



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:  
**22.05.2002 Bulletin 2002/21**

(51) Int Cl.7: **A47C 21/06**, A47C 21/04,  
A47G 9/02

(21) Application number: **01830327.1**

(22) Date of filing: **22.05.2001**

(84) Designated Contracting States:  
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU**  
**MC NL PT SE TR**  
Designated Extension States:  
**AL LT LV MK RO SI**

(71) Applicant: **Viviani, Giovancamillo**  
**84091 Battipaglia (SA) (IT)**

(72) Inventor: **Viviani, Giovancamillo**  
**84091 Battipaglia (SA) (IT)**

(30) Priority: **20.11.2000 IT SA200016 U**

(54) **Outside covering for mattress with the perimetric lateral surface provided with holes for the passage of air to its inside**

(57) Outside covering for mattress characterized by a monolithic grid (2) constituted by a succession of cylindrical elements (3) along their longitudinal development, and by transversal elements (4) of small thickness separated by perforations (5) of irregular perimetric

form. The lateral surfaces conformed to grid (2) create with bodily movements on the mattress an effect of self-moving ventilation; that is create a reinforced ventilation (bellows effect) with a continuous air replacement inside the mattress with beneficial hygienic effects and air-condition.

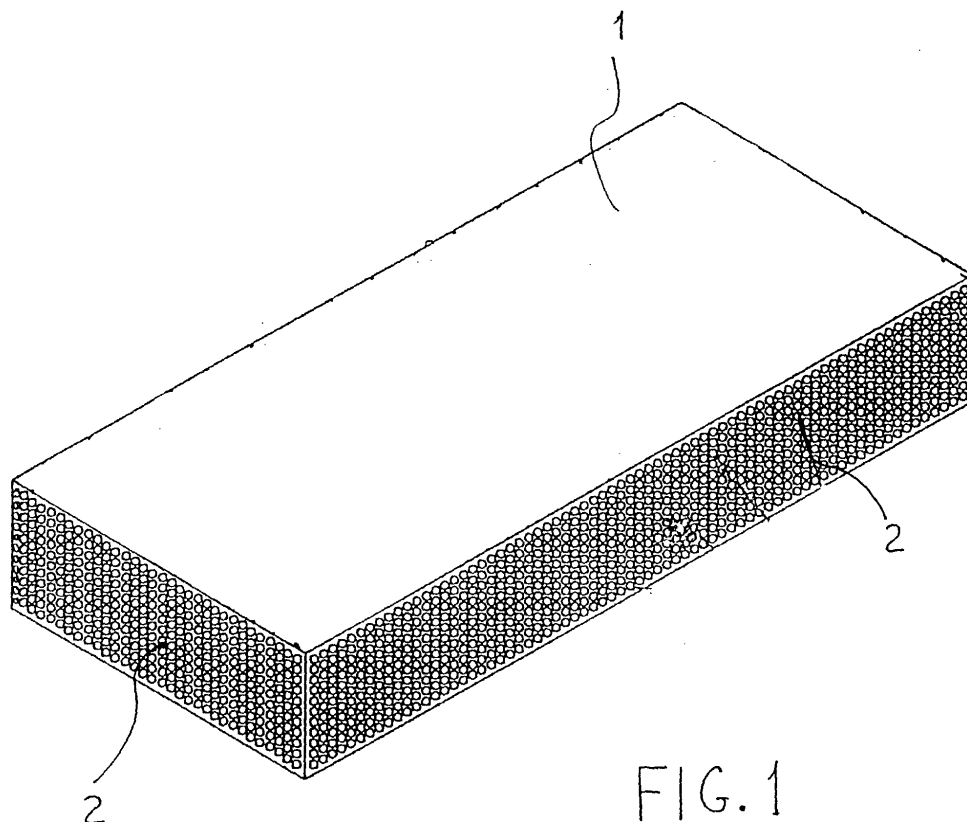


FIG. 1

## Description

### Technical field

**[0001]** Object of the present invention are the perimetric lateral surfaces of the outside covering of a mattress, realized in material polymeric or a coupled polymeric tissue and provided of holes any form for the passage of air to its inside.

### State of the technique

**[0002]** How is well-known the body of humans beings transpires continuously water and in the time of a night, during the sleep, nearly a litre third is possible to deposit in a mattress creating an ideal habitat for bacteria, becomes mouldes and acari, enemies of the hygiene and of our health.

**[0003]** Has who experience in this field knows well that the constructed mattress according to the actual technique are much sensitive to the dampness and doesn't succeed to expel the dampness that absorbs from the perspiration of our body for the presence to the their inside from constituted stuffing by a fibre of very thick heap that doesn't allow an optimal circulation of the air and because they deprive of opening adapts and sufficient to an optimal replacement air to the their inside.

**[0004]** Without a ventilation sufficient, dust and sweat causes dampness stagnations and bad smells that mine the confort and the hygiene of the couch.

**[0005]** In the spring mattress at present marketed the passage of air is inadequate and is entrusted usually to few side holes integrated in the perimetric band. The air that enters from these holes across exclusively the suspension but doesn't reach all the ravines of the mattress for the presence of insulating layers between the springs.

**[0006]** A first solution to this problem has been given from the Italian patent n° 235205 on behalf of the same applicant but the tied up shrewdness to the perimetric band in tissue was not such from guaranteeing suitable flow of air within the inside layers of the mattress though had been foreseed, inside the mattress, a disposition of the layers that favored the circulation of the air.

**[0007]** An other important problem tied to the previous technique is the impossibility, in the practice, of guaranteeing during the summer that the mattress is fresh and doesn't accumulate a lot of heat, and this is not possible without a suitable passage of air to the inside layers the mattress.

### Aims and advantages of the invention

**[0008]** Aim of the present invention is that to obviate round to the inconveniences of the previous technique with the gets ready a mattress that realize with extremely simple means, essentially a perimetric band realized

in material polymeric or a coupled polymeric-tissue and holes provision in number and of any form, those functional and qualitative characteristics in mode from is possible to answer efficaciously to the request demand, and is able to offer the more wide of guarantee of confort, resistance, and safety in the use.

**[0009]** Other aim of the present invention is realize a device, in agreement with preceding aims, that allows to the mattress to which goes applied, of be not subject to any assault on behalf of the dampness of the outside environment, keeping intact in the time its functionality.

**[0010]** Other aim of the present invention in agreement with preceding aims is to realize a device, that is possible to guarantee during the summer that the mattress is fresh and doesn't accumulate a lot of heat.

**[0011]** The aims, the assignments, and other that will be better pointed out later are reached by an outside covering for mattress with the perimetric lateral surfaces realized in flexible polymeric material in rubber latex or a coupled polymeric tissue provision of holes of number and forms any for the passage of air to its inside.

### Description of the drawings and way to realize the invention.

**[0012]** These and other characteristics as well as advantages will result evident from the following description and from the enclosed supplied drawings to only indicative purposes and not limitative in which

The fig. 1 shows in a perspective sight the mattress with the lateral surfaces provisions of holes .

The fig. 2 schematically shows a sight in plant of the conformation of a portion of the surface of the lateral band according the invention present.

The fig. 3 schematically shows a section according the invention present.

**[0013]** The illustrated invention in the drawings, in a first form realization favourite, included the perimetric lateral surface of the mattress (1) constituted by a polyurethane monolithic material strengthened with nylon, flexible and soft as enough. More particularly the lateral surfaces are constituted by a monolithic grid (2) constituted by a succession of cylindrical elements (3) to elliptic section united, long the theirs longitudinal development, and by transversal elements (4) also to elliptic section of small thickness separated by perforations (5) of irregular form. This material, so conformed, is not hardened and it is little subject to ageing to fatigue, is possible to easily support crushing actions, bending and torsions maintaining unchanged its qualities in the time; it reacts to the pressure and to the bending as our skin maintaining and restoring its form, and it is non-toxic.

**[0014]** In other form of realization of the present invention the longitudinal elements of the grid (2) are possible to have an any section for example circular or polygonal so too the transversal elements are possible to

have division of any form.

**[0015]** In other form of realization of the present invention the used materials for the grid is possible to be the latex of natural rubber or artificial rubber or a polymer of other nature or a coupled tissue-polymeric.

**[0016]** With the presence of the perforated band (2) according to the invention present, the dispersion of the bodily heat that is accumulated in the mattress is facilitated by bodily movements on the mattress that creates a reinforced ventilation ( bellows effect ) with a continuous air replacement inside the mattress with benefits hygienic effects and air-condition.

**[0017]** The invention present results have the resistance characteristics necessary to front of the solicitations that happen during the utilization normal and therefore is possible to offer the more wide reliability of guarantee and safety in the use; result easily obtainable using materials of common availability in commerce therefore is competitive from the economic point of view and, not last, it is competitive from the functional and hygienic point of view because allows a continuous circulation of the air permitted by the exclusive system of holes that facilitate the passage of air in all layers of the mattress; it dispersed the bodily heat, prevents the stagnation of the dampness, principal cause of a lot of problems to the health and eliminates unpleasant smells.

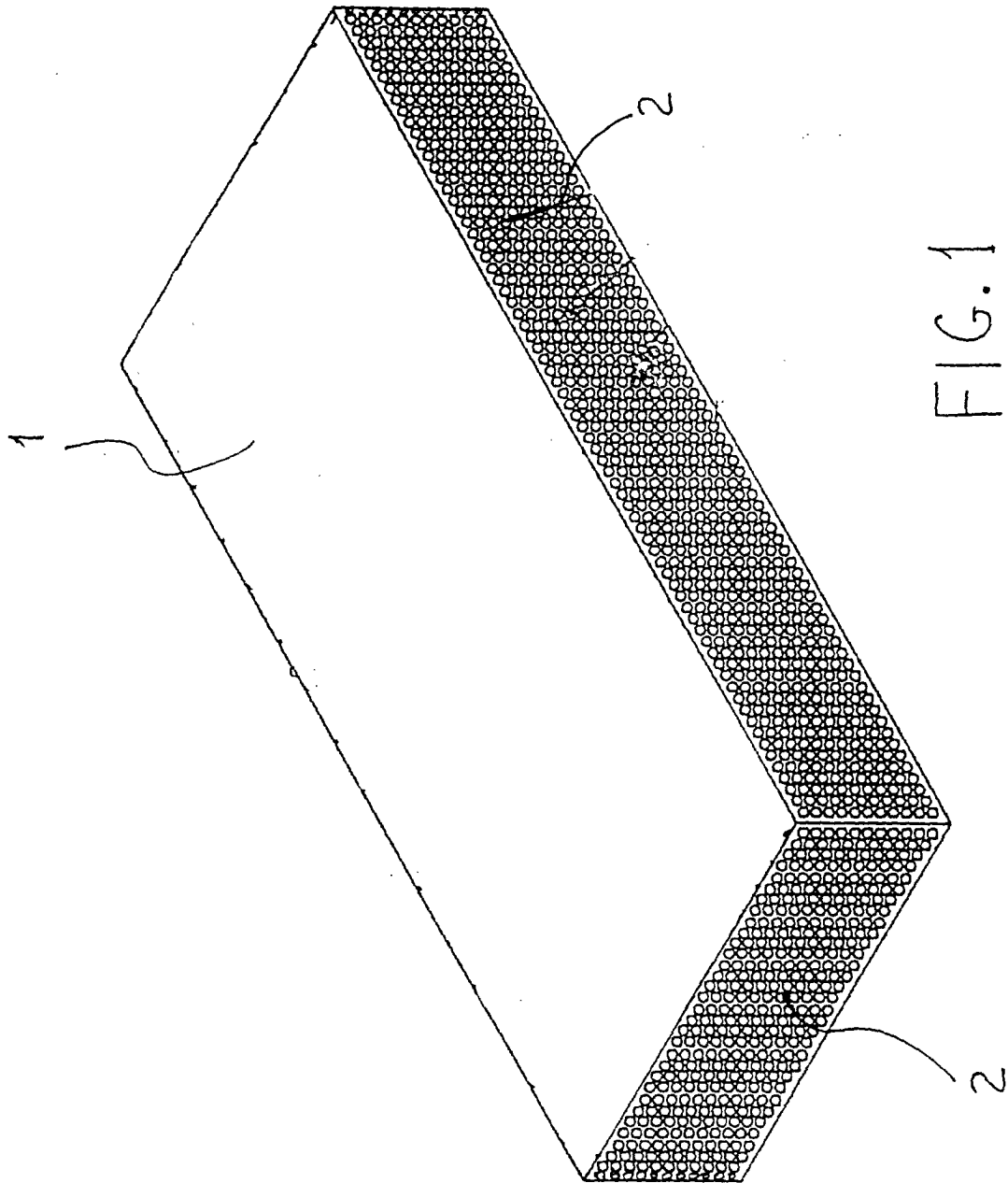
**[0018]** From when previously described and illustrated is possible to see that the invention reaches provost reasons.

constituted by a polyurethane strengthened with nylon, flexible and soft.

5. Outside covering for mattress as ito claim 1 ) and 2 ) and 3 ) **characterized by** the fact that the material used for the formation of the grid (2) is the latex of natural rubber or artificial rubber.
6. Outside covering for mattress as if to claim 1 ) and 2 ) and 3 ) **characterized by** the fact that the material used for the formation of the grid (2) is a coupled tissue-polymeric.
7. Outside covering for mattress as if to claim 1 ) and 2 ) and 3 ) **characterized by** the fact that the lateral surfaces conformed to grid (2), they create with bodily movements on the mattress an effect of self-moving ventilation that is create a reinforced ventilation (bellows effect) with a continuous air replacement inside the mattress with benefits hygienic effects and air-condition.

## Claims

1. Outside covering for mattress **characterized by** the fact that its perimetric lateral surface is constituted by a polymeric monolithic material strengthened with fibers conformed to grid (2) form in mode from realizing slots or holes for the passage of air to its inside.
2. Outside covering for mattress as to claim 1) **characterized by** the fact that the monolithic grid (2) is constituted by a succession, of cylindrical element (3) to elliptic section united, long the theirs longitudinal development, and by transversal element (4) also to elliptic section of small thickness separated by perforations (5) of irregular perimetric form.
3. Outside covering for mattress as to claim 1 ) and 2 ) **characterized by** the fact the longitudinal elements of the grid (2) are possible to have a circular section and/or polygonal so too the transversal elements are possible to have a section of circular form and/or elliptic.
4. Outside covering for mattress as to claim 1 ) and 2 ) and 3 ) **characterized by** the fact that the material used for the formation of the grid (2) is specifically



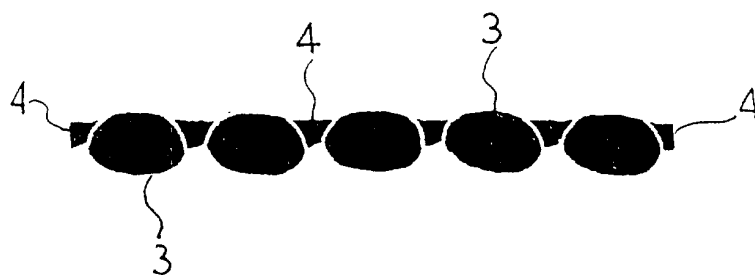
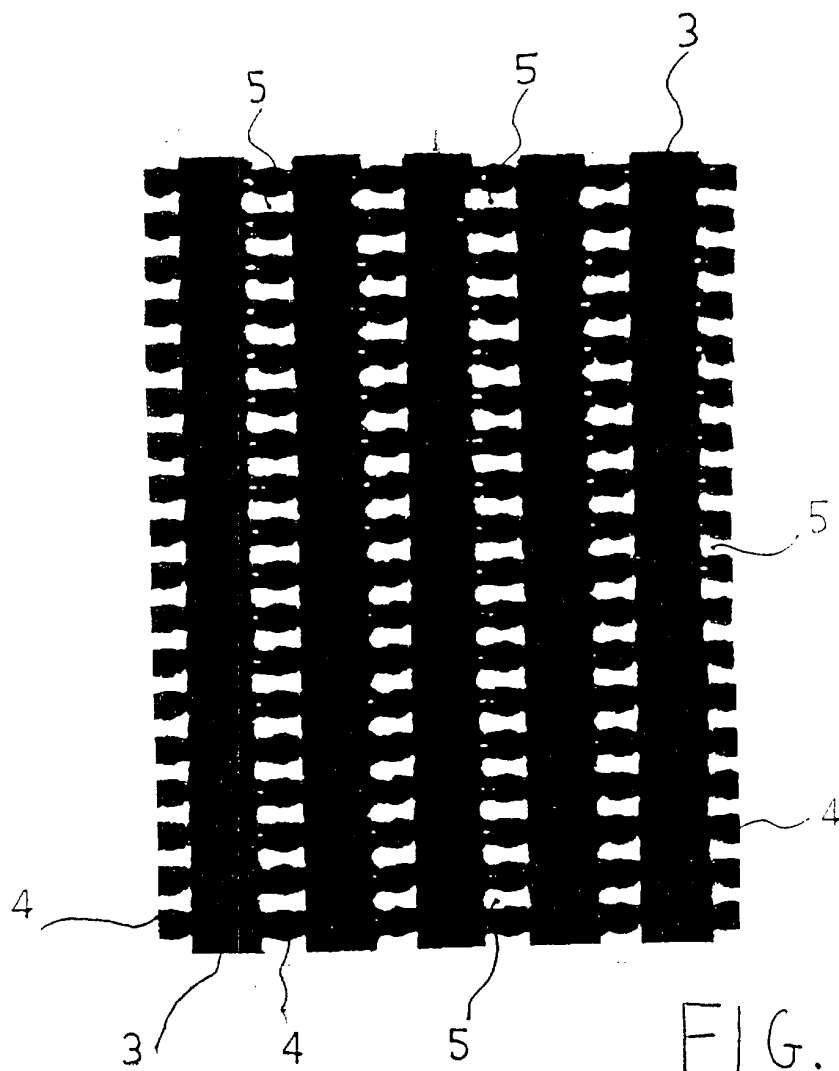


FIG. 3



European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number  
EP 01 83 0327

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.7)
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X	US 5 950 264 A (WYNER DANIEL M ET AL) 14 September 1999 (1999-09-14) * column 3, line 12 - line 13 *	1-8	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			A47C A47G
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		29 January 2002	Joosting, T
CATEGORY OF CITED DOCUMENTS		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	
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			

EPO FORM 1503-03-92 (P04001)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
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EP 01 83 0327

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on  
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