(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 0 999 769 B1

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
11.04.2001 Bulletin 2001/15

(21) Application number: **98937767.6**

(22) Date of filing: **29.07.1998**

(51) Int Cl.[7]: **A47C 1/00**

(86) International application number:
PCT/IT98/00216

(87) International publication number:
WO 99/05940 (11.02.1999 Gazette 1999/06)

(54) **METHOD FOR MAKING A VARIABLE GEOMETRY AND HARDNESS MATTRESS, AND THE MATTRESS MADE THEREBY**

VERFAHREN ZUR HERSTELLUNG EINER VERSTELLBAREN MATRATZE, UND DADURCH HERGESTELLTE MATRATZE

PROCEDE DE FABRICATION D'UN MATELAS A GEOMETRIE ET DURETE VARIABLES ET MATELAS AINSI FABRIQUE

(84) Designated Contracting States:
CH DE ES GB LI PT

(30) Priority: **29.07.1997 IT MI971816**

(43) Date of publication of application:
17.05.2000 Bulletin 2000/20

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DE-A- 3 937 214 **FR-A- 2 720 245**

EP 0 999 769 B1

Printed by Jouve, 75001 PARIS (FR)

Description

Technical Field

[0001] The invention relates to a method for making a variable geometry and hardness mattress and the mattress made thereby.

Background Art

[0002] Statistically, a person spends about a third of his/her life in sleeping, thereby a high comfort in sleeping should be a self-evident matter.

[0003] As is known, each person has a different bone construction and, in particular, different curvatures of the spine, originating much or more accentuated natural lordoses and kyposes, and, for this reason, even in the absence of a clinic pathologic symptomatic pattern, each person would require a mattress susceptible to be perfectly fitted to his/her bone construction in order to assure wellbeing and comfort to the body during the sleeping.

[0004] Mattress making industries have already introduced into the market several solutions for solving the above mentioned specific problem, by providing spring, orthopedic, foamed rubber, mattresses, including a wool or other synthetic microcellular foamed material paddings.

[0005] However, prior mattress making methods, and the mattresses made thereby, solve only partially the disclosed technical problem, since they have the following disadvantages.

[0006] Prior mattress making methods, actually, provides mattresses including two or more mattress portions, which must be coupled to one another, in a different manner depending on the type of padding; for example, in the case of highly deformable materials, such as a microcellular foamed material, is already known to connect at least two elements having different configurations, which are separately made and processed, with a consequent material waste.

[0007] Moreover, the connection of the several elements constituting the above mentioned prior mattresses, represents an additional cost in making said mattresses.

[0008] Moreover, any prior mattress is provided with poor fitting properties preventing said prior mattresses from properly fitting to the bone construction of a human body. This is due to the fact that the individual elements forming the inside of the mattress do not properly react to the compression due to the variably distributed human body weight, in order to facilitate a natural location of the spine curvature and of the remaining part of the body. Thus, to uneven pressures on the mattress caused by the mentioned spine curvature and the uneven distribution of the body weight, which is usually greater in the shoulder and pelvis areas, do not correspond different behaviours of the mattress structural elements.

[0009] As a consequence of the above, a further disadvantage of prior mattresses is that they provide a poor comfort in the case of particular stresses affecting the bone construction: this will negatively affect the sleep rest with tiresome consequences for the awaking persons such as cephalea, discomfort feeling and so on.

[0010] FR-A-2 720 245 discloses a mattress made from a block of foam material in which transversal cells are made by cutting out cylinders. Each block is made from two layers of foam material which have different densities and are joined together. The cells are cut out across the interface of the two layers. The cylinders are cut out from blocks with different densities and are inserted into the cells to adjust the hardness of the mattress. Each cylinder has a sheath into which a rod is inserted to help its insertion into a cell.

[0011] DE-A-3 937 214 discloses a mattress made of elastic material and having a series of bores containing fillings of various elasticities such as rubber or other foam, or inflatable pouches.

Disclosure of the Invention

[0012] Accordingly, the aim of the present invention is to overcome the above mentioned drawbacks of prior mattresses.

[0013] In particular, a main object of the present invention is to provide a method for making a variable geometry and hardness mattress, as well as the related mattress, which can be simply industrially carried out without any material waste, the made mattress being adapted to be easily fitted to the bone construction of any persons, while providing a great comfort and having a reduced cost.

[0014] Briefly, according to the present invention, a method has been provided for making a variable geometry and hardness mattress, comprising the steps of making one or more microcellular foamed material elements, and providing, by cross cutting said elements, a plurality of throughgoing holes, in which a corresponding plurality of variable configuration supporting compensating elements are engaged.

[0015] Thus, the above method will provide a variable geometry and hardness mattress comprising a microcellular foamed material padding, wherein a plurality of variable configuration supporting compensating elements are arranged, said variable configuration supporting compensating elements being engaged in throughgoing holes formed through said padding, transversely thereof.

[0016] The method for making a variable geometry and hardness mattress according to the invention is characterized by the characterizing features disclosed in Claim 1.

[0017] The method for making a variable geometry and hardness mattress according to the invention provides the following advantages.

[0018] The mattress can be easily made without any material waste, thereby optimizing the processing costs and procedures.

[0019] Moreover, the making cost can be further reduced due to the simplicity of the series making method and the use of common components which are easily commercially available.

[0020] Furthermore, the mattresses made by the inventive method will provide a very good fitting to any type of bone patterns, said fitting being of a reversible type, allowing the improved mattress according to the present invention to be used by different persons.

[0021] A further advantage, which is a consequence of the above mentioned advantages, is that the subject mattress provides a high sleeping comfort, allowing a full relaxation even of those body portions which, during the day, have been highly stressed: thus, upon awakening the user will have a feeling of diffused wellbeing or comfort through the overall body.

Brief Description of the Drawings

[0022] Further characteristics, advantages and constructional details of the inventive method for making a variable geometry and hardness mattress, as well as of the mattress made thereby, will become more apparent from the following disclosure with reference to the accompanying drawings showing, by way of an indicative, but not limitative example, a preferred embodiment thereof.

[0023] In the drawings:

Figure 1 is a perspective view of a microcellular foamed material element necessary for carrying out the mattress making method according to the invention;

Figure 2 is a perspective view illustrating a step of the mattress making method according to the invention;

Figure 3 is a further perspective view of a compensating element included in the mattress made by the mattress making method according to the invention;

Figure 4 is a side cross-sectional view illustrating a first deforming possibility for deforming the mattress made by mattress making method according to the invention;

Figure 5 is a cross-sectional side view illustrating a second possibility for deforming the subject mattress;

Figure 6 is a partial perspective view, as partially cross-sectioned, of the variable geometry and hardness mattress made by the mattress making method according to the invention;

Figure 7 is a perspective view of the mattress shown in Figure 6;

Figure 8 is a side view of the mattress shown in Figure 6, during the use thereof;

Figure 9 is an enlarged cross-sectional view of a valve included in the mattress according to the invention.

Ways of carrying out the Invention

[0024] With reference to the number references of the above disclosed figures, the method for making a variable geometry and hardness mattress according to the present invention provides to use one or more elements 20, in single piece, made of a microcellular foamed material, constructed by any suitable known methods, therethrough, by cutting means, preferably cutting blades, two pair of recesses or throughgoing holes 3, 4 are formed, said recesses or throughgoing holes having advantageously a cylindric and parallelepipedal configuration.

[0025] Alternately, said recesses can also have an elliptical or polygonal cross-section.

[0026] Generally, the above mentioned cutting blades will be automatically operated, starting from a side of the element 20 and forming in succession, one by one, the above mentioned recesses 3, 4.

[0027] More specifically, the foamed material plugs cut away by the cutting blades are withdrawn successively one by one, and then they are slightly pressed and coated by an impermeable envelope 9, preferably made of a PVC material.

[0028] As enclosed in said impermeable envelope 9 the microcellular foamed material forming said plugs will recover from the pressed condition thereof.

[0029] Thus, the envelope 9 will be tensioned, thereby providing a result identical to that provided by a slight overpressure inflating operation.

[0030] Thus, compensating elements 5 and 6 proper will be provided which, as it will be disclosed in a more detailed manner hereinafter, being responsive to the load applied thereon, will allow the mattress 1 to change its geometry.

[0031] Moreover, disclosed hereinafter, to the end portions of each element 5 and 6, two valves 7 are coupled, allowing said elements to change their geometry or configuration.

[0032] In particular, the method according to the present invention provides to engage the impermeable envelope 9, coated plugs or cylindrical and parallelepipedal compensating elements 5, 6 in the holes 3, 4 formed on the element 20.

[0033] Advantageously, said compensating elements 5, 6 have a size identical to, or slighter lower than, that of the holes 3, 4 to allow said compensating elements to be easily engaged in said holes.

[0034] The improved variable geometry and hardness mattress 1, made by the disclosed method which have a known type of surface, either quilted or lined by a wool or cotton material. The inner padding 2 is preferably constituted by one or more single-piece elements 20 made of said microcellular foamed material, such as polyurethane or latex.

[0035] Advantageously, as stated, in said padding 2 are transversely formed, by the above disclosed method, two recesses or throughgoing holes 3, of cylindric configuration, arranged at a central position, as well as two further throughgoing recesses or holes 4, of rectangular parallelepipedal configuration, located at the ends of said padding.

[0036] Alternately, the throughgoing holes 3, 4 can have either an elliptical or a polygonal cross-section.

[0037] The recesses 3, 4 are specifically designed for respectively engaging therein two cylindric supporting compensating elements 5 and two rectangular parallelepipedal supporting compensating elements 6, or other supporting compensating elements of other suitable configurations mating that of the recesses 3, 4.

[0038] The supporting compensating elements 5, 6 are moreover provided, at their ends, with outlet-air controlling valves 7 and are moreover provided with an inner padding 8 made of that same microcellular foamed flexible material forming each element 20.

[0039] The padding 8 is fully encompassed by an impermeable envelope 9, preventing air from exiting the microcellular foamed material as the latter is pressed: in particular, air will exit said material only by opening at least one of the valves 7 applied to the longitudinal ends of the supporting compensating elements 5 and 6.

[0040] The contour of the impermeable envelope 9 of said supporting compensating elements 5, 6, accordingly, will have a variable cross-section, to provide the mattress 1 with very good anatomic characteristics.

[0041] The above mentioned valves 7 comprise, as shown, an advantageously knurled knob 10 for easily gripping said valves; to said knob a threaded stem 11 is connected, engaged in a suitable threaded hole 12, and tightly engaging a seat 13 having a configuration mating that of said stem 11. This sealing connection being moreover assured by any known type of seal, not specifically shown.

[0042] The valves 7 can also be of a different type, and, for example, they can comprise buttons or plugs for the air unloading or loading operations.

[0043] Finally, it should be apparent that the provision, at the two longitudinal end portions of the supporting compensating elements 5, 6, of the valves 7, and the symmetrical arrangement, along the subject improved mattress 1, of said supporting compensating elements 5, 6, will allow the mattress to be properly used on the two sides thereof and for any possible laying arrangements.

[0044] In this connection it should be apparent that the constructional details can be replaced by other technically equivalent elements: accordingly, the used apparatus and materials, as well as the contingent size and shapes can be suitably changed, depending on requirements, without departing from the scope of the present invention.

[0045] The operation of the mattress 1 made by the method according to the present invention is very simple and self evident. In fact, upon laying thereon, the user, by his/her right or left hand, will open the valves 7 related to the supporting compensating element 5 and/or 6 the configuration whereof must be changed for mating the shape of the mattress 1 to the bone configuration of the user. Then, air will be ejected from the microcavities of the material forming the padding 8 of the supporting compensating elements 5 and/or 6, which elements can be held in a fully or partially emptied condition by closing the related valve 7, since the impermeable envelope or casing 9 would prevent ejected air from reentering said microcavities.

[0046] Then, by suitably deflating the mattress, the user will achieve the mattress 1 configuration best fitted to the bone structure of the user and depending on the contingent stress conditions.

[0047] In order to recover the mattress 1 to its starting conditions, the user must merely leave the mattress and reopen the valves 7 of the compensating elements 5 and/or 6 the configuration of which has been previously changed: thus, the mentioned elements 5,6 will recover their starting configuration since the padding 8 will be inflated again by drawing air into its inside.

[0048] Then, the improved mattress 1 could be further reshaped as disclosed for other stress conditions and/or for other users.

[0049] Finally, it should be apparent that the possibility of variably changing the geometry of the mattress 1, by independent portions, will allow the mattress to perfectly anatomically fit the user, this technological improvement being obtained by a very simple and unexpensive making method.

Claims

1. A method for making a variable geometry and hardness mattress, starting from at least one microcellular foamed material element (20), said method comprises the steps of providing cutting means for cutting, across said at least a microcellular element, a plurality of throughgoing holes (3, 4), and engaging in said throughgoing holes a corresponding plurality of variable configuration supporting compensating elements (5, 6) which have been formed by taking the foamed material plugs cut and withdrawn from the recesses (3, 4) of the element (20) and coating said plugs with an impermeable envelope (9) and further coupling an outlet-air controlling valve (7) to said compensating elements which in a closed position prevents air from exiting said impermeable envelope (9) and which in an open position allows air to exit said impermeable envelope (9) when a user lays on the mattress and allows air to enter said impermeable envelope (9) when a user leaves the mattress to return the mattress to its starting configuration

2. A method according to Claim 1, characterized in that said cutting means provide a pair of parallelepipedal throughgoing holes (4) at the ends of said at least a microcellular foamed material element (20), and a pair of cylindric throughgoing holes (3) at a central position thereof.

3. A method according to Claim 1, characterized in that two cylindric supporting compensating elements (5) and two parallelepipedal supporting compensating elements (6) are provided, said supporting compensating elements being made by removing the plug elements cut by said cutting means in forming said throughgoing holes (3, 4), subsequently slightly pressing said plugs for creating tensioned compensating elements (5, 6) such that the thus formed compensating elements have a size identical to, or slightly lower than, the recesses (3, 4) in which they are engaged.

4. A method according to Claim 1 characterized in that said cutting means comprise one or more automatically controlled cutting blades.

5. A method according to Claim 1 characterized in that said at least a microcellular foamed material element (20) is made of a polyurethane or latex material.

6. A variable geometry and hardness mattress, comprising a microcellular foamed material padding (2), a plurality of variable configuration compensating elements (5, 6), engaged in a plurality of throughgoing holes (3, 4) transversely formed through said padding (2), said compensating elements (5, 6) comprising the foamed material plugs cut and withdrawn from the holes (3, 4) of the padding (2) which are coating with an impermeable envelope (9) and said. compensating elements further having coupled thereto an outlet-air controlling valve (7) which in a closed position prevents air from exiting said impermeable envelope (9) and which in an open position allows air to exit said impermeable envelope (9) when a user lays on the mattress and allows air to enter said impermeable envelope (9) when a user leaves the mattress to return the mattress to its starting configuration.

7. A mattress according to Claim 6, characterized in that, at the ends of said mattress (1), two rectangular parallelepipedal holes (4) are formed, and that two further cylindric troughgoing holes (3) are formed at a central position thereof.

8. A mattress according to Claim 6, characterized in that inside said mattress (1) two cylindric supporting compensating elements (5) and two rectangular parallelepipedal supporting compensating elements (6) are provided.

9. A mattress according to Claim 6, characterized in that said throughgoing holes (3, 4) have a circular elliptical or polygonal cross-section.

10. A mattress according to Claim 6, characterized in that said supporting compensating elements (5, 6) comprise a microcellular foamed material padding (8) formed from the foamed material plugs cut and withdrawn from the holes (3, 4) of the padding (2) which are slightly pressed and coated by said impermeable envelope such that the thus formed compensating elements have a size identical to, or slightly lower than, the recesses (3, 4) in which they are engaged

11. A mattress according to Claim 6, characterized in that said padding (2) is provided with at least a microcellular foamed material element (20) made a s single piece.

12. A mattress according to Claim 10, characterized in that said supporting compensating elements (5, 6) comprise an impermeable envelope (9) having a variable cross-section contour, providing said mattress (1) with anatomic characteristics.

13. A mattress, according to Claim 10, characterized in that said valve (7) comprises a knurled knob (10), coupled to a threaded stem (11) engaging in a threaded hole (12) formed on said supporting compensating elements (5, 6), said stem (11) being tightly engaged in a mating recess (12) through a sealing gasket.

Patentansprüche

1. Verfahren zur Herstellung einer verstellbaren Matratze mit mindestens einem, aus Mikrozellschaumstoff bestehenden Element (20), wobei das Verfahren die Schritte umfaßt, daß Schneidmittel zum Schneiden über das mindestens eine Mikrozellelement, und eine Vielzahl von Durchgangslöchern (3, 4) vorgesehen sind, und in den Durchgangslöchern eine dementsprechende Vielzahl von variable Konfiguration unterstützenden Ausgleichselementen (5,6) eingreift, die dadurch ausgebildet wurden, daß die aus dem;Schaumstoff geschnittenen Stopfen, die von den Ausnehmungen (3,4) des Elementes (20) zurückgezogen: und mit einer undurchlässigen Hülle (9) überzogen wurden und durch die weitere Koppelung eines Luftaustritts-Regelventils (7) an die Ausgleichselemente, wodurch in einer geschlossenen Position der Austritt von Luft aus der undurchlässigen Hülle (9) verhindert wird, und in einer geöffneten Position der Austritt von Luft aus der

undurchlässigen Hülle (9) ermöglicht wird, wenn ein Benutzer auf der Matratze liegt, und Luft in die undurchlässige Hülle (9) eindringen läßt, wenn ein Benutzer die Matratze verläßt, um die Matratze wieder in ihre Ausgangskonfiguration zu bringen.

2. Verfahren nach Anspruch 1,
dadurch gekennzeichnet, daß
die Schneidmittel ein Paar parallelepipedaler Durchgangslöcher (4) an den Enden des mindestens einen aus Mikrozellschaumstoff bestehenden Elementes (20), sowie ein Paar zylindrischer Durchgangslöcher (3) an einer zentralen Position desselben bieten.

3. Verfahren nach Anspruch 1,
dadurch gekennzeichnet, daß
zwei zylindrische tragende Ausgleichselemente (5) und zwei parallelepipede tragende Ausgleichselemente (6) vorgesehen sind, wobei die tragenden Ausgleichselemente durch das Entfernen der durch das Schneidmittel geschnittenen Stopfenelemente bei der Ausbildung der Durchgangslöcher (3,4) hergestellt sind, wobei nachfolgend die Stopfen leicht gedrückt werden, um unter Spannung stehende Ausgleichselemente (5,6) zu erzeugen, so daß die so ausgebildeten Ausgleichselemente eine Größe aufweisen, die mit den Ausnehmungen (3,4), in denen sie in Eingriff stehen, identisch, oder etwas kleiner als diese ist.

4. Verfahren nach Anspruch 1,
dadurch gekennzeichnet, daß
die Schneidmittel eine oder mehrere automatisch gesteuerte Schneidklingen aufweisen.

5. Verfahren nach Anspruch 1,
dadurch gekennzeichnet, daß
das mindestens eine aus Mikrozellschaumstoff bestehende Element (20) aus einem Polyurethan- oder Latexmaterial hergestellt ist.

6. Verstellbare Matratze, die eine aus Mikrozellschaumstoff bestehende Polsterung (2), eine Vielzahl von variable Konfiguration unterstützenden Elementen (5,6) aufweist, die in eine Vielzahl von Durchgangslöchern (3,4) eingreifen, die quer durch die Polsterung (2) hindurch ausgebildet sind, wobei die Ausgleichselemente (5,6) die die aus dem Schaumstoff geschnittenen Stopfen umfassen, die von den Ausnehmungen (3,4) der Polsterung (2) zurückgezogen wurden und mit einer undurchlässigen Hülle (9) überzogen sind, wobei weiterhin ein Luftaustritts-Regelventil (7) an die Ausgleichselemente gekoppelt ist, das in einer geschlossenen Position den Austritt von Luft aus der undurchlässigen Hülle (9) verhindert, und das es in einer offenen Position ermöglicht, daß Luft aus der undurchlässigen Hülle (9) austritt, wenn ein Benutzer auf der Matratze liegt, und Luft in die undurchlässige Hülle (9) eindringen läßt, wenn ein Benutzer die Matratze verläßt, um die Matratze wieder in ihre Ausgangskonfiguration zu bringen.

7. Matratze nach Anspruch 6,
dadurch gekennzeichnet, daß
an den Enden der Matratze (1) zwei rechteckige parallelepipedale Löcher (4) ausgebildet sind, und daß zwei weitere zylindrische Durchgangslöcher (3) an einer zentralen Position derselben ausgebildet sind.

8. Matratze nach Anspruch 6,
dadurch gekennzeichnet, daß
innerhalb der Matratze (1) zwei zylindrische tragende Ausgleichselemente (5) und zwei rechteckige parallelepipedale tragende Ausgleichselemente (6) vorgesehen sind.

9. Matratze nach Anspruch 6,
dadurch gekennzeichnet, daß
die Durchgangslöcher (3,4) einen kreisförmigen elliptischen oder vieleckigen Querschnitt aufweisen.

10. Matratze nach Anspruch 6,
dadurch gekennzeichnet, daß
die zylindrischen tragenden Ausgleichselemente (5, 6) eine aus Mikrozellschaumstoff bestehende Polsterung (8) aufweisen, die aus den aus geschäumtem Material bestehenden, und von den Löchern (3,4) der Polsterung (2) zurückgezogenen Stopfen ausgebildet ist, die leicht gedrückt, und von der undurchlässigen Hülle so überzogen sind, daß die so ausgebildeten Ausgleichselemente eine Größe aufweisen, die mit den Ausnehmungen (3,4), in denen sie in Eingriff stehen, identisch, oder etwas kleiner als diese ist.

11. Matratze nach Anspruch 6,
dadurch gekennzeichnet, daß
die Polsterung (2) mit mindestens einem aus Mikrozellschaumstoff bestehenden Element (20) in einstückiger Ausführung versehen ist.

12. Matratze nach Anspruch 10,
dadurch gekennzeichnet, daß
die tragenden Ausgleichselemente (5,6) eine undurchlässige Hülle (9) mit einer veränderbaren Querschnittskontur umfassen, die die Matratze (1) mit anatomischen Merkmalen ausstattet.

13. Matratze nach Anspruch 10,
dadurch gekennzeichnet, daß
das Ventil (7) einen gerändelten Knopf (10) aufweist, der an einen Gewindeschaft (11) gekoppelt ist, der in ein auf den tragenden Ausgleichselemen-

ten (5,6) ausgebildetes Gewindeloch (12) eingreift, wobei der Schaft (11) mittels einer Dichtung fest in einer passenden Ausnehmung (12) in Eingriff steht.

Revendications

1. Procédé de fabrication d'un matelas à géométrie et à dureté variables, à partir d'au moins un élément de matériau du type d'une mousse micro cellulaire (20), ledit procédé comprenant les étapes de mise en oeuvre de moyens coupants pour découper, à travers ledit au moins un élément microcellulaire, plusieurs orifices traversant de part en part (3, 4) et d'introduction dans lesdits orifices traversant de part en part de plusieurs configurations variables correspondantes supportant des éléments de compensation (5, 6) qui sont formés en prenant des parties ("plugs") coupées dans le matériau du type mousse et retirées des orifices (3, 4) de l'élément (20) et en recouvrant lesdites parties d'une enveloppe imperméable (9) et, en outre, de couplage d'une valve de contrôle de sortie de l'air (7) aux dits éléments de compensation, qui, en position fermée, empêche l'air de sortir de ladite enveloppe imperméable (9) et qui, en position ouverte, permet à l'air de sortir de ladite enveloppe imperméable (9) quand un utilisateur s'allonge sur le matelas et qui permet à l'air de rentrer dans ladite enveloppe imperméable (9) quand un utilisateur se lève du matelas de manière à remettre le matelas dans sa position initiale.

2. Procédé selon la revendication 1, caractérisé en ce que lesdits moyens coupants créent une paire d'orifices traversant de part en part (4) de forme parallélépipédique aux extrémités dudit au moins un élément dans un matériau du type mousse micro cellulaire (20), et une paire d'orifices traversant de part en part (3) de forme cylindrique positionnés en son centre.

3. Procédé selon la revendication 1, caractérisé en ce que sont prévus deux éléments de compensation cylindriques de support (5) et deux éléments de compensation parallélépipédiques de support (6), lesdits éléments de compensation de support étant fabriqués en enlevant les éléments des parties coupées par lesdits moyens coupants en formant lesdits orifices traversant de part en part (3, 4), puis en pressant légèrement lesdites parties pour créer des éléments de compensation (5, 6) en tension de manière à ce que les éléments de compensations ainsi formés présentent une taille identique aux, ou légèrement inférieure aux, orifices (3, 4) dans lesquels ils sont introduits.

4. Procédé selon la revendication 1, caractérisé en ce que lesdits moyens coupants comprennent au moins une lame coupante contrôlée automatiquement.

5. Procédé selon la revendication 1, caractérisé en ce que ledit au moins un élément en matériau du type mousse micro cellulaire (20) est fabriqué dans un matériau du type polyuréthane ou latex.

6. Matelas à géométrie et à dureté variables, comprenant un rembourrage en matériau du type mousse micro cellulaire (2), des éléments de compensation (5, 6) à configurations variables, introduits dans plusieurs orifices traversant de part en part (3, 4) transversalement formés à travers ledit rembourrage (2), lesdits éléments de compensation (5, 6) comprenant les parties de matériau de type mousse coupées et retirées des orifices (3, 4) du rembourrage (2), qui sont recouvertes d'une enveloppe imperméable (9) et lesdits éléments de compensation y étant en outre couplés à une valve de contrôle de sortie de l'air (7) qui, en position fermée, empêche l'air de sortir de ladite enveloppe imperméable (9) et qui, en position ouverte, permet à l'air de sortir de ladite enveloppe imperméable (9) quand un utilisateur s'allonge sur le matelas et qui permet à l'air d'entrer dans ladite enveloppe imperméable (9) quand un utilisateur se lève du matelas de manière à remettre le matelas dans sa configuration initiale.

7. Matelas selon la revendication 6, caractérisé en ce que, aux extrémités dudit matelas (1), deux orifices de forme parallélépipèdes rectangles (4) sont formés et en ce que deux orifices traversant de part en part de forme cylindrique (3) supplémentaires sont formés en son centre.

8. Matelas selon la revendication 6, caractérisé en ce qu'à l'intérieur dudit matelas (1) deux éléments de compensation cylindriques de support (5) et deux éléments de compensation parallélépipédiques rectangles de support (6) sont formés en son centre.

9. Matelas selon la revendication 6, caractérisé en ce que lesdits orifices traversant de part en part (3, 4) présentent une coupe transversale de forme polygonale ou elliptique circulaire.

10. Matelas selon la revendication 6, caractérisé en ce que lesdits éléments compensateurs de support (5, 6) comprennent un rembourrage en matériau de type d'une mousse micro cellulaire (8) formée à partir des parties en matériau de type mousse coupées et retirées des orifices (3, 4) du rembourrage (2) qui sont légèrement pressées et recouvertes d'une enveloppe imperméable de manière à ce que les éléments de compensation ainsi formés présentent

une taille identique aux, ou légèrement inférieure aux, orifices (3, 4) dans lesquels ils sont introduits.

11. Matelas selon la revendication 6, caractérisé en ce que ledit rembourrage (2) est muni d'au moins un élément dans un matériau de type d'une mousse micro cellulaire (20) fabriqué en une seule pièce.

12. Matelas selon la revendication 10, caractérisé en ce que lesdits éléments de compensation (5, 6) comprennent une enveloppe imperméable (9) ayant un contour en coupe transversale variable, donnant audit matelas (1) des caractéristiques anatomiques.

13. Matelas selon la revendication 10, caractérisé en ce que ladite valve (7) comprend un bouton moleté (10), couplé à une goupille filetée (11) engagée dans un orifice taraudé (12) construit sur lesdits éléments de compensation (5,6), ladite goupille (11) étant solidement introduite dans un orifice de raccordement (12) à travers un joint d'étanchéité.

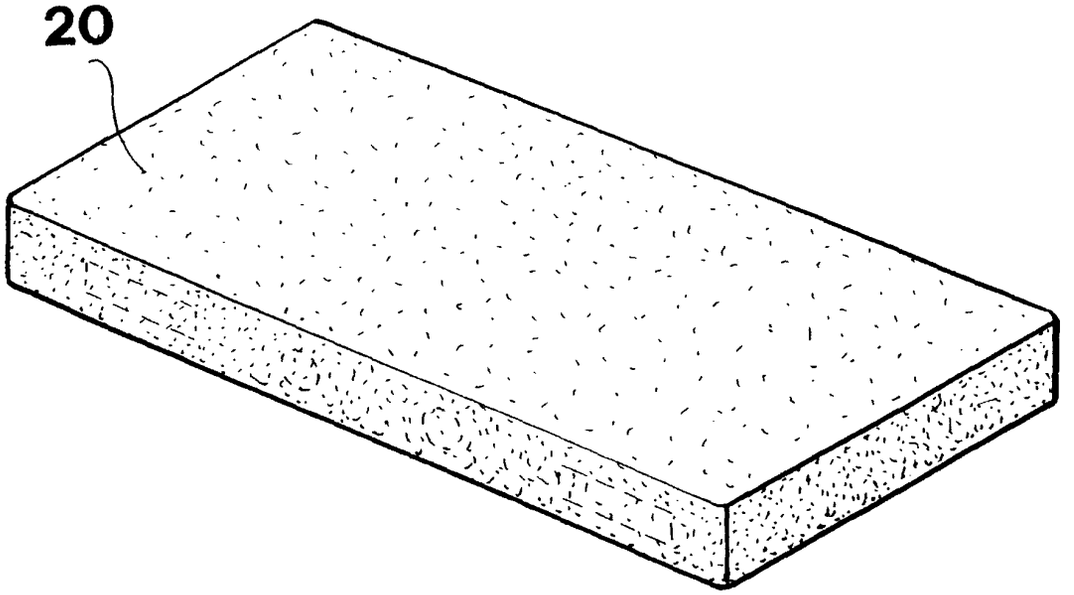

FIG. 1

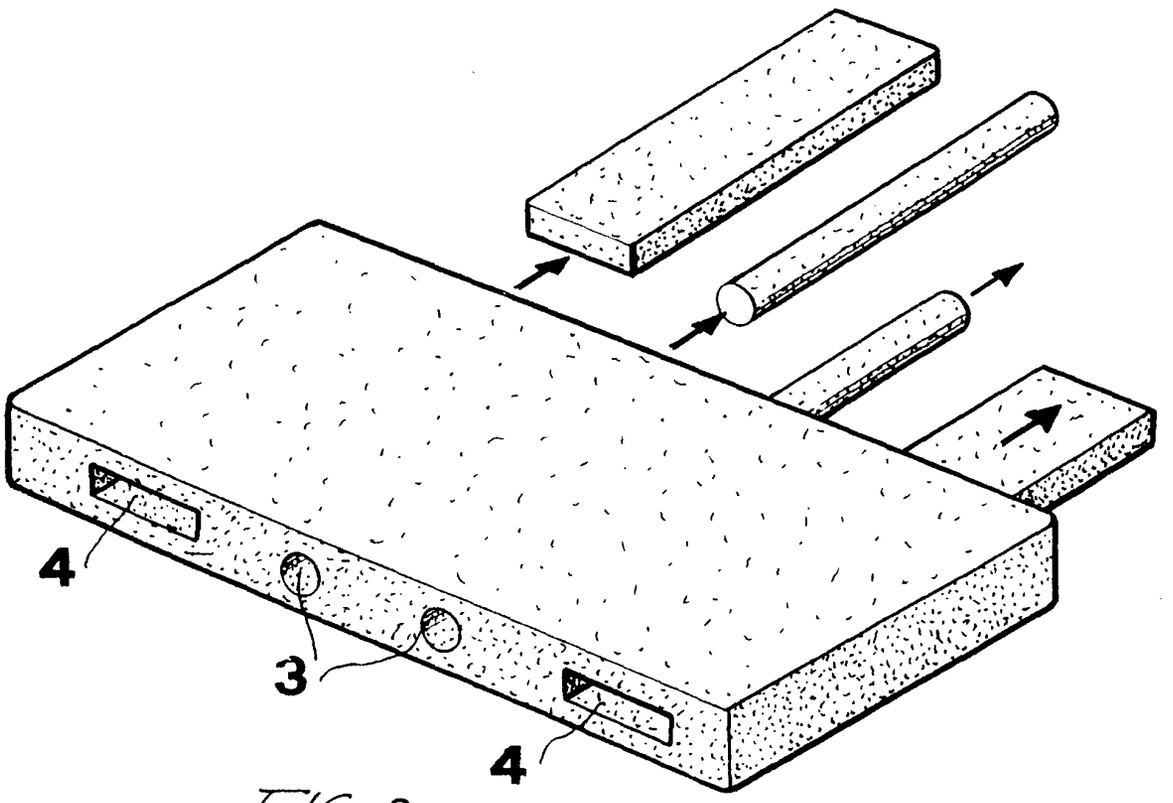

FIG. 2

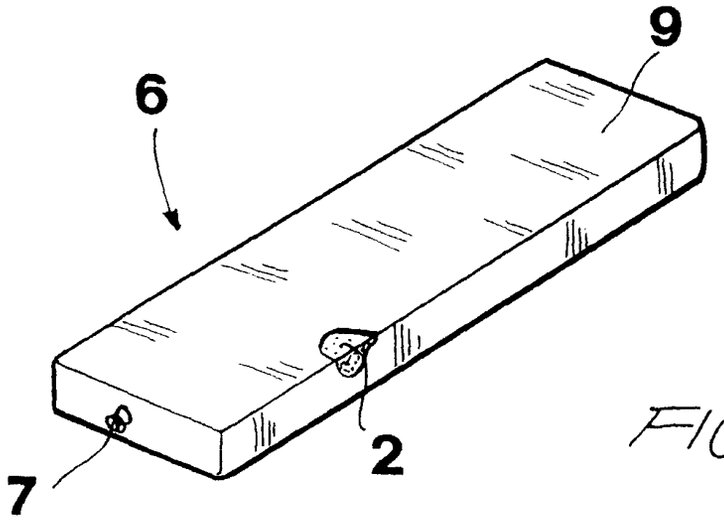

FIG. 3

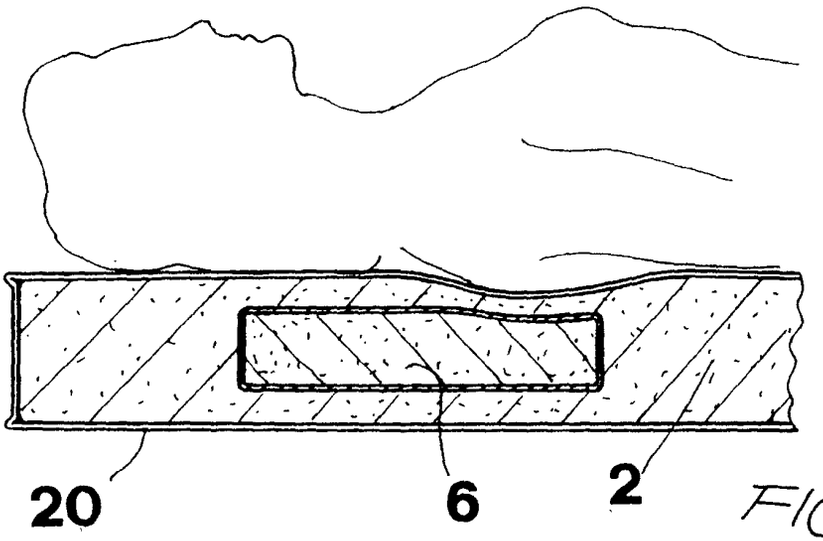

FIG. 4

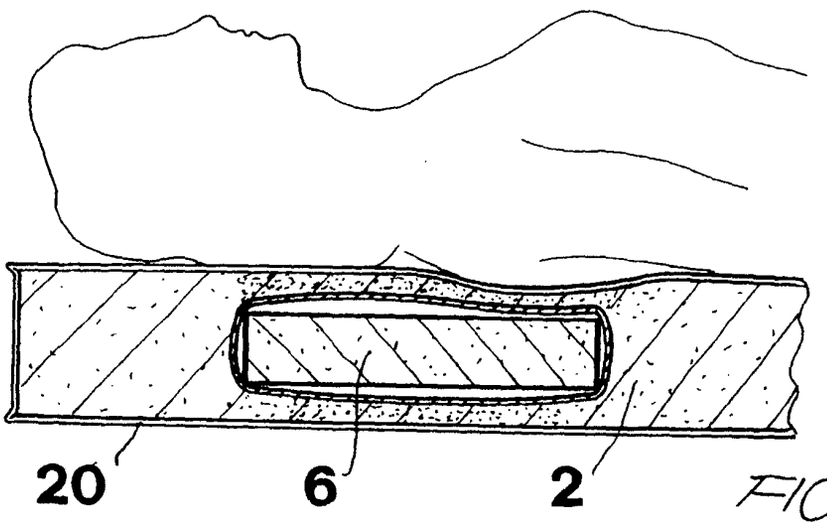

FIG. 5

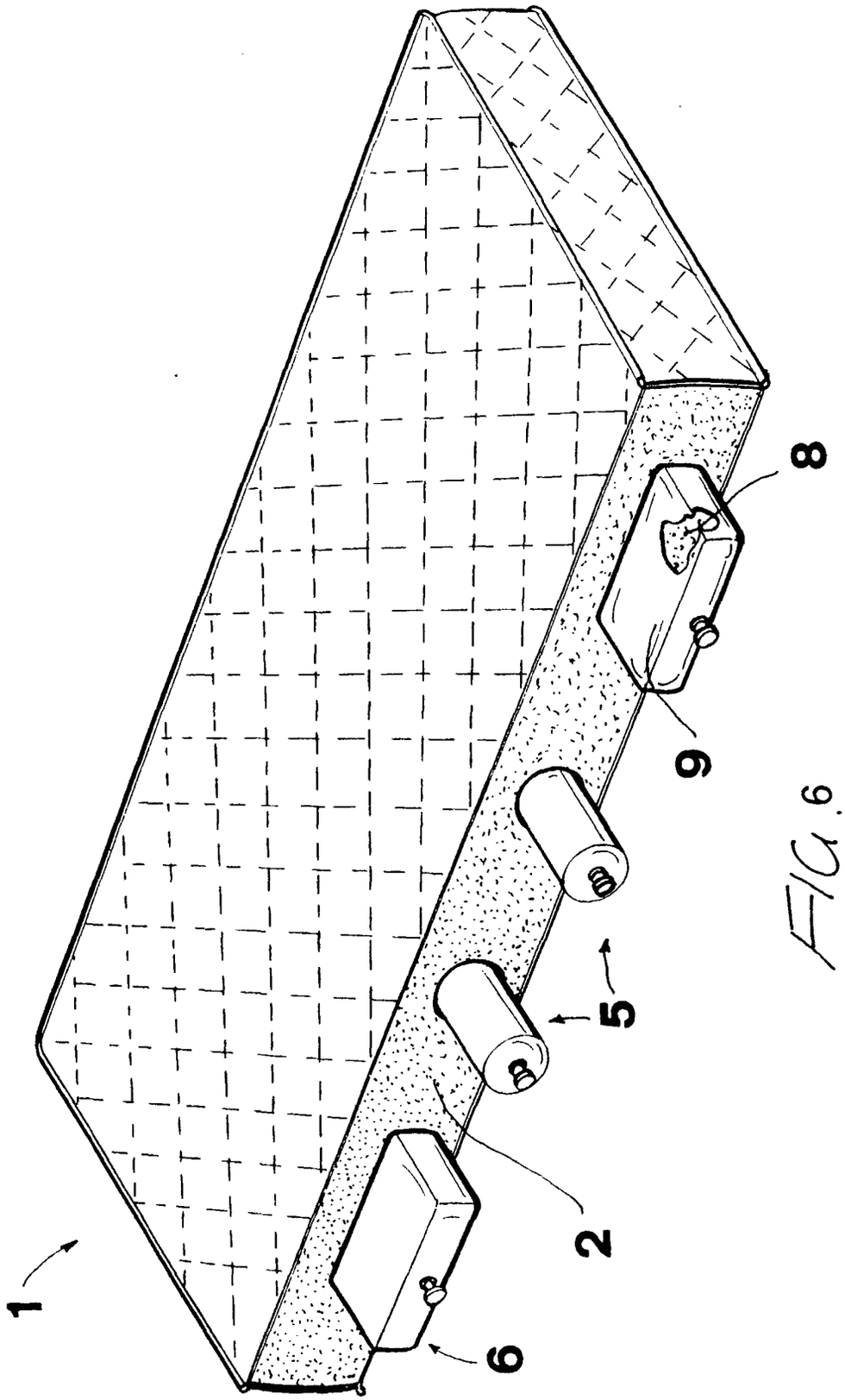

FIG. 6

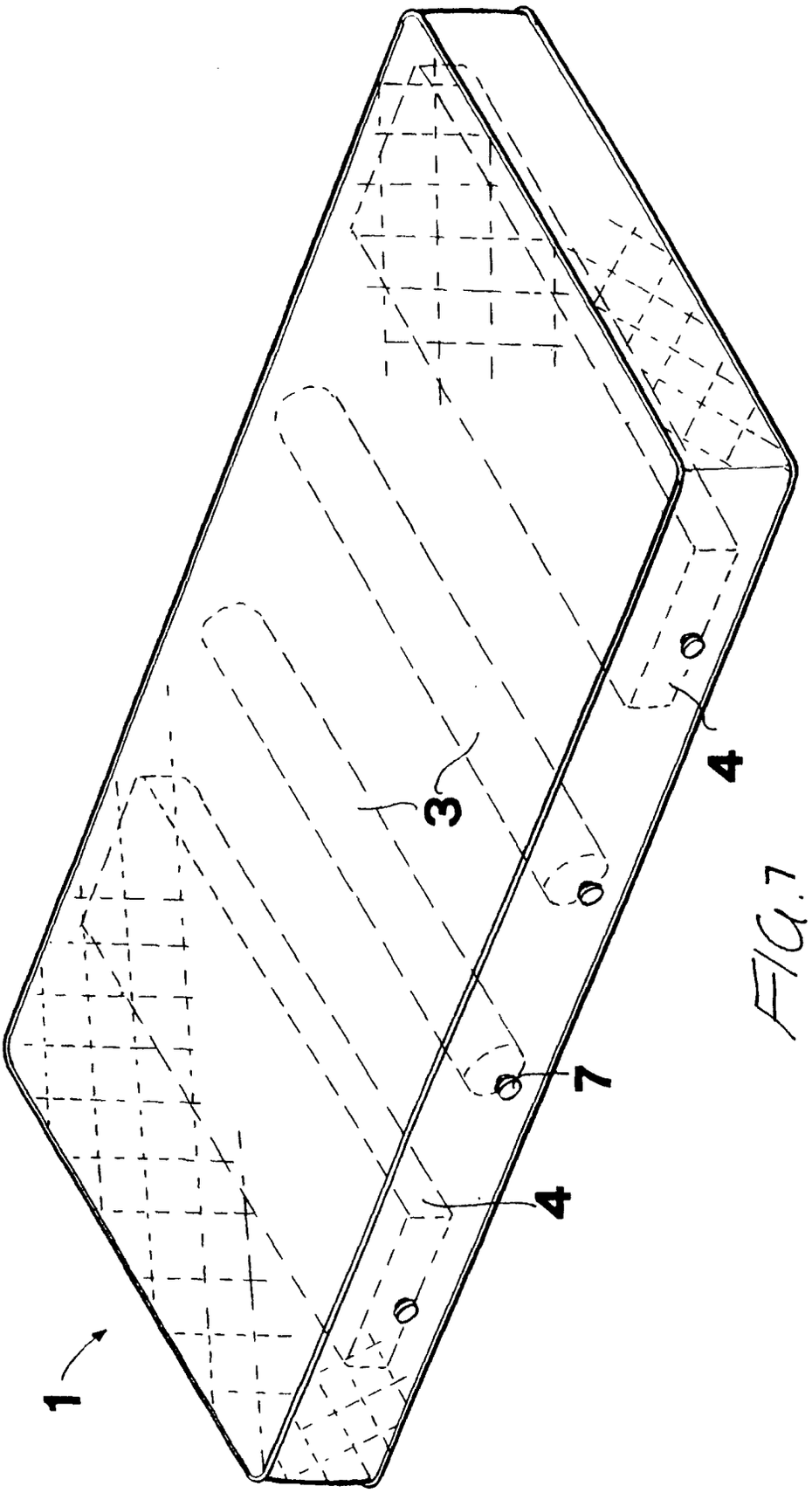

FIG.1

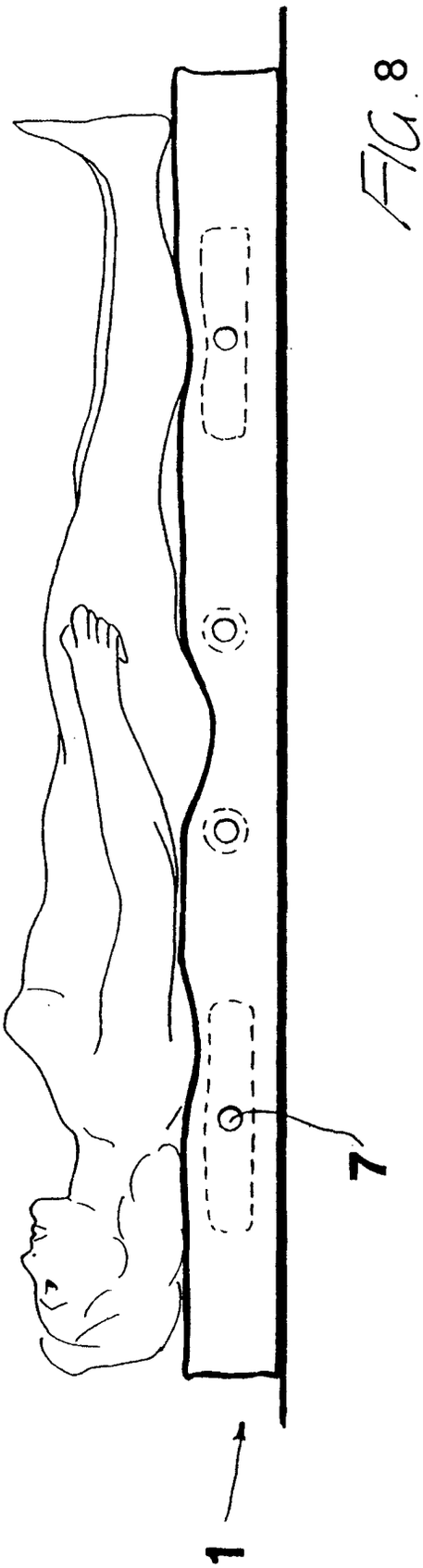

FIG. 8

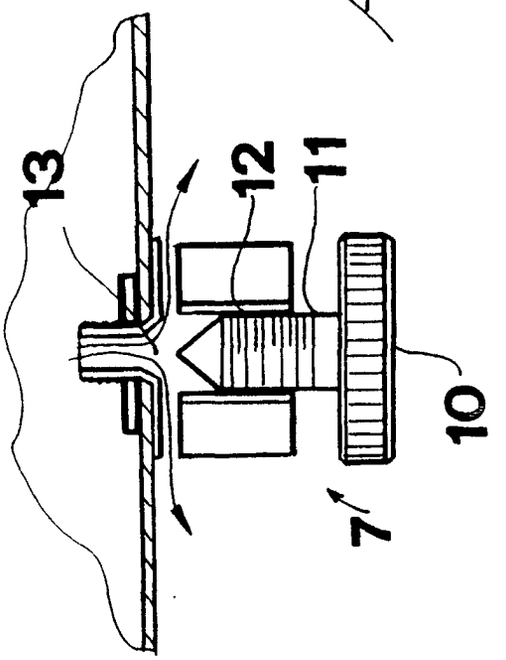

FIG. 9