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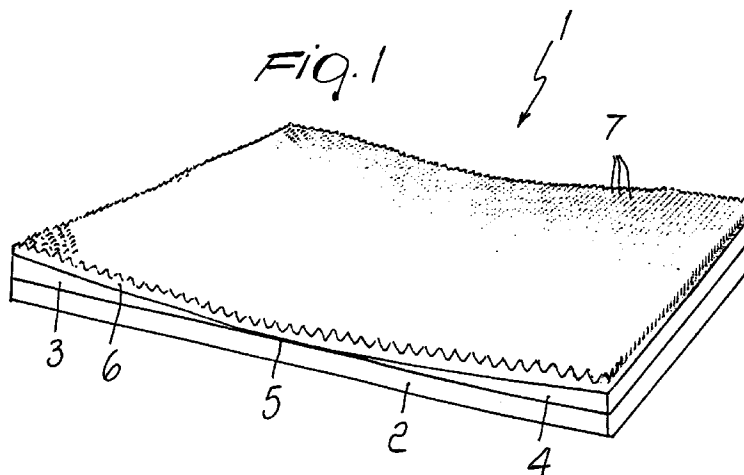
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(54) Mattress with superimposed layers of foamed and flexible plastic material

(57) A mattress (1) with superimposed layers of foamed and flexible plastic material, which is characterized in that it comprises a first layer (2) of uniform thickness with which two wedge-shaped elements (3,4) are associated; the wedge-shaped elements have a thickness which increases from the center towards the opposite ends of the mattress and form a hollow, the first

layer (2) and the wedge-shaped elements (3,4) being made of plastic material having softness and elasticity characteristics; the mattress is further characterized by a second layer (6) of uniform thickness, arranged above the hollow and constituted by a foamed and flexible plastic material having low memory.



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Description

The present invention relates to a mattress with superimposed layers of foamed and flexible plastic material, devised substantially to allow the spinal column to be arranged according to a physiological and natural posture, without neglecting other factors which, in view of the time spent in bed by a person (i.e., a little less than one third of an average lifespan), can have harmful effects on the body.

The technical aim of the present invention is therefore to provide a mattress which allows comfortable sleep, avoids the onset of some postural disorders, and helps to neutralize others, such as respiratory insufficiency, heart failure, or hiatus hernia.

Within the scope of this aim, an object of the present invention is to provide a mattress which also allows to combat problems caused by fatigue arising from stress, work, and sport, as well as insomnia caused by pains from arthrosis or rheumatic diseases in general.

This aim and this object are achieved with a mattress with superimposed layers of foamed and flexible plastic material according to the appended claims.

Further characteristics and advantages of the invention will become apparent from the following description of some embodiments thereof, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

figure 1 is a perspective view of a mattress according to the present invention, in a first embodiment; figure 2 is a side view of the mattress shown in figure 1; figure 3 is a perspective view of a mattress according to the invention, in a second embodiment; figures 4 to 9 are views of the operating sequence for assembling the mattress shown in figure 3.

With reference to figure 1, the mattress is generally designated by the reference numeral 1 and in the illustrated embodiment it is of the single type, i.e., for a single bed.

It is composed of a lower layer, which consists of a rectangular panel 2 made of foamed plastic material with elasticity and softness characteristics, for example an elastic copolymer of foamed polyurethanes.

Two wedge-shaped elements 3 and 4 are arranged above the panel 2, at its opposite ends, and are made of the same material as the panel 2.

The wedge-shaped elements 3 and 4 taper towards the central part of the panel 2, whereat they form a region 5, and form, together with said panel 2, a hollow which is arranged transversely with respect to the mattress. The panel 2 and the wedge-shaped elements 3 and 4 can be formed monolithically.

A layer 6 of flexible foamed plastic material, preferably of the type commercially known by the name Synergel and marketed by the Applicant, is applied above

the wedge-shaped elements 3 and 4 and the central region 5.

Said material is a copolymer of polyethers, polyesters, and flexible silicone with an open-cell structure, characterized by low memory, i.e., having slow compression and slow elastic return.

The upper surface of the layer 6 has uniformly distributed pyramid-like studs 7.

The mattress is conveniently covered by a cover, not shown, in which the studs 7 form an airspace which facilitates air circulation.

It is evident that the mattress 1 has a surface which is raised at the opposite ends and causes the user to have the upper part of his trunk and his legs in a raised condition with respect to the central part. This position has beneficial effects for people suffering from heart failure and respiratory insufficiency. Moreover, the lifting of the upper part of the body avoids gastroesophageal regurgitation in people suffering from hiatus hernia and in pregnant women.

The fact is particularly appreciated that the mattress is capable of offering maximum resting comfort, since the body of the user, laid on the mattress, finds a perfect placement for each bony prominence, distributing the weights over the entire surface.

The architecture of the mattress, with raised regions at the opposite ends, prevents the compression of localized regions of the body and prevents said body from assuming a posture which facilitates the onset of pain caused by arthrosis and rheumatic diseases, so as to combat heaviness and swelling of the legs, also allowing better ventilation and less work for the cardiac muscle.

The described invention is susceptible of numerous modifications and variations, all of which are within the scope of the same inventive concept.

Figures 3 to 9 illustrate an embodiment which is advantageous for the production of double-bed mattresses, the dimensions whereof can lead to bulk and transport problems.

In the embodiment of figures 3 to 9, the mattress comprises a lower layer which is formed by four quadrangular elements 8, 9, 10, and 11 having a wedge-like thickness and arranged mutually opposite in pairs, so as to form a hollow which lies transversely to the mattress. A second layer, composed of two panels 12 and 13 of uniform height, is applied above the elements 8-11. The elements 8-11 and the panels 12, 13 are made of foamed plastic material of the type used previously to form the panels 2 and the elements 3, 4. Each panel 12 or 13 is arranged on the respective pair of panels 8, 9 or 10, 11 which forms said inclined plane. Finally, two layers 14, 15 of plastic and flexible material, such as Synergel, provided with surface studs 16, 17, are arranged on the panels 12, 13.

The layers 14, 15 are arranged so as to cross the respective panels 12, 13 and provide a sort of binding which allows the mattress to maintain its shape when it is covered by the cover 18.

In practice, the parts 8-15 that form the mattress can be separate from each other and can be composed according to the sequence shown in figures 4-9 directly on the base 19 of the bed. The modular nature of the mattress is a considerable advantage during transport and storage operations. Moreover, the disassembly of the mattress into smaller parts facilitates washing and sterilization treatments as well as treatments against the growth of germs, fungi, molds, and acarids.

Of course, especially for single mattresses, it is possible to join the individual parts by interposing adapted adhesives.

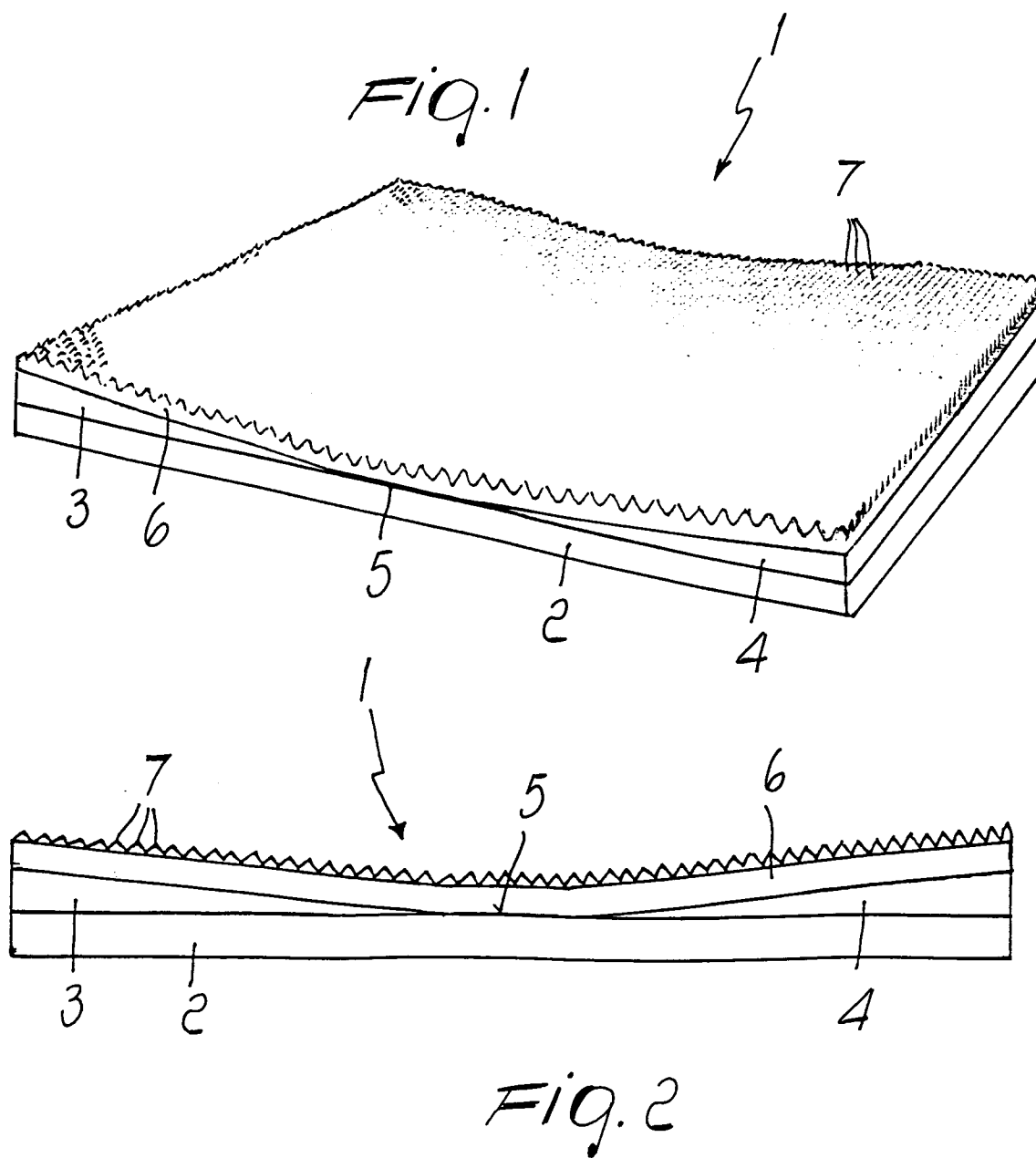
Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

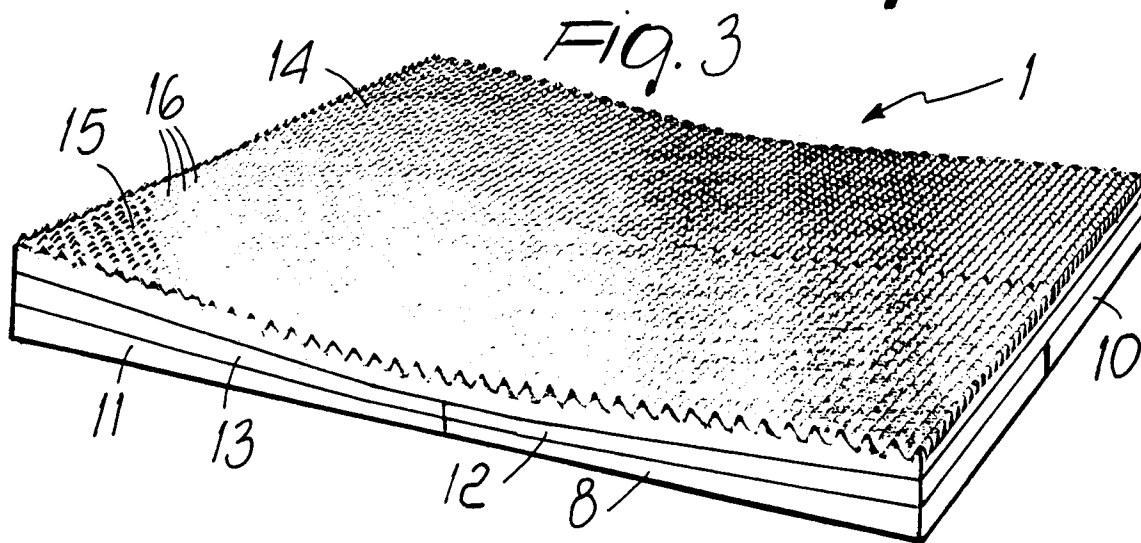
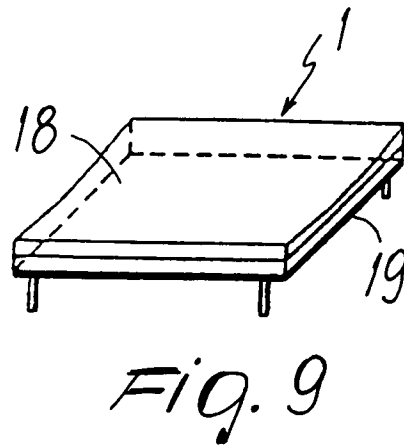
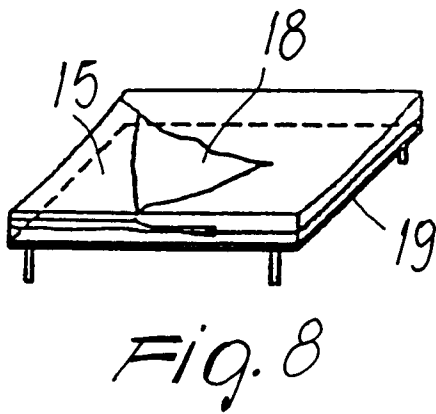
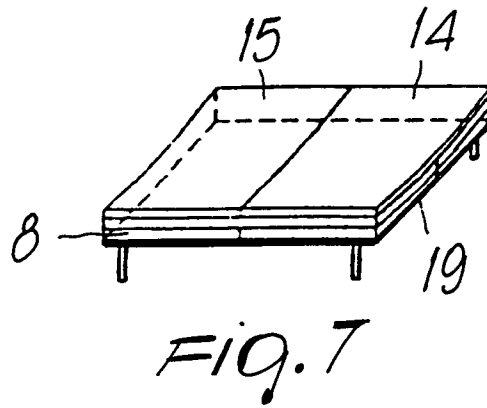
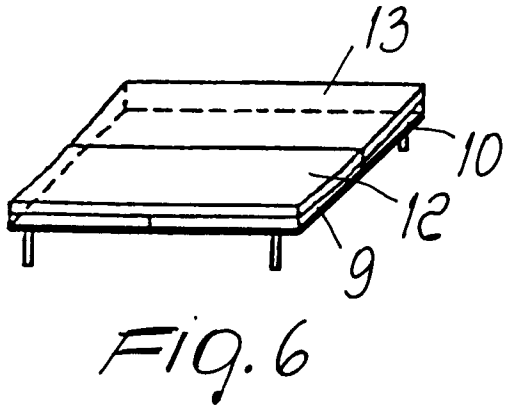
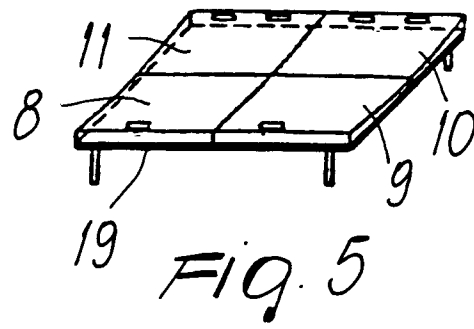
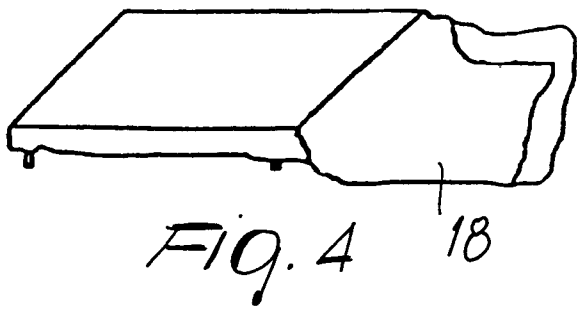
Claims

1. Mattress with superimposed layers of foamed and flexible plastic material, characterized by a first lower layer (2) which comprises two wedge-shaped elements (3, 4) having a thickness which increases from the center towards the opposite ends of the mattress (1) and form a hollow, said first layer (2) and said wedge-shaped elements (3, 4) being made of plastic material having softness and elasticity characteristics, and further characterized by a second layer (6) of uniform thickness, arranged above said hollow and said wedge-shaped elements (3, 4) and constituted by a foamed and flexible plastic material having low memory.
2. Mattress according to claim 1, characterized in that said wedge-shaped elements (3, 4) form a flat central region (5).
3. Mattress according to claim 1 or 2, characterized in that said second layer (6) has surface studs (7).
4. Mattress according to one of the preceding claims, characterized in that said first lower layer is provided by means of four quadrangular elements (8, 9, 10, 11) which have a wedge-like thickness and are arranged mutually opposite in pairs so as to form a transverse hollow, a pair of intermediate panels (12, 13) and a pair of upper panels (14, 15) having uniform thickness being arranged above said wedge-shaped elements, said wedge-shaped elements (8, 9, 10, 11) and said intermediate panels (12, 13) being made of foamed plastic material having softness and elasticity characteristics, said upper panels (14, 15) being made of a foamed and flexible plastic material having low memory.
5. Mattress according to one of claims 1 to 4, charac-

terized in that said material with low memory is a material known commercially by the name Synergel and marketed by the Applicant.

6. Mattress according to one of the preceding claims, characterized in that it is covered by a cover (18).







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EUROPEAN SEARCH REPORT

Application Number
EP 96 11 9176

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
Y	FR 2 047 088 A (OTTO BOCK)	1-3	A47C1/00
A	* the whole document *	4,6	
Y	DE 38 05 980 A (CARBET BOUTIQUE)	1-3	
A	* the whole document *	5,6	
A	FR 2 002 306 A (FABRICACION ESPANOLA DE COLCHONES ANATOMICOS)		
A	US 3 885 258 A (REGAN)		
A	GB 2 274 054 A (DUDLEY WELCH)		
A	CA 1 327 243 A (EVANS)		
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.6) A47C
Place of search THE HAGUE		Date of completion of the search 20 March 1997	Examiner VandeVondele, J
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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