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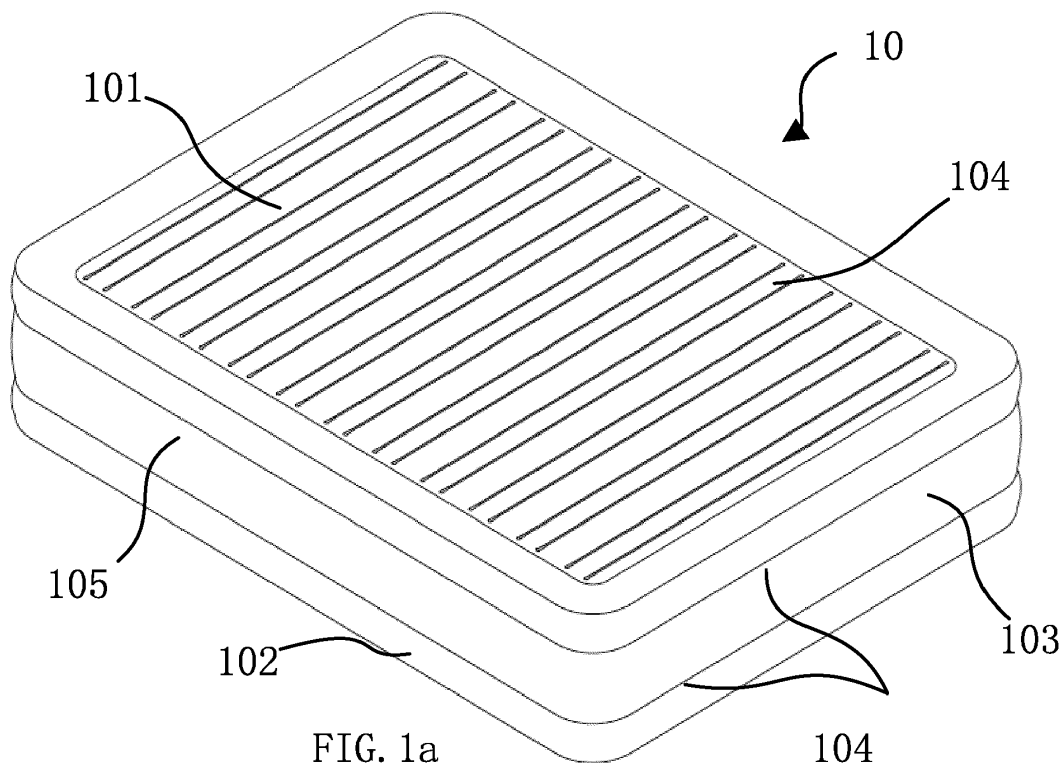
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(54) INFLATABLE MATTRESS

(57) An inflatable mattress having an upper layer structure (101), an inflatable middle layer (105) and a bottom layer structure (102). The upper layer structure (101) comprises a basic fabric layer (201) and a covering layer (203). The basic fabric layer (201) is woven by a plurality of fabric fibers, wherein the number of weft and warp fibers per square inch is higher than 100. The cov-

ering layer (203) and the basic fabric layer (201) stick to each other by glues (202), wherein the weight of the glues are higher than 20 grams per square yard and lower than 80 grams per square yard. The basic fabric layer (201) orients toward the direction of the coverage layer (203), pressing and embedding into the covering layer (203) and constituting a fabric surface laminating material.

**FIG. 1a****EP 3 245 905 A1**

Description

Field of the Invention

[0001] The present invention is related to a mattress, and more particularly related to an inflatable mattress.

Background

[0002] The human history of invention of beds is long, nevertheless, new techniques have still been constantly in development. After all, the ratio of time spent on sleeping for human beings is very large. In addition, there are many different kinds of mattresses, such as spring beds, memory mattresses, tatamis, etc. Another different kind of mattresses further includes water beds, and inflatable mattresses.

[0003] For inflatable mattresses, by inflation in interior inflatable spaces, certain predetermined shapes can be maintained for mattresses, so as to provide experiences similar to using mattresses for users. Since inflatable mattresses can reduce volumes greatly by deflating, thus, one can have considerable conveniences on storages or deliveries. In addition, since relatively less materials are required for inflatable mattresses, there are stronger advantages with respect to conventional mattresses on manufacturing costs.

[0004] Nevertheless, conventional inflatable mattresses still pay more attention conveniences, there are still considerable room for improvements required for overall experiences of using.

Summary of the Invention

[0005] According to the first embodiment of the invention, there is an inflatable mattress. The inflatable mattress has an upper layer structure, an inflatable middle layer structure and a bottom layer structure.

[0006] The upper layer structure comprises a basic fabric layer and a covering layer. The basic fabric layer is woven by a plurality of fabric fibers. the number of weft and warp fibers per square inch are higher than 100. The covering layer and the basic fabric layer stick to each other by glues, wherein the weight of the glues is higher than 20 grams per square yard and lower than 80 grams per square yard. The basic fabric layer orients toward the direction of the coverage layer, pressing and embedding into the covering layer and constituting a fabric surface laminating material.

[0007] The so-called pressing and embedding the basic fabric layer into the covering layer is, by pressing the basic fabric layer and the covering layer, the uneven surface of the basic fabric layer having fibers directly or indirectly pressing the covering layer via glues, so that the surface of the covering layer generating a certain degree of concavity, and thus composing a more stable pressing result.

[0008] A first surface of the inflatable middle layer is

fixedly connected to the upper layer structure. Also, the inflatable middle layer comprises at least one air chamber configured to provide a predetermined shape after expansion during the inflation. The outer side of the inflatable middle layer comprises the fabric surface laminating materials.

[0009] A second surface of the inflatable middle layer is fixedly connected to the bottom layer structure, and the bottom layer structure comprises the fabric surface laminating materials.

[0010] The portions orienting outward of the upper layer structure, the inflatable middle layer and the bottom layer structure can be all covered with the fabric surface laminating materials.

[0011] In one condition, the outer surfaces of the upper layer structure, the inflatable middle layer and the bottom layer structure are all covered with the fabric surface laminating materials.

[0012] The inflatable middle layer can have at least one drawstring. the drawstring connects respectively to the upper layer structure and the bottom layer structure, so as to ensure the predetermined shape of the inflatable mattress after expansion during the inflation.

[0013] The upper layer structure can comprise a top surface portion. The top surface portion covers more than 70% of the area of the upper layer structure facing up, and the top surface portion can connect to the bottom layer structure by a plurality of drawstrings, and the drawstrings are Y-type drawstrings or round hole drawstrings.

[0014] The fabric fiber of the basic fabric layer can comprise polyester materials, and the weight per unit length are different for the fabric fiber in weft direction and the fabric fiber in warp direction.

[0015] The fabric fiber of the basic fabric layer can have number of fibers of more than 50 and less than 300 per square inch in weft direction and warp directions. For example, the basic fabric layer can be constituted by polyester fibers of 75Dx75D or 110Dx80D. The "D" means the standard unit of the wire diameter of 1 gram per 9 kilometers used in the industry.

[0016] The materials of the covering layer can include PVC material. The glues can withstand drawing forces larger than 20 newtons per 3 centimeters. Alternatively, the glues can withstand drawing forces of more than 10 newtons and less than 50 newtons per 3 centimeters. The material of the glues can be PU glues with viscosity between 350000 CPS to 100000 CPS.

[0017] The thickness of the covering layer can be between 0.15mm to 0.9mm. The thickness of embedment of the basic fabric layer into the covering layer can be between 0.06 mm to 0.1mm.

[0018] The affordability for tensile strength of the fabric surface laminating materials can be larger than 200 newtons per 2.54 centimeters, the affordability for tear strength of the fabric surface laminating material can be larger than 4 newtons, and the affordability for peel strength can be larger than 40 newtons per 3 centimeters.

[0019] The covering layer can be doped with an flame

retardant material, so that an ignition point for the fabric surface laminating materials can be larger than 350 degrees Celsius.

[0020] The covering layer can have embossments. The embossments not only increase strengths of materials and reduce the manufacturing costs, but also cause the covering layer to expand easier during treating processes.

[0021] The embossments of the covering layer can have a plurality of protruding embossment stripes cross-distributed on the surface of the covering layer. For example, the plurality of protruding embossment stripes constitute a plurality of hexagonal honeycomb structures. In addition, a plurality of protruding embossment blocks can also be distributed on interspace areas separated out by the protruding embossment stripes.

[0022] The embossments can be distributed on one side or two sides of the covering layer.

[0023] The inflatable middle layer can have a surrounding sheet and a plurality of surrounding side drawstrings. The surrounding side drawstrings are welded with the surrounding sheet to configured to a multi-layer structure in the inflatable middle layer.

[0024] According to another embodiment of the invention, the embodiment provides a method for manufacturing an inflatable mattress. The inflatable mattress has an upper layer structure, an inflatable middle layer and a bottom layer, and the upper layer structure, the inflatable middle layer and the bottom layer have fabric surface laminating materials. The method includes steps as follows. Flatten a fabric surface material. Glue on, dry, and cool the heated flat-lying fabric surface material. Flatten a PVC material to conduct the preheating. Press and form the fabric surface material and the preheated PVC material into the fabric surface laminating materials by a double-fitting roller. Manufacture the outer surfaces of the upper layer, the inflatable middle layer and the bottom layer by using the fabric surface laminating materials. Use drawstrings to connect the upper layer structure and the bottom layer structure.

[0025] In one embodiment, the basic fabric layer conducts a waterproof treatment. The fabric layer can also be dope with silver materials to prevent the occurrence of stink smell.

[0026] In one embodiment, the inflatable mattress can further include a buckling structure, configured to settle and fix a removable upper layer mattress above the upper layer structure. The removable upper layer mattress is transparent materials, and the removable mattress has a buckle-in structure corresponding to the buckling structures.

[0027] In one embodiment, wherein the removable upper layer mattress can be a thin pad constituted by a nature material.

[0028] In one embodiment, wherein the upper layer structure further comprises a memory buffer layer. The buffer layer is set below the basic fabric layer, configured to memorize the stature of a user, in order to provide a

surface shape more consistent with the stature of a user.

[0029] By combinations of above mentioned embodiments and corresponding characteristics, and according to a plurality of and repeated experiments and tests, the manufacturing method and related techniques herein can manufacture an inflatable mattress which can reduce the costs and at the same time having comfort, thus bringing substantial technical effects.

BRIEF DESCRIPTIONS OF THE DRAWINGS

[0030]

FIG.1a is a schematic drawing of an inflatable mattress according to the first embodiment of the invention.

FIG.1b is a schematic drawing of an inflatable mattress according to the second embodiment of the invention.

FIG.2a is an embodiment of fabric surface laminating materials according to the invention.

FIG.2b is an embodiment of fabric surface laminating materials according to the invention.

FIG.3a is an embodiment of a first kind of embossments of the PVC layer according to the invention.

FIG.3b is an embodiment of a second kind of embossments of the PVC layer according to the invention.

FIG.3c is an embodiment of a third embossments of the PVC layer according to the invention.

FIG.4 is a flow diagram of manufacturing the fabric surface laminating materials according to the invention.

FIG.5a is a schematic drawing of a drawstring of the inflatable mattress according to the invention.

FIG.5b is a schematic drawing of an embodiment of a drawstring of the inflatable mattress according to the invention.

FIG.6 is a schematic drawing of another embodiment of the inflatable mattress according to the invention.

Detailed Description of the Invention

[0031] Refer to FIG.1a. FIG.1a exemplifies an embodiment of an inflatable mattress 10 according to the invention.

[0032] In FIG.1a, the inflatable mattress 10 has an upper layer structure 101, an inflatable middle layer 105 and a bottom layer structure 102. The upper layer structure 101 has a top surface portion, that is the inner rectangular region of the upper layer structure 101 in the FIG.1a. The top surface portion covers more than 70% of the area of the upper layer structure facing up, and the top surface portion can connect to the bottom layer structure 102 by a plurality of Y-type drawstrings

[0033] The upper layer structure 101 can include a basic fabric layer and a covering layer. The basic fabric layer is woven by a plurality of fabric fibers. the number

of weft and warp fibers per square inch are higher than 100. The covering layer and the basic fabric layer stick to each other by glues, wherein the weight of the glues are higher than 20 grams per square yard and lower than 80 grams per square yard. The basic fabric layer orients toward the direction of the coverage layer, pressing and embedding into the covering layer and constituting a fabric surface laminating material.

[0034] The so-called pressing and embedding the basic fabric layer into the covering layer is, by pressing the basic fabric layer and the covering layer, the uneven surface of the basic fabric layer having fibers directly or indirectly pressing the covering layer via glues, so that the surface of the covering layer generating a certain degree of concavity, and thus composing a more stable pressing result.

[0035] The inflatable middle layer 105 can be fixedly connected to the upper layer structure 101 on a first surface of the inflatable middle layer by the drawstrings 106, and fixedly connected to the bottom layer structure 102 on a second surface of the inflatable middle layer.

[0036] The inflatable middle layer 105 can have one or more than one inflation holes which conducting the inflation to the inflatable middle layer 102 by an exterior inflation pump. Another approach is to integrate the inflation pump and the inflatable middle layer 105, providing an inflation power by plug-in or other ways. The inflatable middle layer 105 comprises at least one air chamber configured to provide a predetermined shape after expansion during the inflation. In practical manufacturing, more than two air chambers can be designed, these air chambers maintain certain independence even by the corresponding mechanism (such as a unidirectional valve), so that another air chamber still can maintain a certain supporting force when an air chamber is under leakage. In addition, if the mattress is designed to be used by two people, the air chamber corresponding to the mattress can be designed to have a buffer space between the two sets. By this way, even a first user lying on one side turns over, a second user sleeping on the other side will not be directly affected by excessive vibrations. The buffer layer can be constituted by vibration isolated materials in itself such as an air chamber with lower pressure or sponges, etc. Or, the gases between the two sets of air chambers do not connected with each other, so as to generate an effect similar to the independent cylinder of the conventional mattresses.

[0037] In addition, the periphery of the inflatable middle layer 105 has a surrounding side drawstring 103. The side surrounding sheet outstretches a surrounding three-layer structure by at least one side drawstring. The side drawstring can be plastic materials, fabric fiber materials or other connection materials which can provide a certain tension and supporting forces. by ways of high frequency welding or paste ...etc., the side surrounding sheet 103 is connected to other portions of the inflatable mattress 10, so as to maintain the inflatable mattress 10 to keep a predetermined shape during inflation.

[0038] Refer to FIG.1b. FIG.1b exemplifies an embodiment of the inflatable mattress 10 according to the invention.

[0039] In FIG.1b, the inflatable mattress 11 has an upper layer structure 111, an inflatable middle layer 155, and a bottom layer structure 112. The upper layer structure 111 has a top surface portion, that is the inner rectangular region of the upper layer structure 111 in FIG.1b. The top surface portion covers more than 70% of the area of the upper layer structure facing up, and the top surface portion connect to the bottom layer structure 112 by a plurality of round hole drawstrings 116.

[0040] A first surface of the inflatable middle layer 115 is fixedly connect to the upper layer structure 111. A second surface of the inflatable middle layer 115 is fixedly connected to the bottom layer structure 112.

[0041] In addition, the periphery of the inflatable middle layer 115 has a surrounding side drawstring 113. The side surrounding sheet 113 outstretches a surrounding three-layer structure by at least one side drawstring 114. The side drawstring can be plastic materials, fabric fiber materials or other connection materials which can provide a certain tension and supporting forces. by ways of high frequency welding or paste, etc., the side surrounding sheet 113 is connected to other portions of the inflatable mattress 11, so as to maintain the inflatable mattress 11 to keep a predetermined shape during inflation.

[0042] In other words, the inflatable middle layers 105, 115 can be constituted by various kinds of different structures. Besides, since the top surface portion of the upper layer structures 105, 115 are main parts in touch with users, therefore, the top surface portion can include structures constituted by the fabric surface laminating materials, so that the fabric surface laminating materials oriented toward users are constituted by fabric surfaces. Of course, based on considerations of factors on designs and convenience of manufacturing ...etc., this kind of fabric surface laminating materials can also extend to the whole upper layer structures 101, 111, or even extend to the side surrounding sheets 103, 113. If one hopes the mattresses can be designed to be used on two side, the bottom layer structures 102, 112 can be directly designed to be the same as the design of the upper layer structures 101, 111.

[0043] Refer to FIG. 2a. The FIG.2a exemplifies a schematic drawing of an embodied way of the fabric surface laminating materials according to the invention. In FIG.2a, this kind of fabric surface laminating materials 20 has a basic fabric layer 201 and a covering layer 203. The basic fabric layer 201 and the covering layer 203 are being fixedly connected by the glues 202.

[0044] The basic fabric layer 201 can be woven by a plurality of fabric fibers via weft (or warp) or other geometrical structural ways. By different materials and weaving methods, different surface characteristics can be provided. For example, by different materials and weaving methods, the basic fabric layer 201 of colors, patterns, heat dissipations, heat preservations, and different

sense of touches can be conducted.

[0045] These fabric fibers can generate surfaces with different flatness on the surfaces according to their characteristics. In principle, during the process of pressing, the basic fabric layer 201 presses and embeds into the covering layer 203. Please be noted that, even the covering layer 203 which looks like flat in FIG.2a, by the processes of sticking by the glues and pressing laminating on the surface, even the tiny or invisible laminations are belonging to the "embedment into the uneven surface of the surface of the fabric layer" herein.

[0046] FIG.2b exemplifies a more obvious squeezing and embedment phenomenon. The surface of the basic fabric layer 201 of the fabric laminating materials 21 has obvious uneven ups and downs. Likewise, one conduct the lamination between the basic fabric layer 211 and covering layer 213 by the glues. From FIG.2b one can clearly see the basic fabric layer 211 pressing and embedding into the surface of the covering layer 213, so that the two (211, 213) join more closely together.

[0047] In one embodiment, the covering layer can have a polarity, and by this characteristic, the covering layer can be fixed to the inflatable middle layer by way of high frequency welding. For example, the covering layer can use PVC materials. Comparing to similar materials (with respect PVC materials), PVCs are easily being processed, capable of recycling for continuous use, high strength, superior geometrical stability.

[0048] In one embodiment, the fabric fiber of the basic fabric layer has number of fibers of more than 50 and less than 300 per square inch in weft direction and warp direction. For example, the basic fabric layer can be constituted by polyester fibers of 75Dx75D or 110Dx80D. Wherein the "D" means the standard unit of the wire diameter of 1 gram per 9 kilometers used in the industry.

[0049] In one embodiment, the glues can withstand drawing forces larger than 20 newtons per 3 centimeters. In one embodiment, the material of the glues is PU glue with viscosity between 350000 CPS to 100000 CPS. For example, the PU glues can be adopted for the glues with viscosity between 350000 CPS to 100000 CPS, or between 40000 CPS to 60000 CPS. The PU is the polyurethane material, and the CPS is a measurement unit for viscosity in the industry.

[0050] Set different amount of glues according to different standards of laminating firmness. The higher the standard of the laminating firmness, the more the amount of glues, and the higher the costs. Preferred approaches are such as between 20N/3cm to 100N/3cm, or between 10N/3cm to 50N/3cm, and the amount of glues is 10g/Y2 to 100g/Y2. The "N" represents the newton, and the g/Y2 represents the amount of glues per square yard.

[0051] In one embodiment, the thickness of the covering layer is between 0.15mm to 0.9mm, the thickness of embedment of the basic fabric layer into the covering layer is between 0.06 mm to 0.1mm, and the total thickness of the upper layer structure is between 0.2mm to 1mm. It is an option as long as the thickness of the cov-

ering layer satisfies the high frequency welding and no leakage. The second lamination can all be under processing.

[0052] In one embodiment, the affordability for tensile strength of the basic fabric layer is larger than 200 newtons per 2.54 centimeters, an affordability for tensile strength of the fabric surface laminating material is larger than 4 newtons, and an affordability for peel of the fabric surface laminating material is larger than 40 newtons per 3 centimeters. There can be different settings according to different specifications, materials, and glue formulas of the basic fabric layer. Also, the basic fabric layer can be doped with flame retardant material. For example, by doping flame retardant material or a fireproof treatment, the ignition point of the basic fabric layer is larger than 300 degrees Celsius.

[0053] In FIG.3a, the covering layer can have embossed patterns. The embossed patterns of the covering layer can be pressed out by one side of an embossing roller or by conducting rolling pressing on all two sides, thus generating the corresponding embossed patterns. In FIG.3a, one can press out horizontal and vertical parallel embossed stripes 311 on the covering layer 31 manufactured by materials of PVC, etc. by the roller. Comparing to other portions 312, the embossed strips 311 can have a certain degree of protrusions. By designs of the embossed stripes 311, one can not only create higher stability and structural drawing forces, better effects can also be generated with respect to the cement of the basic fabric layer.

[0054] In FIG.3b, the covering layer 32 has protrusive embossed patterns 321. Different from the design of the embossed stripes with staggered arrangements in horizontal and vertical directions in FIG.3a, the embossed stripes in FIG.3b constitute hexagonal shapes similar to honeycomb shapes, bringing better structural stability. In the point of view of manufacturing, it means one can manufacture a thin layer having the same strength using thinner materials. This approach can further reduce the manufacturing costs.

[0055] In FIG. 3c, the covering layer 33 also has protrusive embossed blocks 331 distributed between the embossed stripes arranged in horizontal and vertical directions (i.e. the black geometrical block patterns as marked). Please be noted that, the manufacture of embossed patterns on all two sides or only one side of these covering layers can be conducted. The embossed patterns can be protrusive, concave, or local protrusive and local concave.

[0056] Refer to FIG.4. FIG.4 exemplifies a method for manufacturing the mentioned fabric surface laminating materials. First, flatten the fabric surface material (step S1). Usually, for the convenience of transportation, fabric surfaces are preserved by way of rolling up.

[0057] Next, apply glue on the heated flat-lying fabric surface and drying cooling (step S2). In addition, flatten the PVC material acted as the covering layer (step S3). Next, press and form the fabric surface material and the

preheated PVC material into the fabric surface laminating materials by a double-fitting roller (step S4). In other words, by the pressure of the roller, the PVC material of the covering layer is conducted to have closer fixing with the fabric surface material acted as the basic fabric layer by the glues.

[0058] Finally, one cools the fabric surface laminating materials by a cooling wheel and conducts an accumulator winding (step S5). The manufactured fabric surface laminating materials can conduct welding or lamination later with other elements, so as to constituted various kinds products of inflatable mattresses.

[0059] In addition, the covering layer at PVC can have embossed patterns on all two sides, and the kinds of lines are not being limited. Different patterns can be pressed out by different sleeves. The purpose is to decrease the thickness of the material, and easily to e flattened, smoother, and easily been processed.

[0060] In one embodiment, a waterproof treatment is conducted to the basic fabric layer. In addition, the brush, waterproof treatment can be conducted on the surface of the basic fabric layer. The basic fabric layer can be doped with silver materials, so as to avoid the occurrence of stink smell.

[0061] Refer to FIG.5a. FIG.5a exemplifies a schematic drawing of fixing the connection of the upper layer structure of the inflatable mattress by Y-type drawstrings 512. Since the Y-type drawstrings 512 are divided into two branches on the portion of the connection with the upper layer mechanism 511, and are looked like a shape of an Y-type alphabet, so as to be named Y-type drawstrings 512. In fact, the number of branches of the drawstrings can be even more than two, depending on designs for practical requirements.

[0062] In addition, refer to FIG. 5b. FIG.5b exemplifies a schematic drawing of fixing the upper layer structure 521 of the inflatable mattress by round hole drawstrings 522. The round circle drawstrings draw the upper layer structure 521 in a structure similar to a way of a cylinder, generating a certain drawing force, and then ensure the shape of the inflatable mattress, corresponding to embodiments in FIG.1a and FIG.1b. Of course, it should be noted that, technical staffs can also use other ways to ensure the shape of the inflatable mattress.

[0063] Refer to FIG.6. In one embodiment, the inflatable mattress 62 can further include one or more than one buckling structures 622, 624, configured to settle and fix a removable upper layer mattress above the upper layer structure 61. The removable upper layer mattress 61 is transparent materials, and the removable mattress has a buckle-in structure corresponding to the buckling structures 612, 614.

[0064] In one embodiment, In one embodiment, wherein the removable upper layer mattress can be a thin pad constituted by a nature material such as using a straw mat, tatami materials.

[0065] In one embodiment, wherein the upper layer structure further comprises a memory buffer layer, such

as a memory buffer layer constituted by memory sponges. The buffer layer is set below the basic fabric layer, configured to memorize the stature of a user, in order to provide a surface shape more consistent with the stature of a user.

[0066] By combinations of above mentioned embodiments and corresponding characteristics, and according to a plurality of and repeated experiments and tests, the manufacturing method and related techniques herein can manufacture an inflatable mattress which can reduce the costs and at the same time having comfort, thus bringing substantial technical effects.

Claims

1. An inflatable mattress, comprising:

an upper layer structure comprising a basic fabric layer and a covering layer, the basic fabric layer being woven by a plurality of fabric fibers, wherein the number of weft and warp fibers per square inch is higher than 100, the covering layer and the basic fabric layer are stuck to each other by glues, wherein the weight of the glues is higher than 20 grams per square yard and lower than 80 grams per square yard, the basic fabric layer faces toward the direction of the covering layer, pressing and embedding into the covering layer and constituting a first fabric surface laminating material;

an inflatable middle layer, a first surface of the inflatable middle layer being fixedly connected to the upper layer structure, and the inflatable middle layer comprising at least one air chamber configured to provide a predetermined shape after expansion during the inflation, and the outer side of the inflatable middle layer comprising the second fabric surface laminating material; and

a bottom layer structure, wherein a second surface of the inflatable middle layer being fixedly connected to the bottom layer structure, and the bottom layer structure comprising the third fabric surface laminating material.

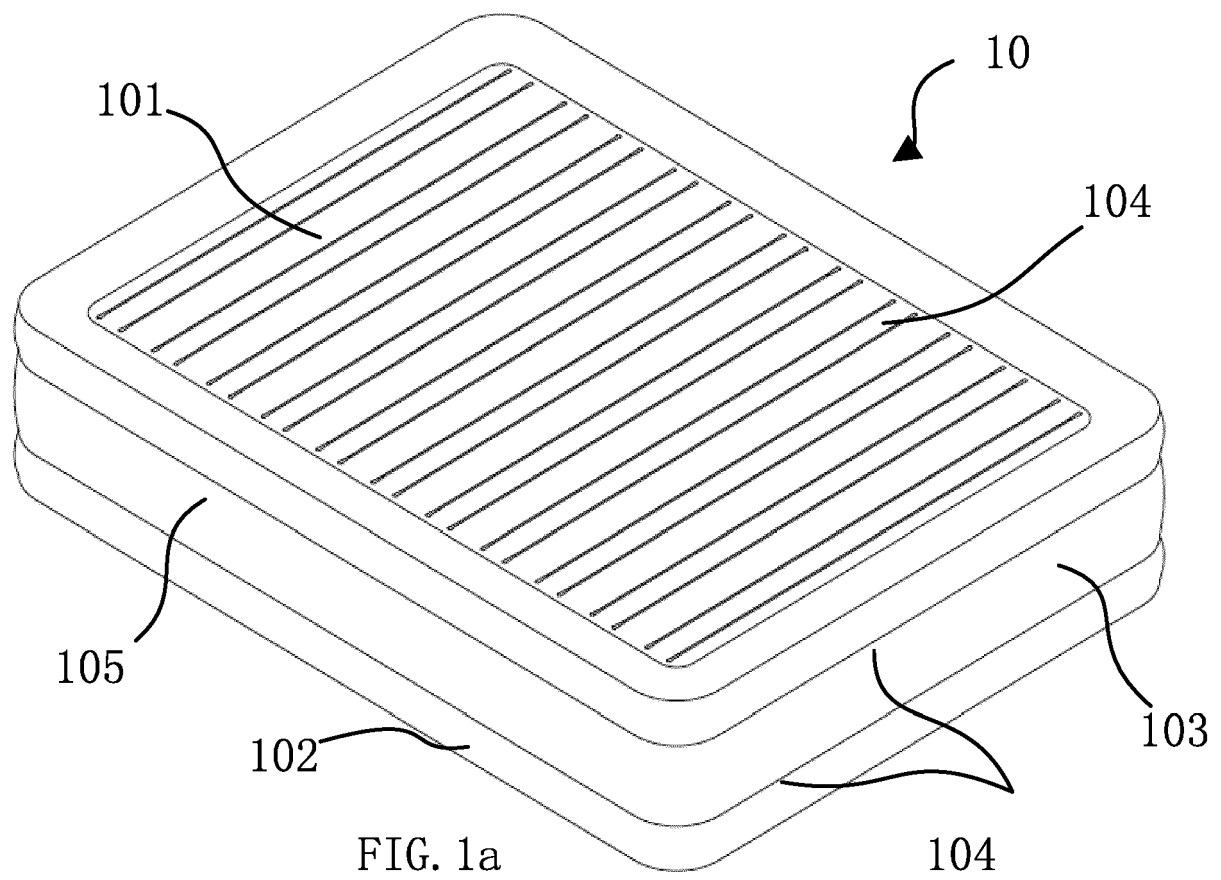
2. The inflatable mattress as claim 1, wherein the portions of the upper layer structure, the inflatable middle layer and the bottom layer structure facing outwardly are all covered with the fabric surface laminating material.

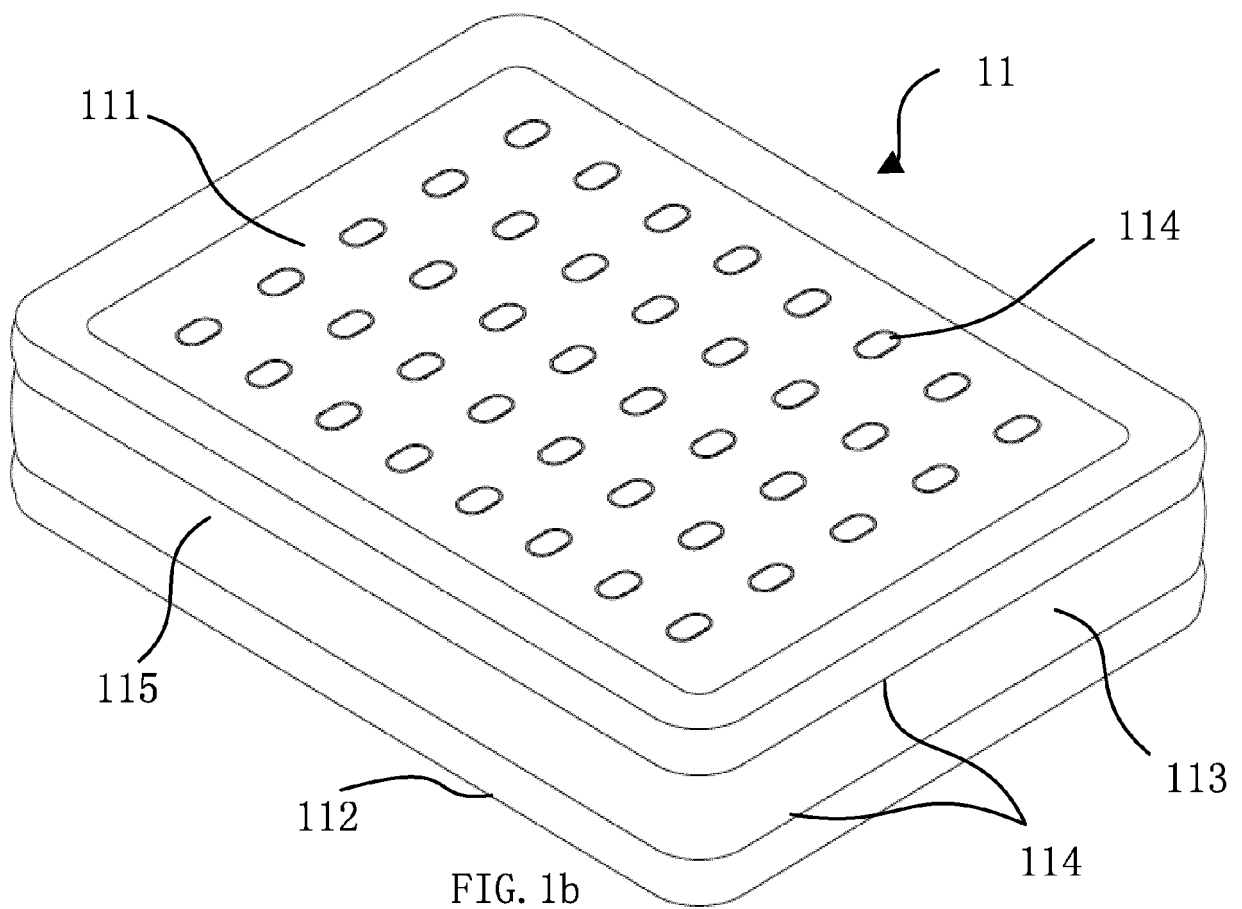
3. The inflatable mattress as claim 1, wherein the fabric fiber of the basic fabric layer comprises polyester materials, and the weight per unit length are different for the fabric fiber in weft direction and the fabric fiber in warp direction.

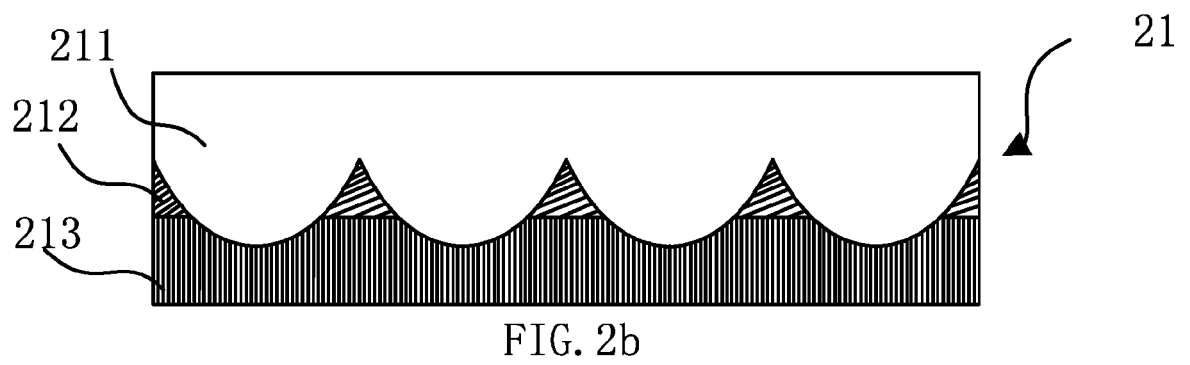
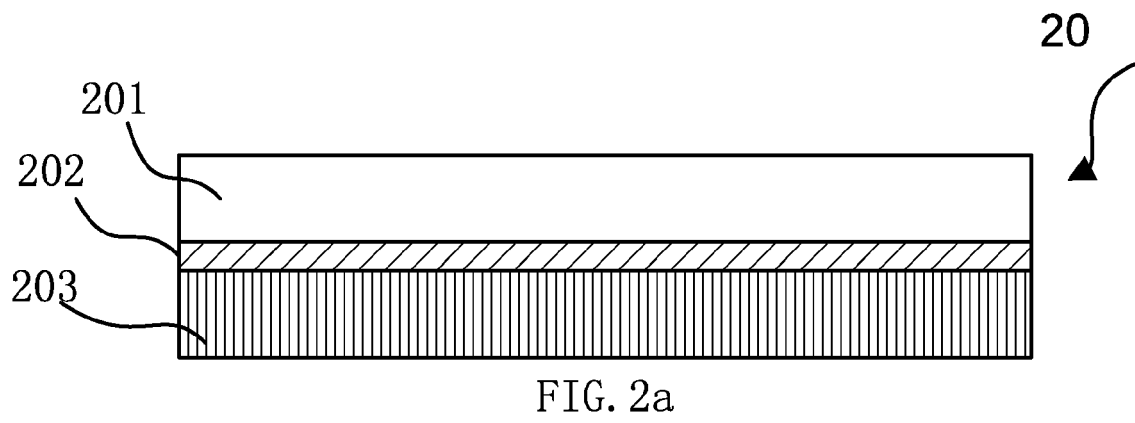
4. The inflatable mattress as claim 1, wherein the fabric

fiber of the basic fabric layer has number of fibers of more than 50 and less than 300 per square inch in weft direction and warp directions.

5. The inflatable mattress as claim 1, wherein the materials of the covering layer includes PVC material. 5
6. The inflatable mattress as claim 1, wherein the glues withstands drawing forces of more than 10 newtons and less than 50 newtons per 3 centimeters. 10
7. The inflatable mattress as claim 1, wherein the material of the glues is PU glues with viscosity between 350000 CPS to 100000 CPS. 15
8. The inflatable mattress as claim 1, wherein the thickness of the covering layer is between 0.15mm to 0.9mm, the thickness of embedment of the basic fabric layer into the covering layer is between 0.06 mm to 0.1mm. 20
9. The inflatable mattress as claim 1, wherein an affordability for tensile strength of the fabric surface laminating material is larger than 200 newtons per 2.54 centimeters, an affordability for tear strength of the fabric surface laminating material is larger than 4 newtons, and an affordability for peel strength of the fabric surface laminating material is larger than 40 newtons per 3 centimeters. 25
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10. The inflatable mattress as claim 1, wherein the covering layer is doped with an flame retardant material, so that an ignition point for the fabric surface laminating material being larger than 350 degrees Celsius. 35
11. The inflatable mattress as claim 1, wherein the covering layer comprises a plurality of embossed patterns. 40
12. The inflatable mattress as claim 11, wherein the embossed patterns of the covering layer have a plurality of protruding embossed stripes cross-distributed on the surface of the covering layer. 45
13. The inflatable mattress as claim 12, wherein the plurality of protruding embossed stripes constitute a plurality of hexagonal honeycomb structures.
14. The inflatable mattress as claim 12, further comprising a plurality of protruding embossed blocks being distributed on interspace areas separated out by the protruding embossed stripes. 50
15. The inflatable mattress as claim 11, wherein the embossed patterns are distributed on one side or two sides of the covering layer. 55







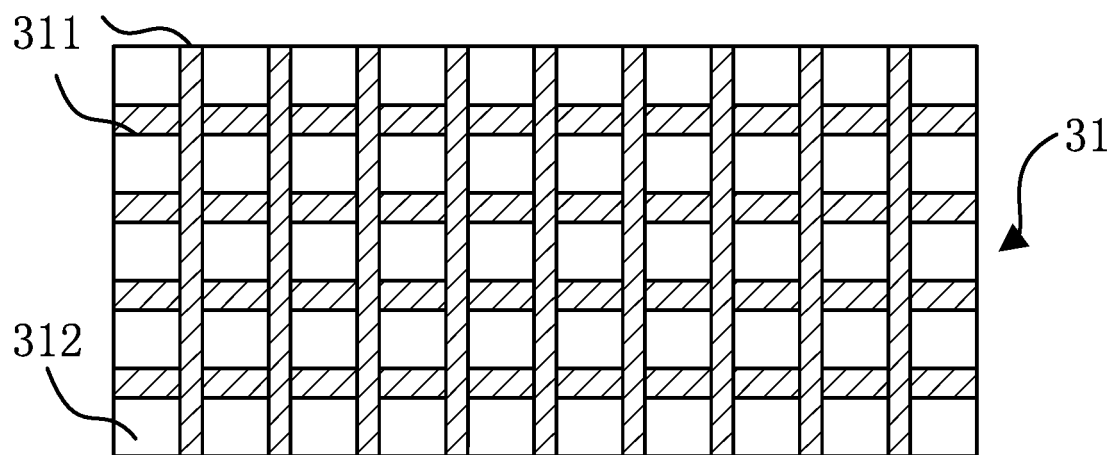


FIG. 3a

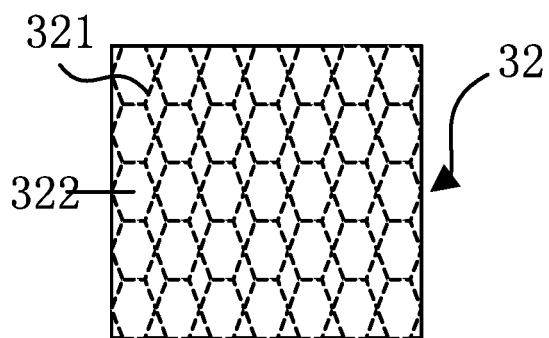


FIG. 3b

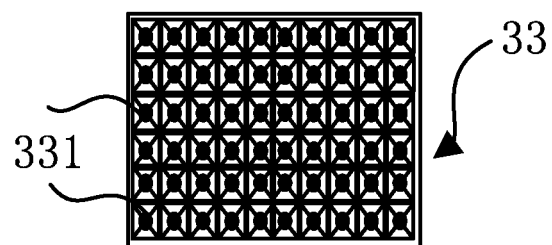


FIG. 3c

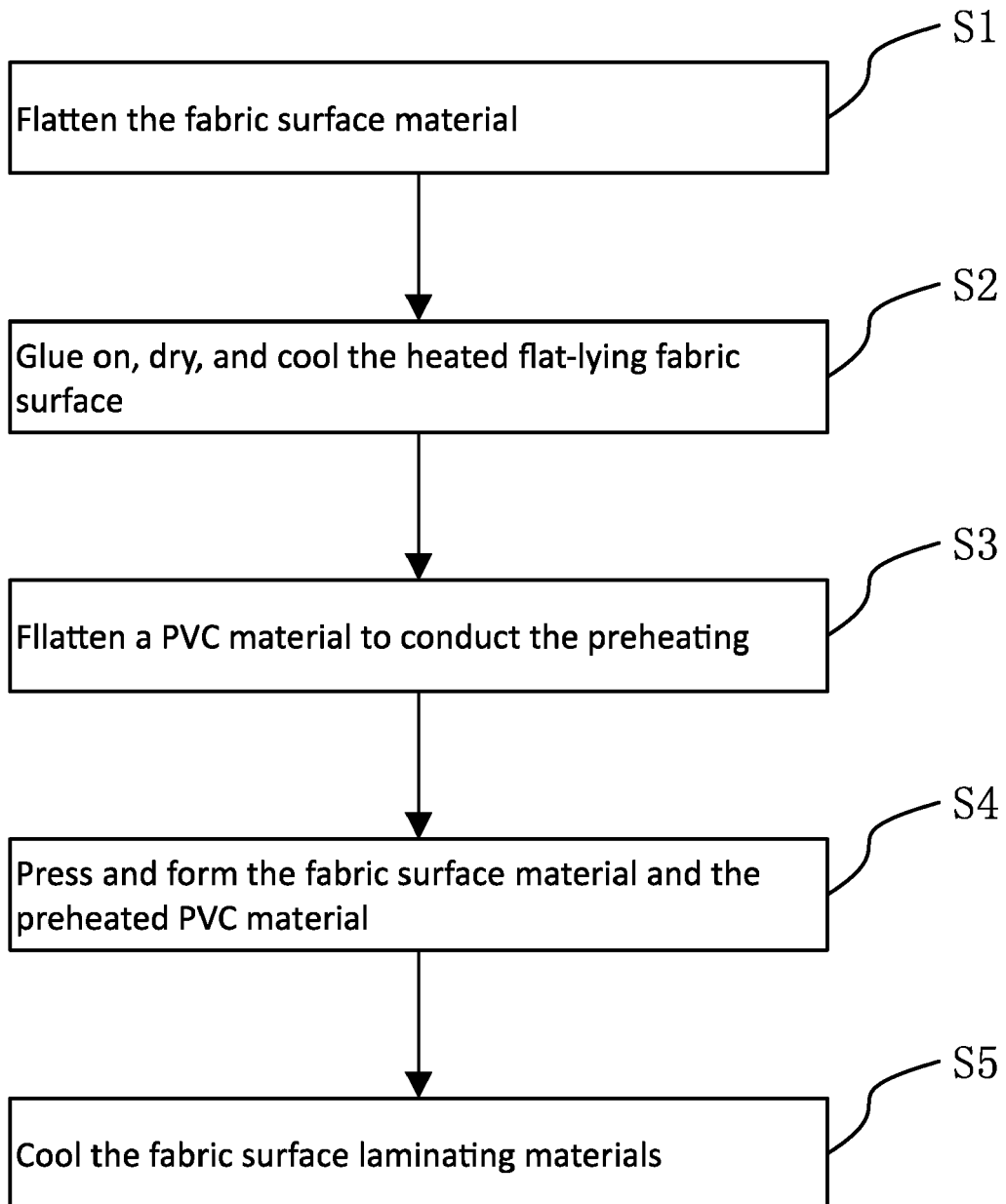


FIG. 4

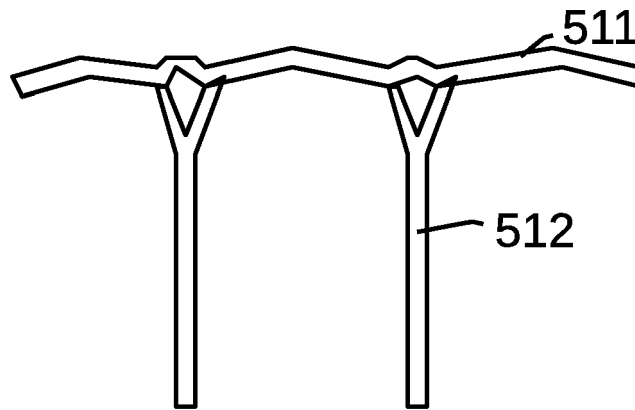


FIG. 5a

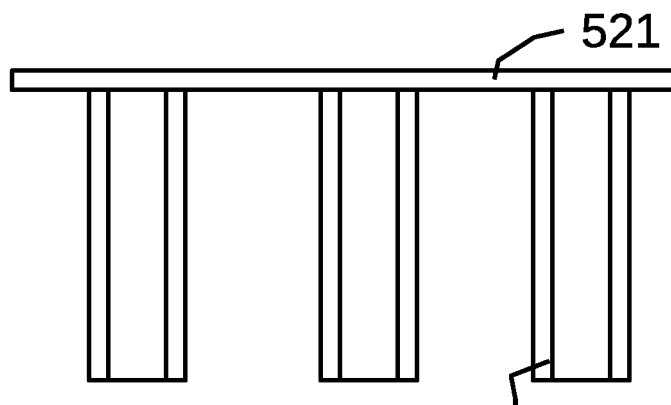


FIG. 5b 522

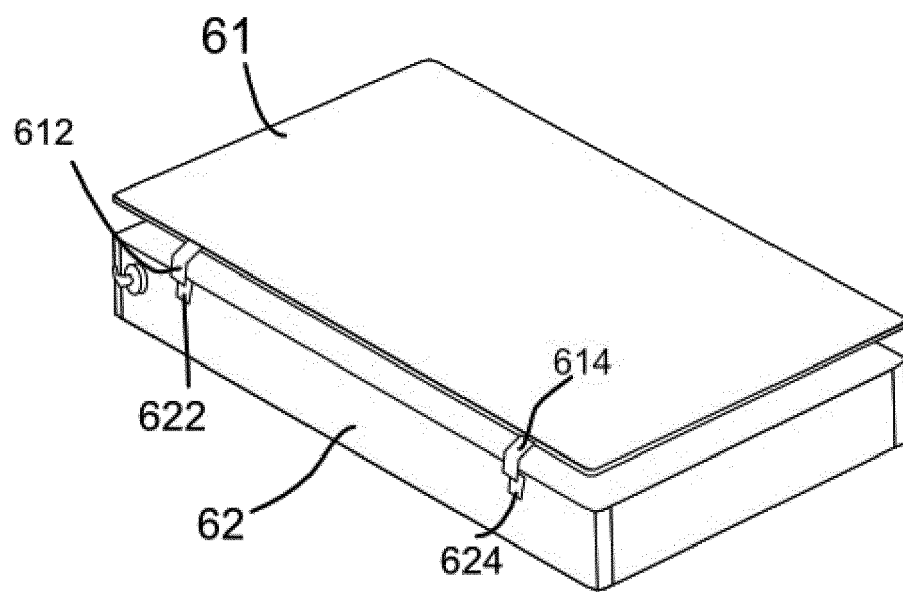


FIG.6



EUROPEAN SEARCH REPORT

Application Number
EP 16 17 0935

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 10 October 2017	Examiner Bitton, Alexandre
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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**ANNEX TO THE EUROPEAN SEARCH REPORT
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