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(54) **A PORTABLE MATTRESS**

(57) The disclosure relates to a portable mattress (200) comprising: a first layer (210) having a central portion (212), a first end portion (214) and a second end portion (216), wherein the central portion (212) extends in a lateral and a longitudinal direction, the central portion (212) has a first surface (218) and a second surface (220), and the first end portion (214) and the second end portion (216) extend from the central portion (212) at a first longitudinal edge (224) and a second longitudinal edge (228) of the central portion (212), respectively; a second layer (250) attached to the first layer (210), the second layer (250) being arranged in abutment with the second surface (220) of the central portion (212) of the first layer (210); fastening means (205) arranged to allow connecting one or more portions of the first layer (210) together, such that the mattress (200), when rolled up with the first surface (218) of the first layer (210) facing outwardly, is configurable into an essentially cylindrical structure by fastening the fastening means (205).

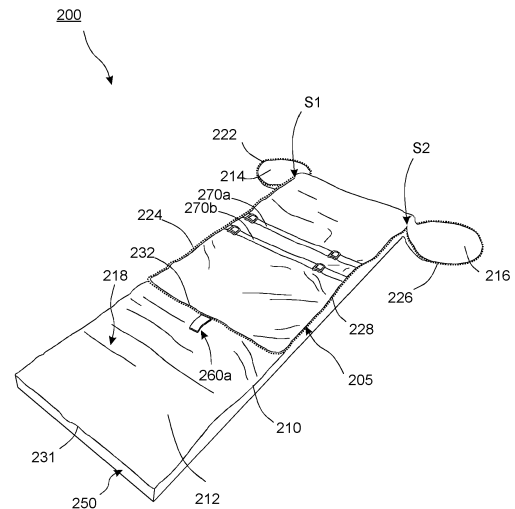


Fig 2

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**Description**Field of the invention

**[0001]** The present invention relates to a portable mattress.

Background art

**[0002]** Portable mattresses are known in the art. These products are useful when stationary beds are not available. Portable mattresses are used at home acting as spare mattresses for guests. Portable mattresses are also used when traveling and camping acting as travel mattresses. A portable mattress must comply with several requirements. One such requirement is that the portable mattress must be reasonably easy to carry around. Furthermore, it is beneficial if the portable mattress does not take up too much space. Some portable mattresses, for example those intended for outdoor use, e.g. camping or the like, will also have to withstand a harsh environment and may therefore have to comprise for example wear-resistant and/or water-proof materials. A further requirement is that the portable mattress must provide adequate sleeping comfort.

**[0003]** One type of portable mattress of the art is the inflatable mattress. One advantage with these mattresses is that they require relatively small size during storage and transport. Moreover, they often provide adequate lying comfort when inflated. However, inflatable mattresses also have disadvantages. They may result in unsecure sleeping comfort during night due to air retention, i.e. small leaks for example at connections, near the pump, through the valve and/or at small leaks in the inflatable mattress. Moreover, the heat conduction through the mattress is relatively high, which means that it may become uncomfortable to use the mattress when the mattress is disposed on cold surfaces, such as in an outdoor situation. Additionally, the pumping and emptying of air into and out from the mattress is often unpractical and time-consuming.

**[0004]** Another type of portable mattress is the sleeping mat. The sleeping mat is typically made from a heat insulating closed-cell foam material and thus provides a lower heat conduction to the ground than the inflatable mattress. Hence, it is generally better suited for use on colder surfaces. A sleeping mat is also fairly easy to carry around. It is readily rollable into a size small enough for being conveniently movable for example mounted onto a back pack. Furthermore, sleeping mats can be made with high durability as they do not rely on inflated air. The sleeping comfort is, however, not as good as for the inflatable mattress as the material thickness must be kept sufficiently low to allow the sleeping mat to be portable.

**[0005]** Neither of the portable mattresses of the art provide a solution which meets all the requirements provided hereinabove. Typically, customers have to choose dependent on which requirements are most important for

the customer and/or the intended use of the mattress. Hence, it has been shown that there is a need for an improved portable mattress.

5 Summary

**[0006]** It is an object to provide an improved portable mattress that is durable, easy to carry around and provides an improved sleeping comfort in comparison with the prior art.

**[0007]** This object has been achieved by a portable mattress comprising: a first layer having a central portion, a first end portion and a second end portion, wherein the central portion extends in a lateral and a longitudinal direction, the central portion has a first surface and a second surface, and the first end portion and the second end portion extend from the central portion at a first longitudinal edge and a second longitudinal edge of the central portion, respectively; a second layer attached to the first layer, the second layer being arranged in abutment with the second surface of the central portion of the first layer; fastening means arranged to allow connecting: a circumferential edge of the first end portion of the first layer to the first longitudinal edge of the central portion of the first layer, a circumferential edge of the second end portion of the first layer to the second longitudinal edge of the central portion of the first layer, a first lateral edge of the central portion of the first layer to the first surface of the central portion of the first layer along a laterally extending portion of the first surface, such that the mattress, when rolled up with the first surface of the first layer facing outwardly, is configurable into an essentially cylindrical structure by fastening the fastening means.

**[0008]** The word **longitudinal** should be understood as denoting the direction along the longest dimension of the mattress in the mattress plane (i.e. the mattress length) whereas the word **lateral** should be understood as denoting the direction perpendicular to the longitudinal direction in the mattress plane (i.e. the mattress width).

**[0009]** The portable mattress may be advantageous as it may allow combining a good sleeping comfort with a high durability and a high portability. Good sleeping comfort may be provided by a careful choice of material used in the second layer. The requirement of high durability may be met by carefully choosing the material for the first layer. When used for sleeping or resting, the portable mattress may be protected from the ground/floor by the first layer and may provide sleeping comfort for a user by the second layer. When transported, the portable mattress is arranged to be configured into an essentially cylindrical form by first rolling the mattress along a longitudinal direction and finally fastening the fastening means. This implies that the second layer, when the mattress is being configured into an essentially cylindrical structure, is fully enclosed inside the first layer. Thus, the first layer may protect the second layer also during transport. The dimensions of the first layer in relation to the dimensions of the second layer may be such as to allow space to

form in the center of the rolled-up second layer when the mattress has been configured into the essentially cylindrical configuration. The space can be used to accommodate additional items, such as e.g. nightwear, a pillow and a blanket.

**[0010]** Thus, it should be understood that the first layer is a protective layer for the portable mattress. When using the portable mattress, the portable mattress is disposed on a supporting surface, such as e.g. a floor inside or the ground outside, with the first layer facing downwardly. Additionally, a portion of the first layer will act as a constraining layer for the portable mattress, when the portable mattress is being configured into the essentially cylindrical shape.

**[0011]** According to an embodiment, the fastening means comprises one or more zippers. This may provide a fast and easy way of sealing the first layer to configure the mattress into the essentially cylindrical form. The one or more zippers also contribute to providing protection from dirt, water and other unwanted potential contaminants for the second layer. The one or more zippers may comprise plastic zipper elements but may, alternatively comprise metallic zipper elements. More than one zipper may be used. Alternatively, one zipper may be used. In such a case, the zipper may be a two-way (double-separating) zipper, i.e. comprising two sliders arranged on opposite ends of the tape.

**[0012]** A purpose of the first layer is to protect the second layer from water, dirt and other unwanted contaminants both during transport and during use for sleeping and/or resting. Thus, according to an embodiment, the first layer comprises a water-resistant material, such as a water-repellant material. The material of the first layer may also be resistive to dirt. This implies that the first layer may comprise a dirt repellent material. Such materials may be tightly woven fabrics comprising one or more fiber materials. According to an embodiment, the first layer comprises one from the list of: A polyamide-based material, a polyethylene naphthalate-based material. Examples of such materials may be different forms of Nylon and polyester, respectively.

**[0013]** According to an embodiment, the second layer comprises a polymeric foam material. To provide good sleeping comfort, the second layer may be tailored using more than one material. Specifically, according to an embodiment, the second layer comprises a base layer and an upper layer, the base layer facing the first layer, wherein the base layer is a polyurethane foam with a density within the range 20-40 kg/m<sup>3</sup> and a hardness within the range 100-140 N, and the upper layer comprises a polyurethane-based foam with a density within the range 40-60 kg/m<sup>3</sup> and a hardness within the range 60-80 N. The upper layer and the base layer may be permanently attached to each other, thus forming a single unit. Specifically, the upper layer and the base layer may be glued together.

**[0014]** A purpose of the base layer is to provide support for the body of a user of the mattress. Specifically, the

body of the user should be fully supported such that no region of the body is able to fully compress the material risking the user to "feel the floor". For this purpose, the base layer comprises a material with a hardness within a higher range available for polymeric foam materials. A purpose of the upper layer is to provide a surface which is nice to sleep on. Thus, the material of the upper layer may be arranged to provide adequate pressure relief and flexibility. Thus, the hardness of the upper layer may be lower than the hardness of the base layer. The upper layer may comprise a viscoelastic material, i.e. a memory foam. Viscoelastic materials may soften in reaction to body heat, allowing it to mold to a warm body in a few minutes.

**[0015]** According to an embodiment, the portable mattress further comprises a textile cover attached to the central portion of the first layer along edges thereof, the textile cover enclosing the second layer and attaching the second layer to the first layer, said textile cover comprising an opening such as to allow removing the second layer from the first layer. The textile cover may be attached to the central portion of the first layer by sewing. Alternatively, or additionally, the textile cover may be attached to the central portion of the first layer for example by stitching or riveting. The textile cover may comprise an elastic material, such as for example a stretch fabric. The use of an elastic material may allow for improved sleeping comfort as the elastic material more easily adjusts to the shape of the second layer when a user is lying on the portable mattress. For enhanced protection from water, dirt and other contaminants, exposed portions of the textile cover may comprise a material similar to, or equal to, the material used for the first layer. Such exposed areas of the textile cover may be for example the side portions of the textile cover, the side portions being the four surfaces attaching the textile cover to the first layer. By use of a textile cover, the second layer is attached to the first layer without their respective abutted surfaces having to be fixated to each other. This may provide an improved mechanical flexibility, which is desirable when rolling the mattress to form the essentially cylindrical structure. Moreover, the use of a textile cover allows for removing the second layer from the first layer. This may be an advantage as it allows for replacing a worn-out layer to a new one without having to replace the whole mattress. Furthermore, it may allow washing and/or cleaning the first layer separately.

**[0016]** According to an embodiment, the opening is sealable by a second zipper arranged such that a handle of a slider of the zipper is located on the inside of the textile cover. The use of a second zipper may be advantageous as it may provide a good protection for the second layer. By arranging the handle of the slider of the zipper on the inside of the textile cover, the risk of introducing a discomfort for the user lying on the mattress is minimized. There are numerous alternative ways to seal the opening in the textile cover, for example buttons and/or hook and loop fasteners, such like Velcro® fas-

teners. Moreover, the opening must not necessarily be sealed. For example, portions of the textile cover may be arranged to overlap in the vicinity of the opening, thus protecting the opening and hence also providing protection for the second layer.

**[0017]** According to an embodiment, the second layer has a plurality of slits in a surface of the second layer that is arranged in abutment with the second surface of the first layer, said plurality of slits extending in a lateral direction from a first longitudinal edge to a second longitudinal edge of the second layer. The plurality of slits may be arranged in parallel to each other and at substantially equal distances from each other. The plurality of slits may increase the mechanical flexibility of the second layer, the increased flexibility being beneficial when rolling the mattress during configuration of the mattress into the essentially cylindrical structure.

**[0018]** According to an embodiment, the portable mattress further comprises second fastening means arranged to allow connecting a point along the first lateral edge of the central portion of the first layer to a point on the first surface of the central portion of the first layer along the laterally extending portion of the first surface, such that the mattress, when rolled up with the first surface of the first layer facing outwardly, may be secured in a rolled-up state by fastening the second fastening means. The second fastening means may comprise hook and loop fastenings, such like Velcro® fastening. The second fastening means may, however, comprise any type of fastening means, such as for example one or more hooks, buttons, ropes or the like. The second fastening means may be advantageous as it may allow securing the mattress in a rolled up state during the process of configuring the mattress into the essentially cylindrical structure. This may simplify the configuration process, especially when manually closing the fastening means to enclose the second layer inside the first layer.

**[0019]** According to an embodiment, the portable mattress further comprises one or more straps facing the first surface of the central portion of the first layer, the one or more straps extending in a substantially lateral direction, wherein each one of the one or more straps is connected with a first end to the first longitudinal edge of the central portion of the first layer and with a second end to the second longitudinal edge of the central portion of the first layer. The one or more straps may be advantageous as it may allow the portable mattress to be more easy to carry around. Specifically, the one or more straps are arranged such that, when the portable mattress is being configured into the essentially cylindrical structure, the portable mattress will be wearable for example on the back of a user. Alternatively, or additionally, the one or more straps may comprise one or more handles arranged on the first layer, the one or more handles allowing for carrying the portable mattress by hand.

**[0020]** A further scope of applicability of the present invention will become apparent from the detailed description given below. However, it should be understood that

the detailed description and specific examples, while indicating preferred embodiments of the invention, are given by way of illustration only, since various changes and modifications within the scope of the invention will become apparent to those skilled in the art from this detailed description.

**[0021]** Hence, it is to be understood that this invention is not limited to the particular component parts of the product described as such product may vary. It is also to be understood that the terminology used herein is for purpose of describing particular embodiments only, and is not intended to be limiting. It must be noted that, as used in the specification and the appended claim, the articles "a," "an," "the," and "said" are intended to mean that there are one or more of the elements unless the context clearly dictates otherwise. Thus, for example, reference to "a unit" or "the unit" may include several devices, and the like. Furthermore, the words "comprising", "including", "containing" and similar wordings does not exclude other elements or steps.

#### Brief descriptions of the drawings

**[0022]** The invention will by way of example be described in more detail with reference to the appended drawings, which shows presently preferred embodiments of the invention.

Figure 1 shows a conceptual perspective view from below of the portable mattress 100 according to an embodiment of the present disclosure.

Figure 2 shows a perspective view of the portable mattress 200 lying upside down according to an embodiment of the present disclosure.

Figure 3 shows a perspective view of the portable mattress 200 when arranged for use as a mattress according to an embodiment of the present disclosure.

Figure 4 shows the same perspective view as Fig. 3 of the portable mattress 200, during the process of rolling the mattress 200 in order to configure the mattress into an essentially cylindrical configuration.

Figure 5 shows a perspective view of the portable mattress 200 after having been secured by second fastening means 260a, 260b.

Figure 6 shows a cross sectional view along a line VI-VI (see Fig. 3) of a part of the portable mattress 200 according to the example embodiment in Fig. 2-5.

#### Detailed description

**[0023]** The present invention will now be described more fully hereinafter with reference to the accompanying drawings, in which currently preferred embodiments of the invention are shown. This invention may, however, be embodied in many different forms and should not be construed as limited to the embodiments set forth herein;

rather, these embodiments are provided for thoroughness and completeness, and fully convey the scope of the invention to the skilled person.

**[0024]** Figure 1 shows a conceptual drawing of a portable mattress 100 seen in a perspective view from below.

**[0025]** The portable mattress 100 comprises a first layer 110 having a central portion 112, a first end portion 114 and a second end portion 116. The first layer 110 has more than one purpose. One purpose is to act as a protective layer for the mattress 100. More specifically, the first layer 110 is adapted to be placed on a supporting structure, such as a floor, ground outside or the like. Another purpose of the first layer 110 is to form a protective cover for the mattress 100 when being carried around. The central portion 112 extends in a lateral and a longitudinal direction. The central portion 112 has a first surface 118 and a second surface 120. The first end portion 114 and the second end portion 116 extend from the central portion 112 at a first longitudinal edge and a second longitudinal edge of the central portion 110, respectively.

**[0026]** The portable mattress 100 further comprises a second layer 150 attached to the first layer 110. The second layer 150 is arranged in abutment with the second surface 120 of the central portion 112 of the first layer 110. A purpose of the second layer is to provide support for a user during sleep or rest.

**[0027]** The portable mattress 100 further comprises fastening means arranged to allow connecting portions of the portable mattress such as to allow forming a structure that is easier to move or transport. More specifically, the fastening means are arranged to connect a circumferential edge 122 of the first end portion 114 of the first layer 110 to the first longitudinal edge 124 of the central portion 112 of the first layer 110. The fastening means are further arranged to connect a circumferential edge 126 of the second end portion 116 of the first layer 110 to the second longitudinal edge 128 of the central portion 112 of the first layer 110. The fastening means are further arranged to connect a first lateral edge 130 of the central portion 112 of the first layer 110 to the first surface 118 of the central portion 112 of the first layer 110 along a laterally extending portion 132 of the first surface 118. The fastening means are thus arranged such that the mattress 100, when rolled up with the first surface 118 of the first layer 112 facing outwardly, is configurable into an essentially cylindrical structure by fastening the fastening means. When configurable into an essentially cylindrical structure, the second layer 150 is fully enclosed inside the first layer 110.

**[0028]** To further illustrate the inventive concept, Figure 2-5 shows, in more detail, a portable mattress 200 according to an example embodiment. Figure 2 shows the portable mattress 200 placed upside down, i.e. with the first layer 210 facing upwardly, whereas Fig. 3 shows the portable mattress 200 with the second layer 250 facing upwardly. Figure 4 and 5 illustrate the process of configuring the portable mattress 200 into the essentially cy-

lindrical structure by fastening the fastening means.

**[0029]** In the embodiment 200, the fastening means comprises one long zipper comprising a first side and a second side which can be connected to each other. The zipper extends from point S1 to point S2 on the first layer 210. The first side of the zipper extends from the point S1 along the first longitudinal edge 224 of the central portion 212, continues across the first surface 218 of the central portion 212 along the laterally extending portion 232 and further continues along the second longitudinal edge 228 of the central portion 212 at the end of which S2 is reached. The second side of the zipper extends from point S1 along the circumferential edge 222 of the first end portion 214, continues along the first lateral edge 230 of the central portion 212 and further continues along the circumferential edge 226 of the second end portion 216, at the end of which, the point S2 is reached. The zipper of the portable mattress 200 is a two-way zipper, i.e. it comprises two sliders. When the zipper is fully opened, the two sliders reside at or close to the points S1 and S2, respectively. When closing the zipper, thus configuring the mattress into the essentially cylindrical structure, both sliders may be used, one from each side. Alternatively, only one of the sliders may be used.

**[0030]** The first layer 212 of the portable mattress comprises a water-resistant material. Specifically, the first layer 212 comprises a tightly woven fabric made from Nylon fibers, a form of polyamide fibers. With such a material, the first layer 212 is resistive to water. Furthermore, the first layer 212 is resistive to dirt. This implies that dirt and other contaminants are less likely to get stuck on or within the first layer 212. It also implies that it is fairly easy to remove dirt and/or other contaminants from the first layer 212. This allows for keeping the mattress clean also after outdoor use.

**[0031]** The portable mattress 200 further comprises a textile cover 280 attached to the central portion 212 of the first layer 210 along edges thereof. The textile cover 280 encloses the second layer 250 and attaches the second layer 250 to the first layer 210. The textile cover 280 comprises an opening 281 such as to allow removing the second layer 250 from the first layer 210. In the embodiment, the textile cover 280 is attached to the central portion 212 of the first layer 210 by sewing. The textile cover 280 is partly made from an elastic material such as a stretch fabric. For enhanced protection from water, dirt and other contaminants, the textile cover 280 is partly made from the same material as the material used in the first layer 210. Specifically, in the embodiment, the textile cover 280 comprises a first portion 280a and a second portion 280b. The first portion 280a extends from the first layer 210 and covers the edges of the second layer 250. The first portion 280a is made from the tightly woven fabric made from Nylon fibers used also for the first layer 210. The second portion 280b is attached to the first portion 280a either directly or via the zipper, the second portion 280b being made from an elastic material, such as a stretch fabric. The use of another more durable material

for the first portion 280a than used for the second portion 280b provides protection for the second layer 250, especially for outdoor use where water and dirt may get stuck not only on the first surface 218 of the first layer 210 which is in direct contact with the ground, but also on the parts of the first portion 280a of the textile cover 280 covering the edges of the second layer 250.

**[0032]** Removing the second layer 250 from the first layer 210, allows for washing and/or cleaning the first layer 210. Moreover, it allows for replacing the second layer 250 in case the second layer 250 has become damaged, or drying the second layer in case of the mattress 200 having been exposed to excessive moisture. In the embodiment, the opening 281 is sealable by a second zipper 282 arranged such that a handle 284 of a slider of the second zipper 282 is located on the inside of the textile cover 208. This minimizes the risk of a user lying on the portable mattress 200 experiencing discomfort.

**[0033]** The portable mattress 200 further comprises second fastening means 260a,260b arranged to allow connecting a point along the first lateral edge 230 of the central portion 212 of the first layer 210 to a point on the first surface 218 of the central portion 212 of the first layer 210 along the laterally extending portion 232 of the first surface 218. This allows for securing the mattress 200 in a rolled-up state by fastening the second fastening means 260a,260b which is convenient as a temporary measure when configuring the mattress 200 into the essentially cylindrical configuration.

**[0034]** For the embodiment in Fig. 2-5, the second fastening means comprises hook and loop fasteners, such like Velcro® fastening. The configuration process is shown in Figs 3 to 5. Firstly, the mattress 200 is disposed with the first surface 218 of the first layer 210 facing downwardly (Fig. 3). Secondly, the mattress 200 is rolled starting from a second lateral edge 231 (see Fig. 2) continuing in the longitudinal direction towards the first lateral edge 230 as shown in Fig. 4. After having completely rolled the mattress 200 into an essentially cylindrical configuration, the mattress 200 is secured in said configuration by attaching a first portion of a hook and loop fastener 260a to a second portion of a hook and loop fastener 260b. Finally, the zipper can be closed, completely enclosing the second layer inside the first layer. The portable mattress 200 is now ready for storage and/or transport. The dimensions of the first layer 210 in relation to the dimensions of the second layer 250 is such as to allow space 290 to form in the center of the rolled-up second layer 250 when the mattress 200 has been configured into the essentially cylindrical configuration. The space 290 can be used to accommodate additional items, such as e.g. nightwear, a pillow and a blanket.

**[0035]** The portable mattress 200 further comprises one or more straps 270a, 270b (two straps in the example embodiment) facing the first surface 218 of the central portion 212 of the first layer 210. These are illustrated in Fig. 2. The one or more straps 270a, 270b extends in a substantially lateral direction and each one of the one or

more straps 270a, 270b is connected with a first end to the first longitudinal edge 224 of the central portion 212 of the first layer 210 and with a second end to the second longitudinal edge 228 of the central portion 212 of the first layer 210.

**[0036]** Figure 6 shows a detailed cross-sectional view along a line VI-VI (see Fig. 3) of a part of the portable mattress 200 according to the example embodiment in Fig. 2-5. Fig. 6 is cut open along a plane extending in the longitudinal direction, i.e. the cut open section is viewed in the lateral direction. The second layer 250 comprises a polymeric foam material. Furthermore, the second layer 250 comprises a base layer 252 and an upper layer 254. The base layer 252 is facing the first layer 210. In the embodiment, the base layer 252 is a polyurethane foam with a density within the range 20-40 kg/m<sup>3</sup> and a hardness within the range 100-140 N. The hardness range is chosen relatively high so as to provide ample support for the body of a user lying on the mattress. Specifically, the body of the user should be fully supported such that no region of the body is able to fully compress the material risking the user to "feel the floor". In the embodiment, the upper layer 254 comprises a polyurethane-based foam with a density within the range 40-60 kg/m<sup>3</sup> and a hardness within the range 60-80 N. The material properties are chosen to provide adequate pressure relief and flexibility. Specifically, the hardness of the upper layer 254 is lower than the hardness of the base layer 252. Furthermore, the upper layer 254 of the embodiment comprises a viscoelastic material, such as a memory foam. Such materials may soften in reaction to body heat, allowing it to mold to a warm body in a few minutes. This may further enhance the sleeping comfort of the user. In the embodiment, the second layer has a thickness of 8 cm. The upper layer has a thickness of 2 cm and the base material has a thickness of 6 cm. These numbers are chosen as they have been found to provide a good sleeping comfort while still keeping the size of the portable mattress 200 small enough for it to be easy to roll during configuration into the essentially cylindrical structure, as well as for enabling the portable mattress 200 to be more easy to carry.

**[0037]** The second layer 250 has a plurality of slits 256 in a surface of the second layer 250 that is arranged in abutment with the second surface 220 of the first layer 210. The plurality of slits 256 extends in a lateral direction from a first longitudinal edge to a second longitudinal edge of the second layer 250. The plurality of slits 256 is further arranged in parallel to each other and at substantially equal distances from each other. The slit of the plurality of slits 256 is approximately 2 cm deep and is distanced from an adjacent slit by 9 cm. The purpose of the plurality of slits 256 is to decrease the resistance of the second layer 250 when rolling the mattress 200 as shown in Fig. 4.

**[0038]** The person skilled in the art realizes that the present invention by no means is limited to the preferred embodiments described above. On the contrary, many

modifications and variations are possible within the scope of the appended claims.

**[0039]** For example, buttons may be used instead of, or combined with the one or more zippers. Moreover, the second layer may comprise more than two layers.

**[0040]** Additionally, variations to the disclosed embodiments can be understood and effected by the skilled person in practicing the claimed invention, from a study of the drawings, the disclosure, and the appended claims.

## Claims

### 1. A portable mattress (100,200) comprising:

a first layer (110,210) having a central portion (112,212), a first end portion (114,214) and a second end portion (116,216), wherein the central portion (112,212) extends in a lateral and a longitudinal direction, the central portion (112,212) has a first surface (118,218) and a second surface (120,220), and the first end portion (114,214) and the second end portion (116,216) extend from the central portion (112,212) at a first longitudinal edge (124,224) and a second longitudinal edge (128,228) of the central portion (110,210), respectively;

a second layer (150,250) attached to the first layer (110,210), the second layer (150,250) being arranged in abutment with the second surface (120,220) of the central portion (112,212) of the first layer (110,210);  
fastening means (105,205) arranged to allow connecting:

- a circumferential edge (122,222) of the first end portion (114,214) of the first layer (110,210) to the first longitudinal edge (124,224) of the central portion (112,212) of the first layer (110,210),

- a circumferential edge (126,226) of the second end portion (116,216) of the first layer (110,210) to the second longitudinal edge (128,228) of the central portion (112,212) of the first layer (110,210),

- a first lateral edge (130,230) of the central portion (112,212) of the first layer (110,210) to the first surface (118,218) of the central portion (112,212) of the first layer (110,210) along a laterally extending portion (132,232) of the first surface (118,218),

such that the mattress (100,200), when rolled up with the first surface (118,218) of the first layer (112,212) facing outwardly, is configurable into an essentially cylindrical structure by fastening the fastening means.

2. The portable mattress (100,200) according to claim 1, wherein, when the mattress (100,200) is being configured into an essentially cylindrical structure, the second layer (150,250) is fully enclosed inside the first layer (110,210).

3. The portable mattress (200) according to claim 1 or 2, wherein the fastening means (105,205) comprises one or more zippers.

4. The portable mattress (100,200) according to any one of the preceding claims, wherein the first layer (110,210) comprises a water-resistant material.

5. The portable mattress (100,200) according to claim 4, wherein the first layer (110,210) comprises a polyamide-based material or a polyethylene naphthalate-based material.

6. The portable mattress (100,200) according to any one of the preceding claims, wherein the second layer (150,250) comprises a polymeric foam material.

7. The portable mattress (200) according to any one of the preceding claims, wherein the second layer (250) comprises a base layer (252) and an upper layer (254), the base layer (252) facing the first layer (210), wherein the base layer is a polyurethane foam with a density within the range 20-40 kg/m<sup>3</sup> and a hardness within the range 100-140 N, and the upper layer comprises a polyurethane-based foam with a density within the range 40-60 kg/m<sup>3</sup> and a hardness within the range 60-80 N.

8. The portable mattress according to any one of the preceding claims, further comprising a textile cover (280) attached to the central portion (212) of the first layer (210) along edges thereof, the textile cover (280) enclosing the second layer (250) and attaching the second layer (250) to the first layer (210), said textile cover (280) having an opening (281) such as to allow removing the second layer (250) from the first layer (210).

9. The portable mattress (200) according to claim 8, wherein the opening (281) is sealable by a second zipper (282) arranged such that a handle (284) of a slider of the zipper is located on the inside of the textile cover (280).

10. The portable mattress (200) according to claim 8 or 9, wherein the second layer (250) has a plurality of slits (256) in a surface of the second layer (250) that is arranged in abutment with the second surface (220) of the first layer (210), said plurality of slits (256) extending in a lateral direction from the first longitudinal edge (224) to the second longitudinal edge (228) of the second layer (250).

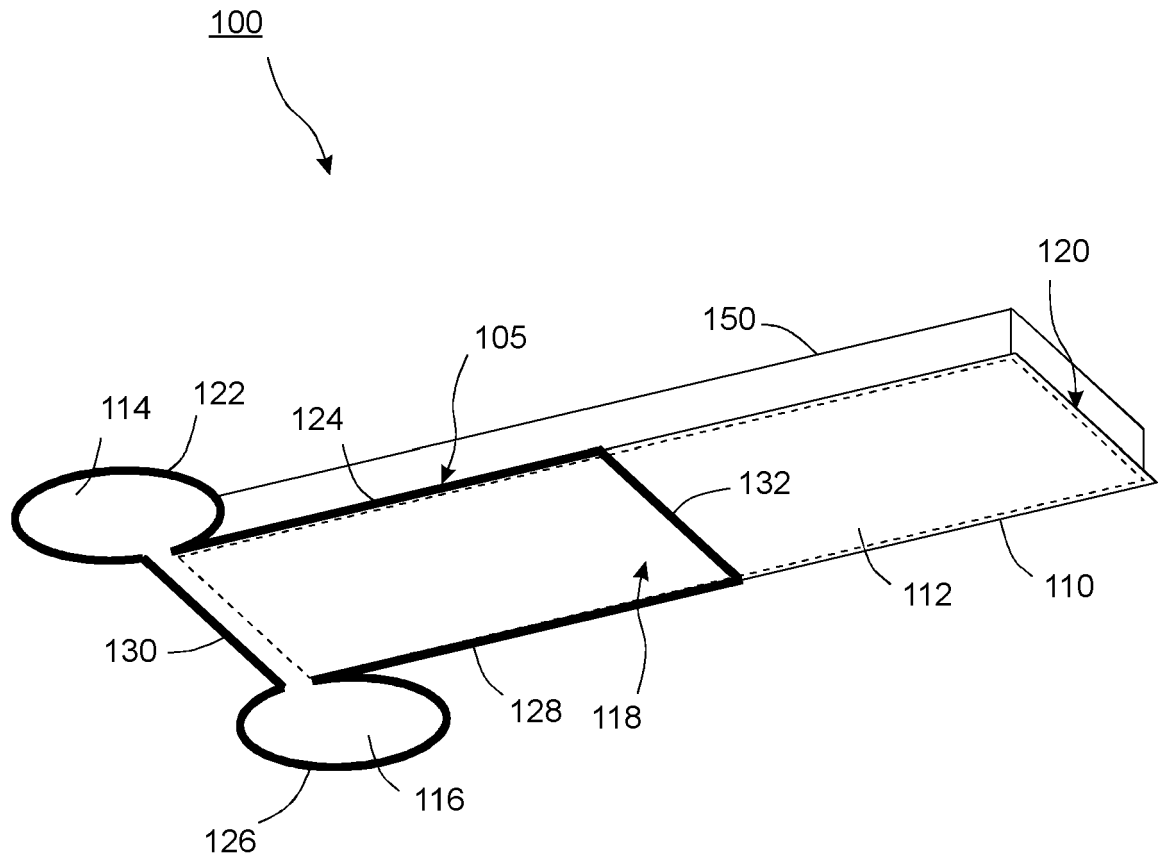
- 11. The portable mattress (200) according to claim 10, wherein the plurality of slits (256) is arranged in parallel to each other and at substantially equal distances from each other. 5
  
- 12. The portable mattress (200) according to any one of the preceding claims, further comprising second fastening means (260a, 260b) arranged to allow connecting a point along the first lateral edge (230) of the central portion (212) of the first layer (210) to a point on the first surface (218) of the central portion (212) of the first layer (210) along the laterally extending portion (232) of the first surface (218), such that the mattress (200), when rolled up with the first surface (218) of the first layer (212) facing outwardly, may be secured in a rolled-up state by fastening the second fastening means (260a, 260b). 10  
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- 13. The portable mattress (200) according to claim 12, wherein the second fastening means (260a, 260b) comprises hook and loop fastening. 20
  
- 14. The portable mattress (200) according to any one of the preceding claims, further comprising one or more straps (270a, 270b) facing the first surface (218) of the central portion (212) of the first layer (210), the one or more straps (270a, 270b) extending in a substantially lateral direction, wherein each one of the one or more straps (270a, 270b) is connected with a first end to the first longitudinal edge (224) of the central portion (212) of the first layer (210) and with a second end to the second longitudinal edge (228) of the central portion (212) of the first layer (210). 25  
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*Fig 1*

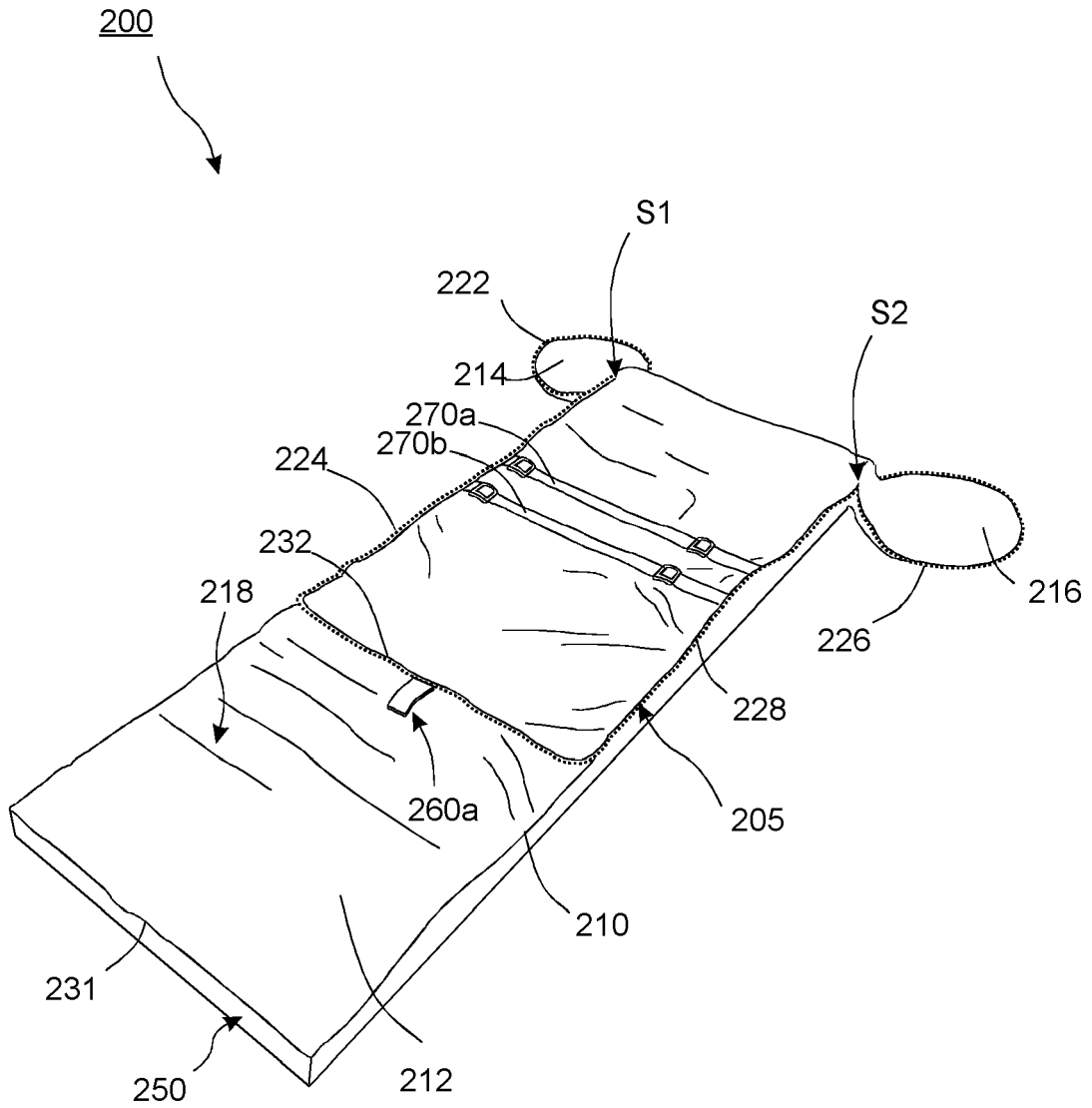


Fig 2

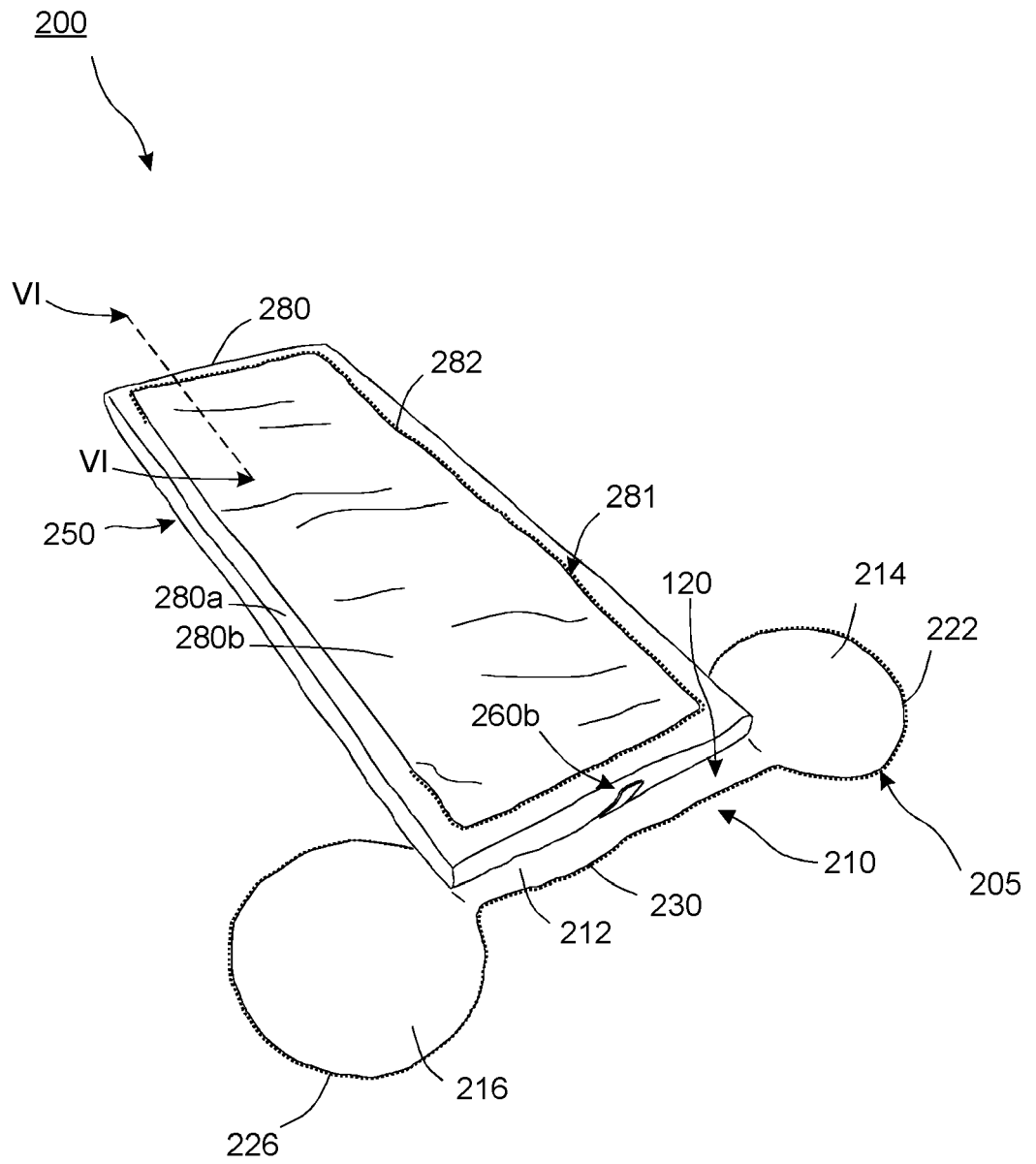
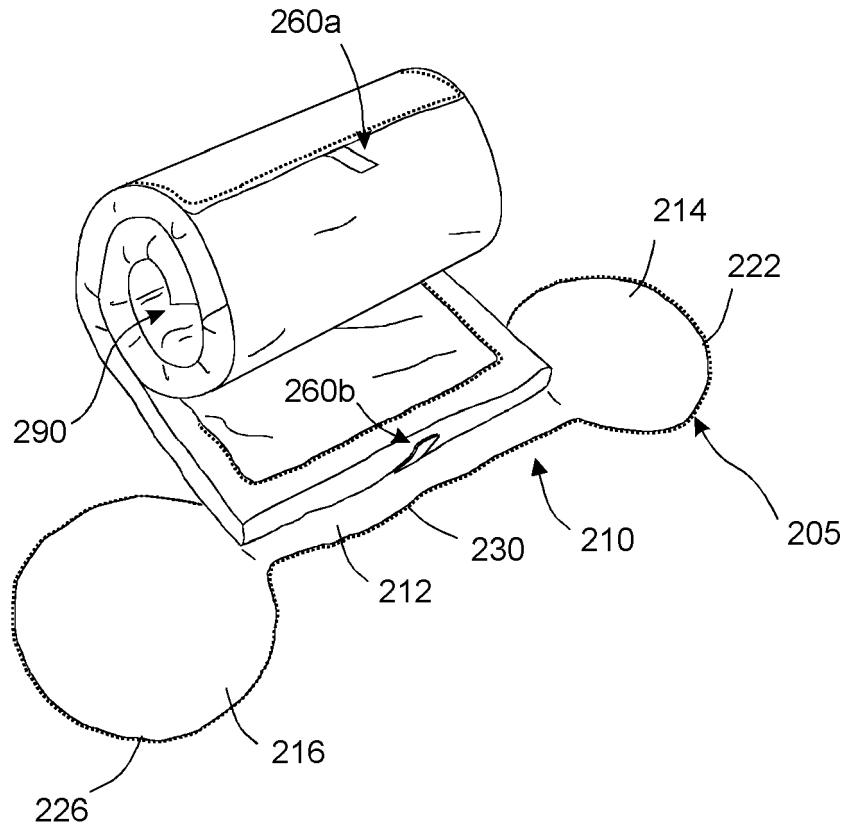
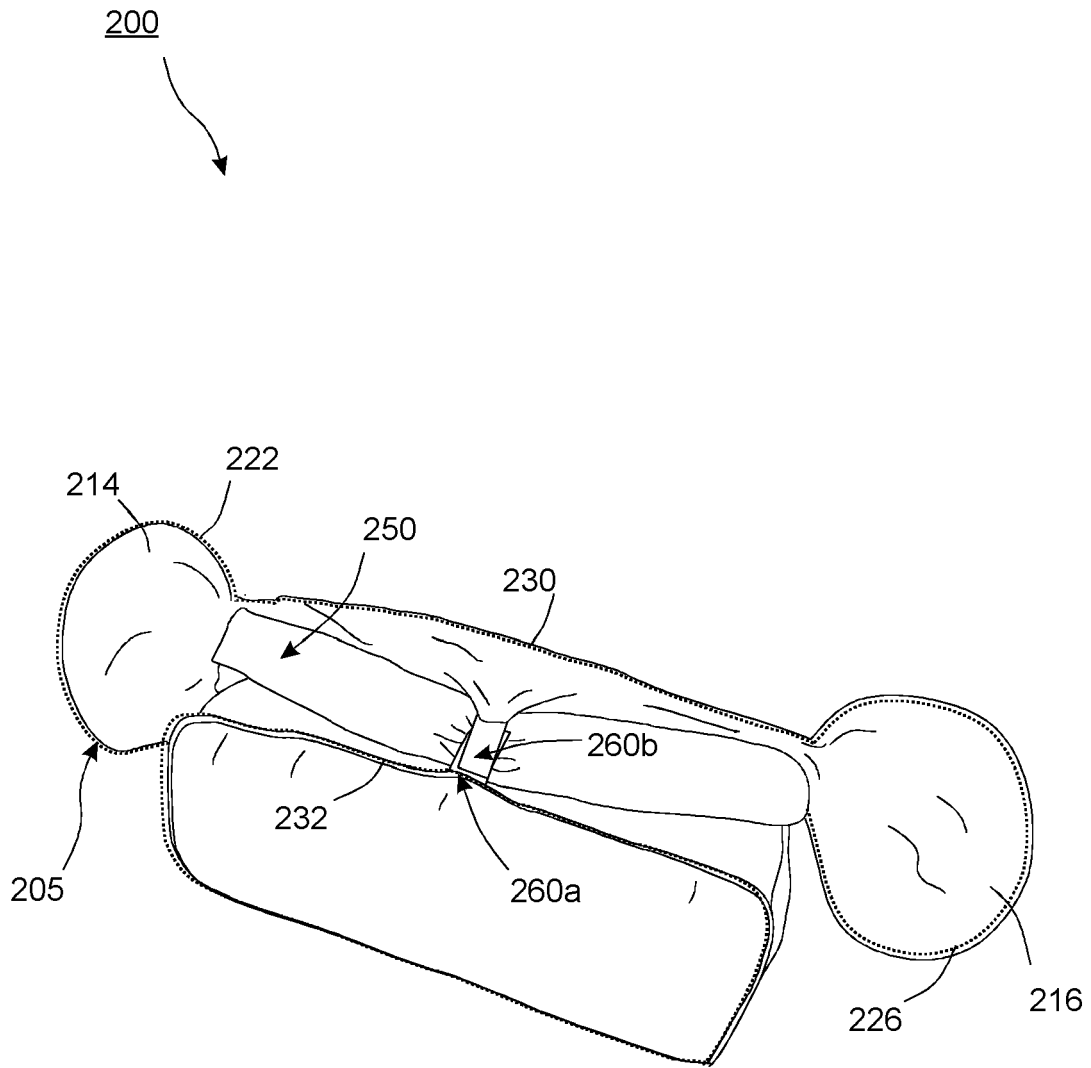


Fig 3

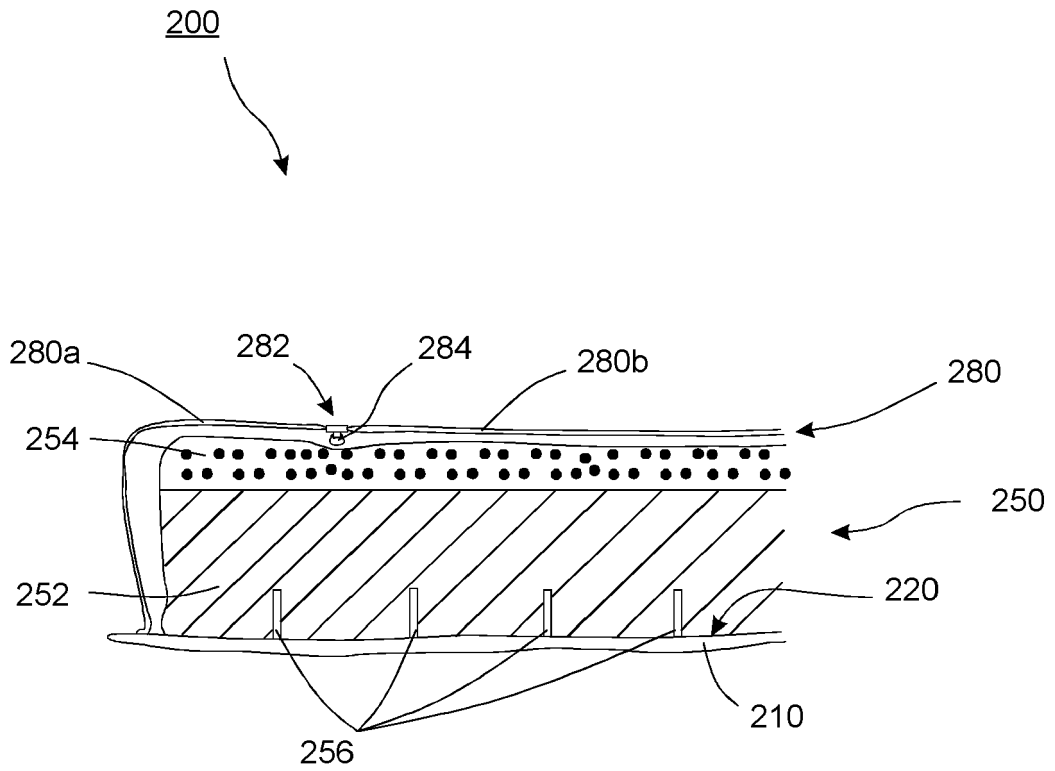
200  
↙



*Fig 4*



*Fig 5*



*Fig 6*



EUROPEAN SEARCH REPORT

Application Number  
EP 17 15 3681

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5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
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