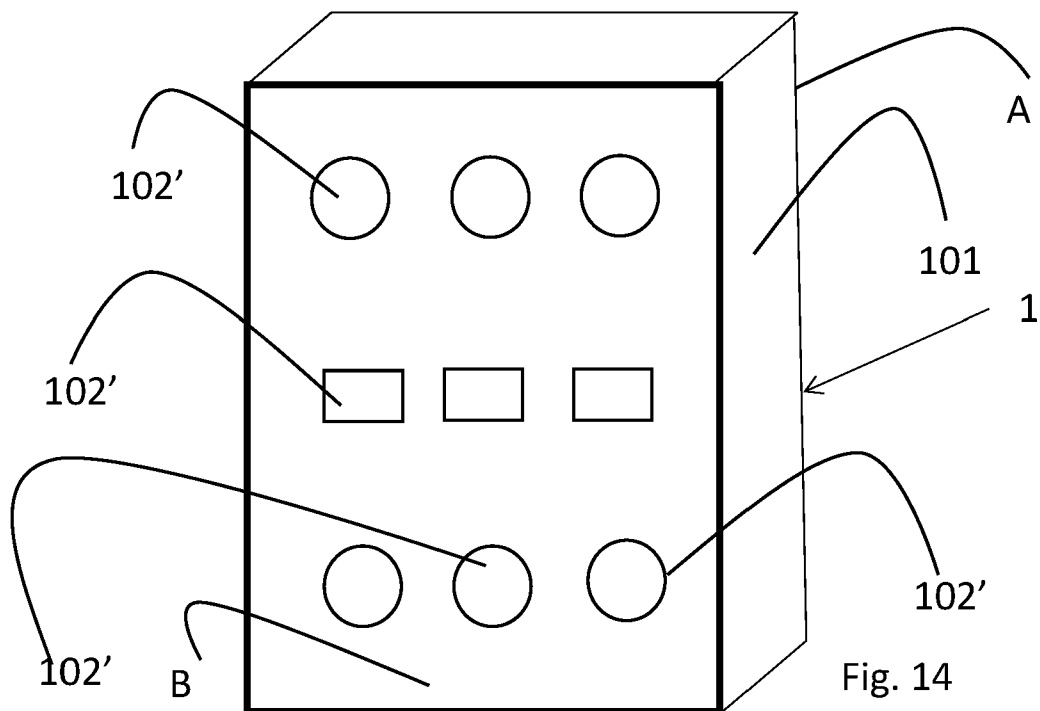
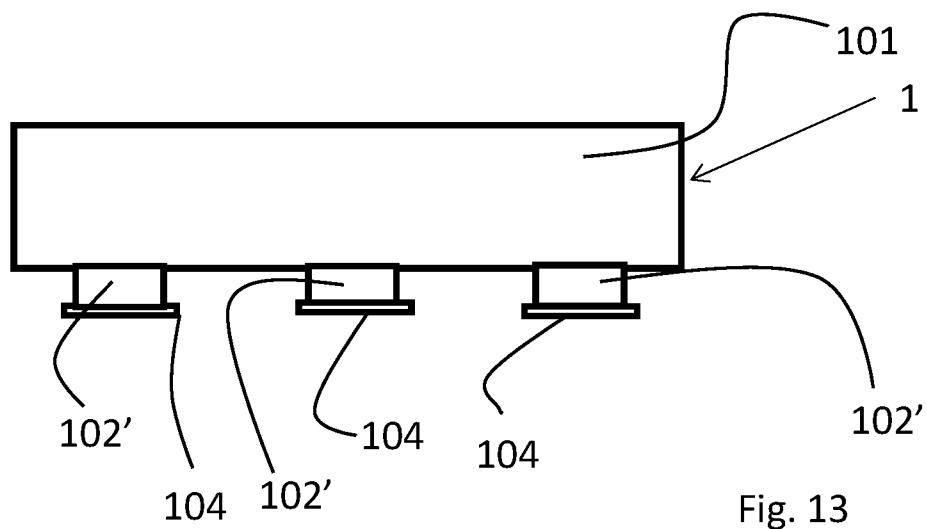
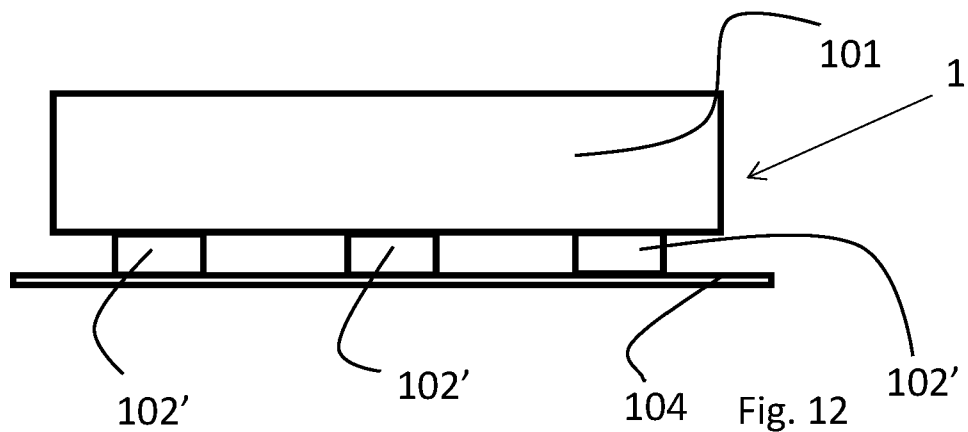
(103), lorsqu'il est fourni en combinaison avec ladite au moins une couche ou éponge en viscoélastique ou mousse de polyuréthane à mémoire de forme élastique (101) de manière à créer un tout avec ladite couche sus-jacente.

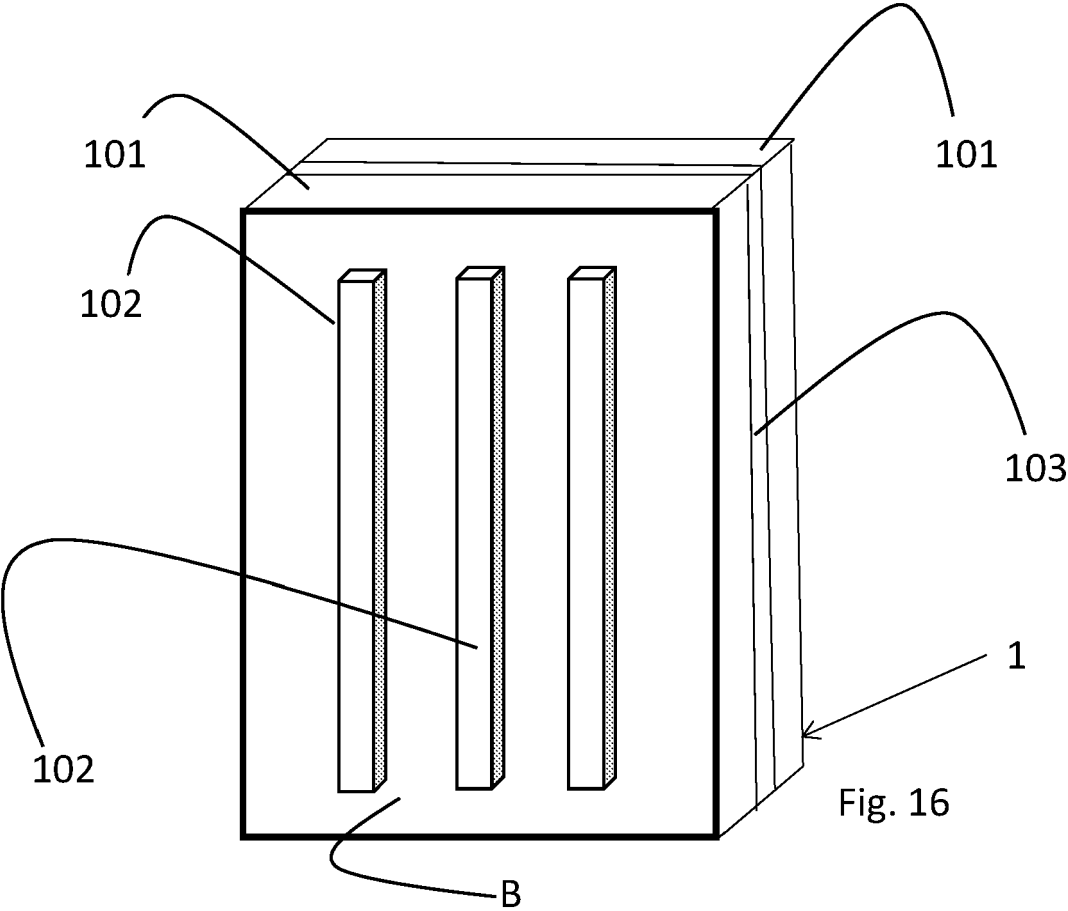
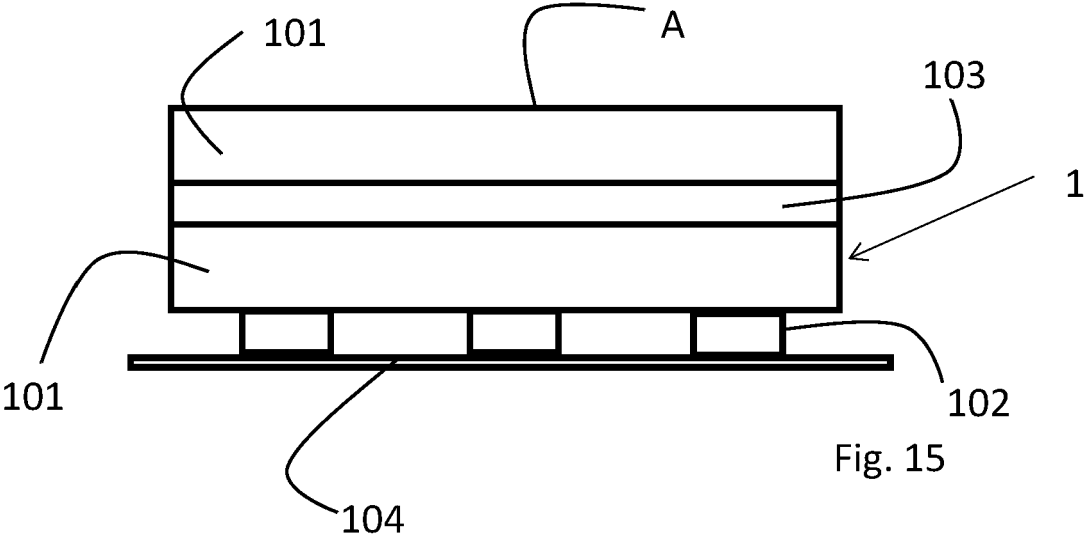












REFERENCES CITED IN THE DESCRIPTION

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