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(54) MATTRESS ASSEMBLY SUITABLE FOR BABIES WITH REFLUX, ITS USE AND METHOD OF MANUFACTURING THE MATTRESS ASSEMBLY

MATRATZENANORDNUNG FÜR BABYS MIT REFLUX, IHRE VERWENDUNG UND VERFAHREN ZUM HERSTELLEN DER MATRATZENANORDNUNG

ENSEMBLE DE MATELAS CONVENANT À DES BÉBÉS SOUFFRANT DE REFLUX, SON UTILISATION ET PROCÉDÉ DE FABRICATION

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(56) References cited:
EP-A1- 3 111 807
FR-A1- 2 616 641
US-A- 4 905 330
US-A- 5 430 901

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Description

TECHNICAL FIELD

[0001] The invention relates to a mattress assembly comprising a base with head and foot end and a wedge-shaped insert suitable for babies with reflux, as well as its use in a baby or child's bed and the production method.

PRIOR ART

[0002] Many babies, up to about 70% of the group of healthy babies, have some form of reflux in which stomach contents flow back into the oesophagus. The cause of this is a not yet fully developed sphincter between the oesophagus and stomach. It mainly occurs in babies between 0 and 6 months, after which it usually disappears on its own.

[0003] A frequently given piece of advice is to raise the head end of the baby's bed to prevent stomach contents from flowing back.

[0004] This raising is done, for example, by placing blocks under the legs at the head end. A disadvantage here is that the bed can become unstable as a result. The blocks can slide out from under the legs due to the movement of the baby while sleeping. This is an unsafe situation. An additional problem is that because the bed as a whole is placed at an angle, it will also take up more space than a normally placed bed. This space is not always available.

[0005] Another known solution is the use of specific mattresses for babies with reflux. Such a reflux wedge-shaped mattress replaces an ordinary mattress in the baby's bed. The wedge-shaped mattress is thicker at the head end than at the foot end. The disadvantage of these wedge-shaped mattresses is that the mattress is only suitable for babies with reflux. If a baby does not have reflux or when the reflux disappears over time, it is necessary to replace the mattress with a regular mattress so that the baby can sleep in a normal horizontal position. In a baby, when periods with reflux are alternated with periods without reflux, it is even recommended to have two mattresses for the baby, a regular mattress and a wedge-shaped mattress.

[0006] A solution is known from FR 2 616 641. FR '641 describes a transformable mattress. The mattress consists of two prismatic blocks. One block has a triangular cross-section and the other block a trapezoidal cross-section. The two blocks are connected to each other at a transverse edge. By moving the block with the triangular cross-section, a mattress can be converted from a regular mattress to a wedge-shaped mattress. This solution has the drawback that the mattress is not converted into a wedge-shaped mattress over its entire length, so that it can only be used to a limited length. In addition, the wedge-shaped mattress has an unusual shape for the use of a fitted sheet. After all, the connection between the two blocks is on the surface, which is not comfortable.

[0007] Another known mattress is known from US 5 430 901. This describes a therapeutic mattress with two incisions at the foot end. The part of the mattress between the two incisions can be rolled up, so that the foot end is raised. The drawback of this solution is that with the mattress from US '901 it is not possible to tilt the mattress completely or make it wedge-shaped, so that a comfortable position is not possible in which the head takes a higher position with respect to the feet.

[0008] Another known solution is described in EP 3 111 807. Described herein is a mattress for a bed in a truck cabin. The mattress comprises on a first side a wedge-shaped part which can be moved to an opposite side, thereby forming a wedge-shaped mattress. The disadvantage of this mattress is that in the wedge-shaped condition a large gap is created between the mattress and the bed at the head end, which is potentially dangerous for use with infants and is unacceptable.

[0009] Finally, US 4 905 330 describes a composite piece of furniture and training device. The piece of furniture comprises five cushion parts that are pivotably connected to each other. Two of the cushion parts are wedge-shaped. The disadvantage of this composite piece of furniture and training device is that a mattress cannot be formed that is wedge-shaped over its entire length, thus not allowing a comfortable position in which the head assumes a higher position with respect to the feet.

[0010] The object of the invention is to provide a device which overcomes these drawbacks.

SUMMARY OF THE INVENTION

[0011] In a first aspect, the present invention relates to a device according to claim 1.

[0012] The advantage of the invention is especially that the mattress assembly can be used for both babies with and babies without reflux.

[0013] The mattress assembly comprises a base with head and foot end and a wedge-shaped insert. When the insert is positioned at the level of the foot end, the mattress assembly is not sloped, and the mattress assembly is suitable for a baby without reflux. When the insert is positioned at the level of the head end, the mattress assembly is sloped, with the head end being raised relative to the foot end. The mattress assembly is now suitable for babies with reflux.

[0014] A specific preferred embodiment concerns a device according to claim 4. The insert is received in an incision at the level of the foot end. The advantage is that by incorporating the wedge-shaped insert into the incision at the level of the foot end, possible movements of the insert relative to the base are limited.

[0015] A specific preferred embodiment concerns a device according to claim 5. The insert is incorporated in an incision at the level of the head end. This has the advantage that the slope is completely formed by the base of the mattress assembly. This is more comfortable

for the baby than an insert positioned on top of the base at the level of the head end. In that case there is always at least a minimal height difference in the mattress assembly at the transition from the insert to the base. An additional advantage is that by accommodating the wedge-shaped insert in the incision at the level of the head end, possible movements of the insert with respect to the base are limited.

[0016] Preferred embodiments of the device are set out in claims 2 to 13.

[0017] In a second aspect of claim 14, the invention relates to the use of a mattress assembly according to the first aspect in a baby or child's bed.

[0018] In a third aspect, the present invention relates to a method according to claim 15.

[0019] This method has the advantage, among others, that the wedge-shaped insert is formed from the base in a quick and economical manner.

DESCRIPTION OF THE DRAWINGS

[0020]

Figure 1 shows a side view of an example not according to the present invention, wherein the insert is positioned at the level of the foot end.

Figure 2 shows a side view of an example not according to the present invention, wherein the insert is positioned at the level of the head end.

Figure 3 shows a side view of an alternative example not according to the present invention, wherein the insert is received in the incision at the level of the foot end.

Figure 4 shows a side view of yet another alternative example not according to the present invention, wherein the insert is received in the incision at the level of the foot end.

Figure 5 shows a side view of an alternative example not according to the present invention, wherein the insert is positioned at the level of the head end.

Figure 6 shows a side view of a preferred embodiment of the present invention, wherein the insert is received in the incision at the level of the foot end.

Figure 7 shows a side view of a preferred embodiment of the present invention, wherein the insert is received in the incision at the level of the head end.

Figure 8 shows a side view of a preferred embodiment of the present invention, wherein the insert is received in the incision at the level of the head end and wherein the edge of the bed at the level of the head end is shown.

DETAILED DESCRIPTION

[0021] Unless otherwise defined, all terms used in the description of the invention, including technical and scientific terms, have the meaning as commonly understood by a person skilled in the art to which the invention pertains. For a better understanding of the description of the invention, the following terms are explained explicitly.

[0022] In this document, 'a' and 'the' refer to both the singular and the plural, unless the context presupposes otherwise. For example, 'a segment' means one or more segments.

[0023] When the term 'around' or 'about' is used in this document with a measurable quantity, a parameter, a duration or moment, and the like, then variations are meant of approx. 20% or less, preferably approx. 10% or less, more preferably approx. 5% or less, even more preferably approx. 1% or less, and even more preferably approx. 0.1% or less than and of the quoted value, insofar as such variations are applicable in the described invention. However, it must be understood that the value of a quantity used where the term 'about' or 'around' is used, is itself specifically disclosed.

[0024] The terms 'comprise', 'comprising', 'consist of', 'consisting of', 'provided with', 'include', 'including', 'contain', 'containing', are synonyms and are inclusive or open terms that indicate the presence of what follows, and which do not exclude or prevent the presence of other components, characteristics, elements, members, steps, as known from or disclosed in the prior art.

[0025] Quoting numerical intervals by endpoints comprises all integers, fractions and/or real numbers between the endpoints, these endpoints included.

[0026] In a first aspect, the invention relates to a mattress assembly.

[0027] According to the invention, the mattress assembly comprises a base with head and foot end and a wedge-shaped insert, the wedge-shaped insert being formed from the base of the base and having a length shorter than the length of the base.

[0028] The advantage of the present invention is that the assembly can be used modularly. The mattress assembly is both suitable for babies and children without as well as for babies and children with reflux. By correctly positioning the wedge-shaped insert, the mattress assembly is not sloped in one case, making the mattress assembly suitable for babies and children without reflux, and in the other case, the mattress assembly is sloped, making it suitable for babies and children with reflux. Due to the modular nature of the mattress assembly, it can be adapted to the situation.

[0029] A recommended measure for reflux is to raise the head end. This can be achieved, for example, by positioning a wedge-shaped insert at the level of the head end under the base of the mattress assembly. If the wedge-shaped insert extends under the full length of the base, the base will rotate about an axis on the lower outer edge of the mattress assembly at the base of the mattress

assembly. This means that the top outer edge of the mattress assembly at the head end of the mattress assembly will move away from the edge of the bed. According to the EN 16890-2017 standard, the distance between the outer edge of the mattress assembly and the bed may not exceed 30 mm for safety reasons. The more the head end of the mattress assembly is raised with the aid of a wedge-shaped insert that extends under the full length of the base, the more the top outer edge of the mattress assembly moves away from the head end of the bed. To limit this removal and to comply with the EN 16890-2017 standard, it is necessary to move the axis of rotation of the foot end towards the head end. This can be done with a wedge-shaped insert with a length that is shorter than the length of the base.

[0030] In an embodiment, the insert will be at least 10% shorter than the length of the base, more particularly at least 20%, even more particularly at least 30%, even more particularly at least 40%, and most in particular at least 50%.

[0031] The incision determines the correct positioning of the wedge-shaped insert at the foot end and is suitable for limiting the freedom of movement of the wedge-shaped insert so that it does not shift from a desired position at the foot end by the movements of the baby or child.

[0032] The incision preferably comprises one or more incisions which cut from the base a volume corresponding to the wedge-shaped insert. Preferably, one incision is parallel to the top surface of the mattress assembly.

[0033] According to to the invention, the base is provided with lateral incisions at the level of the head and foot ends and extending in the longitudinal direction of the base, suitable for receiving the insert.

[0034] The incisions determine the correct positioning of the wedge-shaped insert at the foot end and at the head end and are suitable for limiting the freedom of movement of the wedge-shaped insert so that it does not shift from a desired position at the foot end or the head end by the movements of the baby or child.

[0035] The incision at the foot end preferably comprises one or more incisions that cut from the base a volume corresponding to the wedge-shaped insert. Preferably, one incision at the foot end is parallel to the top surface of the mattress assembly. The incision at the head end is preferably a single incision parallel to the top surface of the mattress assembly.

[0036] In a preferred embodiment, the mattress assembly is not sloped when the insert is positioned at the level of the foot end of the base.

[0037] In this position, the mattress assembly is suitable for a baby or child without reflux.

[0038] Preferably, the incision at the base end comprises one or more incisions that cut from the base a volume corresponding to the wedge-shaped insert. When the wedge-shaped insert is properly positioned at the foot end, the wedge-shaped insert fits into the volume cut out of the base. The base and the wedge-shaped insert form a beam shape, so that the mattress assembly is not sloped.

[0039] In a preferred embodiment, the mattress assembly is sloped when the insert is positioned at the level of the head end of the base.

[0040] For example, the wedge-shaped insert is positioned under or on the base at the level of the head end or received in the lateral incision at the level of the head end. As a result, the head end is raised relative to the foot end and the mattress assembly is sloped.

[0041] According to a preferred embodiment, the insert is received in the incision at the level of the foot end.

[0042] Because the insert is received in the incision at the level of the foot end, the freedom of movement of the insert is limited and it is difficult for the insert to be moved due to the movements of the baby.

[0043] According to a preferred embodiment, the insert is received in the incision at the level of the head end.

[0044] Because the insert is received in the incision at the level of the head end, the freedom of movement of the insert is limited and it is difficult for the insert to be moved due to the movements of the baby.

[0045] According to an embodiment, the base has an angle of inclination alpha (a) of between 2° and 30°, more preferably between 2° and 25°, more preferably between 5° and 20°.

[0046] By positioning the wedge-shaped insert at the head end of the mattress assembly, the mattress assembly is sloped. The angle of this slope is measured between the line of the top surface of the mattress assembly when the wedge-shaped insert is positioned at the head end and the line of the top surface of the mattress assembly when the wedge-shaped insert is positioned at the foot end. This is the angle alpha (α) through which the top surface of the mattress assembly rotates. This corresponds to the smallest angle of the wedge-shaped body. An angle between 2° and 30° is recommended for a baby or child with reflux. A smaller angle has no effect on preventing the stomach contents from flowing back into the oesophagus. A larger angle is not comfortable for sleeping and will cause the baby or child to slide to the foot end while sleeping.

[0047] According to an embodiment, the profile of the insert is a right-angled triangle.

[0048] According to the EN 16890-2017 standard, the distance between the outer edge of the mattress assembly and the bed may not exceed 30 mm for safety reasons. By positioning a wedge-shaped insert at the level of the head end to raise the head end, the top outer edge of the mattress assembly is further removed from the bed. The use of an insert with a right-angled triangle as a profile limits the removal of the bed edge compared to other profiles. In this way, the mattress assembly remains connected to the bed as closely as possible.

[0049] According to an embodiment, the insert extends in the longitudinal direction of the base from the head or foot end to the centre of the base.

[0050] According to the EN 16890-2017 standard, the

distance between the outer edge of the mattress assembly and the bed may not exceed 30 mm for safety reasons. To limit this removal and to comply with the EN 16890-2017 standard, it is necessary to move the axis of rotation of the foot end towards the head end. This can be done with a wedge-shaped insert with a length that is shorter than the length of the base. The shorter the wedge-shaped insert, the more the rotation axis of the foot end moves towards the head end.

[0051] If a noticeably short wedge-shaped insert is positioned at the level of the head end, the mattress assembly will be raised very locally at the level of the head end. The baby or child sleeps with a bent neck, which is an uncomfortable position and is not an optimal solution for reflux.

[0052] The wedge-shaped insert is formed from the foot end of the base. With a wedge-shaped insert extending from the head end or foot end to the centre of the base, an embodiment is possible in which, by positioning the wedge-shaped insert at the head end, the mattress assembly is raised at the head end the same height as the mattress assembly is lowered at the foot end. The mattress assembly has a slope with an angle alpha (α) over the full length of the mattress assembly. This is more comfortable for the baby or child and is also more beneficial in preventing stomach contents from flowing back into the oesophagus.

[0053] According to an embodiment, the lateral incision at the head end is in a zone from the centre line of the base to 1 cm from the top surface of the base.

[0054] A lateral incision at the level of the head end in a zone from the centre line of the base to 1 cm from the top surface of the base provides enough material on both sides of the incision to prevent the base from tearing at the level of the incision. Sufficient material remains so that when the wedge-shaped insert is received in the incision at the head end, the transition between the wedge-shaped insert and the base is flattened by the overlying material of the base, keeping the mattress assembly comfortable for the baby or child. The removal at the level of the head end of the top outer edge of the mattress assembly of the bed is still limited, so that standard EN 16890-2017 is complied with. This removal is smaller the closer the lateral incision is to the top surface of the base.

[0055] According to an embodiment, the length of the insert is shorter than the length of a lateral incision.

[0056] The insert is preferably at least 0.5 cm shorter than the length of a lateral incision, more preferably at least 2.5 cm and even more preferably at least 5 cm.

[0057] Because the insert is shorter than the length of a lateral incision, it is easier to receive the insert in a lateral incision.

[0058] According to an embodiment, the base and insert are made of foamed material.

[0059] The base and insert are formed from a suitable foam material for supporting the body of a baby or child. Non-limiting examples of such materials are polyurethane foam (PU), KAPUA® foam, HR28S, HR38H, HR43H, HR45S, HR55M, HR55H and HR60S. The base and insert can be formed from the same or a different material.

[0060] According to an embodiment, the lateral head end incision and the lateral foot end incision are spaced at least 0.5 cm in height from each other.

[0061] Because the lateral incisions can be arranged over more than half the length of the base, it is necessary to separate the lateral incisions at the foot and head ends from each other in height. If not, the base is cut through completely. The incisions are preferably at least 0.5 cm apart to avoid tearing of the base where the lateral incisions at the foot and head ends overlap.

[0062] According to an embodiment, the mattress assembly comprises a mattress-cover suitable for enclosing the base and/or the insert.

[0063] A mattress-cover is suitable to protect the material of the base and the insert. Non-limiting examples of suitable materials for a mattress-cover are TENCEL/PES in a 65%/35% composition and 100% quilted PES.

[0064] According to an embodiment, the mattress assembly comprises a separate mattress-cover for the base and for the insert.

[0065] According to a preferred embodiment, the mattress assembly comprises a common mattress-cover for the base and the insert. The mattress-cover comprises a first part and a second part, the first part comprising a side of a zip, comprising a retainer box, a slider and a top stop, and the second part comprising a corresponding side of the zip, the zip being configured to zip the first part and the second part together, and wherein the zipped together first and second parts are configured to enclose the mattress assembly, the wedge-shaped insert being positioned at the level of the foot end of the base.

[0066] According to a further embodiment, the mattress-cover comprises a third part, the third part comprising a side of a zip, corresponding to the side of the zip of the first part, the zip being configured to zip the first part and the third part together and wherein the zipped together first and third parts are configured to enclose the mattress assembly, the wedge-shaped insert being positioned at the level of the head end of the base.

[0067] The retainer box of the zip fastener is located on the outside of the mattress-cover and the top stop on the inside of the mattress-cover. As a result, when closed, the slider of the zip is positioned between the retainer box and the top stop, so that a baby or child cannot accidentally open the zip of the mattress-cover.

[0068] In a second aspect, the invention relates to the use of an assembly according to the first aspect in a baby or child's bed.

[0069] The structure of the mattress assembly makes it very suitable for use in a baby or child's bed. The mattress assembly is comfortable both in positioning the wedge-shaped insert at the head end and at the foot end. In both cases, the mattress assembly complies with the

safety standard EN 16890-2017.

[0070] By positioning the wedge-shaped insert at the foot end, the mattress assembly is not sloped. The mattress assembly is suitable for positioning a sleeping baby or child without reflux in the bed in a correct and comfortable way.

[0071] In case the baby or child suffers from reflux, the mattress assembly is easily adjustable. The wedge-shaped insert is removed from the foot end and positioned at the head end. This raises the head end. The baby is or the child is correctly positioned to prevent stomach contents from flowing back into the oesophagus during sleep. As a result, the sleeping baby or child will experience less reflux.

[0072] When the baby or child no longer suffers from reflux, the mattress assembly is again easily adjustable to a mattress assembly that does not have a slope. The wedge-shaped insert is removed at the head end and repositioned at the foot end.

[0073] In a third aspect, the invention relates to a method of manufacturing a mattress assembly comprising a base with head and foot end and a wedge-shaped insert.

[0074] According to the invention, the method comprises the step of forming the wedge-shaped insert from the foot end of the base, the wedge-shaped insert having a length that is shorter than the length of the base.

[0075] The base is formed from a beam-like suitable material, such as a foam material. The wedge-shaped insert is cut from the beam-shaped material at the foot end to yield a base and a wedge-shaped insert fitting into the base.

[0076] According to an embodiment, the wedge-shaped insert is cut from the beam-shaped material with one cut.

[0077] According to the invention, the method comprises the additional step of providing at least one lateral incision at the level of the foot end of the base and extending in the longitudinal direction of the base, suitable for receiving the insert.

[0078] One lateral incision at the foot end is preferably made parallel to the top surface. Preferably, one or more additional incisions simultaneously form the wedge-shaped insert from the foot end of the base. This has the advantage that additional steps in the method are avoided and that the profile of the insert is automatically a right-angled triangle.

[0079] According to the invention, the method comprises the additional step of providing at least one lateral incision at the level of the head end and extending in the longitudinal direction of the base, suitable for receiving the insert.

[0080] One lateral incision at the head end is preferably made parallel to the top surface. The present invention will now be described in more detail with reference to figures which are not limiting.

DESCRIPTION OF THE DRAWING

[0081] **Figure 1** shows a side view of an example not according to the present invention, wherein the insert is positioned at the level of the foot end.

[0082] The mattress assembly comprises a base 1 with a foot end 2 and a head end 3. A wedge-shaped insert 4 is formed from the foot end 2 of the base 1 by making a lateral incision from the centre along the longitudinal direction of the top surface of the base 1 to the side surface at the foot end 2. The wedge-shaped insert 4 is positioned at the level of the foot end 2. The mattress assembly is not sloped and is suitable for positioning babies and children who do not suffer from reflux.

[0083] **Figure 2** shows a side view of the same example not according to the invention, wherein the insert 4 is positioned at the level of the head end 3.

[0084] The mattress assembly has a slope with an angle alpha (α), which corresponds to the smallest angle of the wedge-shaped insert 4. The slope runs the full length of the base 1, which is more comfortable to sleep on and a more effective reflux prevention measure than simply raising the head end 3.

[0085] The profile of the wedge-shaped insert 4 is a right-angled triangle, which ensures that the top outer edge of the mattress assembly does not move away from the bed, thus complying with the EN 16890-2017 standard.

[0086] **Figure 3** shows a side view of an alternative example not according to the present invention, wherein the insert is received in the incision at the level of the foot end.

[0087] The wedge-shaped insert 4 is formed at the foot end 2 from the base 1 by making two lateral incisions 5 from the centre along the longitudinal direction of the base 1 to the side face at the foot end 2, the incisions 5 having an angle alpha (α), which corresponds to the smallest angle of the wedge-shaped insert 4. The wedge-shaped insert 4 is received in the incisions 5 at the level of the foot end 2. This ensures that the wedge-shaped insert 4 is limited in its freedom of movement and that it is difficult to displace it due to movements of the baby or child. The mattress assembly is not sloped and is suitable for positioning babies and children who do not suffer from reflux.

[0088] **Figure 4** shows a side view of yet another alternative example not according to the present invention, wherein the insert is received in the incision at the level of the foot end.

[0089] The embodiment in **Figure 4** corresponds to the example in **Figure 3,** with the difference that the wedge-shaped insert 4 is formed from the base 1 according to a different orientation at the foot end 2.

[0090] **Figure 5** shows a side view of an alternative example not according to the present invention, wherein the insert is positioned at the level of the head end.

[0091] The mattress assembly has a slope with an angle alpha (α), which corresponds to the smallest angle

of the wedge-shaped insert 4. Because the wedge-shaped insert 4 has been removed from the lateral incisions 5, the part of the base 1 above the lateral incisions 5 rotates at an angle alpha (α) until the lateral incisions 5 abut each other. As a result, the slope runs the full length of the base 1, which is more comfortable to sleep on and a more effective reflux prevention measure compared to simply raising the head end 3.

[0092] The profile of the wedge-shaped insert 4 is a right-angled triangle, which ensures that the top outer edge of the mattress assembly does not move away from the bed, thus complying with the EN 16890-2017 standard.

[0093] **Figure 6** shows a side view of a preferred embodiment of the present invention, wherein the insert is received in the incision at the level of the foot end.

[0094] The wedge-shaped insert 4 is formed at the foot end 2 from the base 1 by making two lateral incisions 5 a little beyond the centre, for example 5 cm, along the longitudinal direction of the base 1 to the side face at the foot end 2, the incisions 5 having an angle alpha (α), which corresponds to the smallest angle of the wedge-shaped insert 4. The wedge-shaped insert 4 is received in the incisions 5 at the level of the foot end 2. This ensures that the wedge-shaped insert 4 is limited in its freedom of movement and that it is difficult to displace it due to movements of the baby or child. The length of the wedge-shaped insert 4 is shorter than the length of the lateral incisions 5, so that the wedge-shaped insert 4 is easier to receive in the lateral incisions 5. The length of the wedge-shaped insert 4 is, for example, equal to half the length of the base 1. The mattress assembly is not sloped and is suitable for positioning babies and children who do not suffer from reflux.

[0095] At the head end 3 there is one lateral incision 6 which is parallel to the top surface of the base 1. The length of the lateral incision 6 reaches slightly past the centre of base 1 along the longitudinal direction, for example 5 cm. The lateral incisions 5 and 6 are at different heights so that the base 1 is not cut in two halves.

[0096] **Figure 7** shows a side view of a preferred embodiment of the present invention, wherein the insert is received in the incision at the level of the head end.

[0097] The mattress assembly has a slope with an angle alpha (α), which corresponds to the smallest angle of the wedge-shaped insert 4. Because the wedge-shaped insert 4 has been removed from the lateral incisions 5, the part of the base 1 above the lateral incisions 5 rotates at an angle alpha (α) until the lateral incisions 5 abut each other. Because the wedge-shaped insert 4 is received in the lateral incision 6 at the level of the head end 3, the part of the base 1 above the lateral incision 6 rotates at an angle alpha (α). As a result, the slope runs the full length of the base 1, which is more comfortable to sleep on and a more effective reflux prevention measure compared to simply raising the head end 3. The wedge-shaped insert 4 is limited in its freedom of movement, as a result of which it is difficult for it to slide due to movements of the baby or the child.

[0098] Because the length of the wedge-shaped insert 4 is slightly shorter than the lateral incision 6, the wedge-shaped insert 5 is easier to receive in the lateral incision 6.

[0099] Since the wedge-shaped insert 4 is received in the lateral incision 6, the top surface of the base 1 forms a continuous surface, which is more comfortable.

[0100] The profile of the wedge-shaped insert 4 is a right-angled triangle, which ensures that the top outer edge of the mattress assembly is only removed from the bed to a limited extent, so that the EN 16890-2017 standard can be met.

[0101] **Figure 8** shows a side view of a preferred embodiment of the present invention, wherein the insert is received in the incision at the level of the head end and wherein the edge of the bed at the level of the head end is shown.

[0102] **Figure 8** is a representation of the same embodiment of **Figure 7.** The bed edge 7 is shown at the head end in the figure. Because a wedge-shaped insert 4 with a right-angled triangle as a profile is received in the lateral incision 6, the top outer edge of the mattress assembly is only removed from the bed to a limited extent, so that the EN 16890-2017 standard can be met.

Claims

1. A mattress assembly comprising a base (1) with head (3) and foot (2) end and a wedge-shaped insert (4), wherein the wedge-shaped insert (4) is formed from the foot end (2) of the base (1) and has a length that is shorter than the length of the base (1), wherein the base (1) is provided with lateral incisions (5, 6) at the level of the head (3) and foot (2) ends and extending in the longitudinal direction of the base (1), suitable for receiving the wedge-shaped insert (4).

2. Mattress assembly according to any of the preceding claims, **characterised in that** the mattress assembly is not sloped when the insert (4) is positioned at the foot end (2) of the base (1).

3. Mattress assembly according to any of the preceding claims, **characterised in that** the mattress assembly is sloped when the insert (4) is positioned at the head end (3) of the base (1).

4. Mattress assembly according to any of the preceding claims, **characterised in that** the insert (4) is received in the incision (5) at the foot end (2).

5. Mattress assembly according to any of the preceding claims, **characterised in that** the insert (4) is received in the incision (6) at the head end (3).

6. Mattress assembly according to any of claims 2 to

5, **characterised in that** the base (1) has an angle of inclination alpha (a) between 2° and 30°.

7. Mattress assembly according to any of the preceding claims, **characterised in that** the profile of the insert (4) is a right-angled triangle.

8. Mattress assembly according to any of the preceding claims, **characterised in that** the insert (4) extends along the longitudinal direction of the base from the head (3) or foot (2) end to the centre of the base (1).

9. Mattress assembly according to any of the preceding claims, **characterised in that** the lateral incision (6) at the head end (3) is in a zone from the centre line of the base to 1 cm from the top surface of the base (1).

10. Mattress assembly according to any of the preceding claims 2 to 9, **characterised in that** the length of the insert (4) is shorter than the length of a lateral incision (5, 6).

11. Mattress assembly according to any one of the preceding claims, **characterised in that** the base (1) and insert (4) is made of foamed material.

12. Mattress assembly according to any of the preceding claims 2 to 11, **characterised in that** the lateral incision (6) at the head end (3) and the lateral incision (5) at the foot end (2) are at least 0.5 cm apart in height.

13. Mattress assembly according to any of the preceding claims, **characterised in that** the mattress assembly comprises a mattress-cover suitable for enclosing the base (1) and/or the insert (4).

14. Use of the mattress assembly according to any of the preceding claims in a baby or child's bed.

15. A method of manufacturing a mattress assembly comprising a base (1) with head (3) and foot (2) end and a wedge-shaped insert (4) comprising the step of forming the wedge insert (4) from the foot end (2) of the base (1) wherein the wedge-shaped insert (4) has a length that is shorter than the length of the base (1), wherein the method comprises the additional step of providing at least one lateral incision (5) at the level of the food end (2) of the base (1), and extending in the longitudinal direction of the base (1), suitable for receiving the wedge-shaped insert (4), and providing at least one lateral incision (6) at the level of the head end (3), and extending in the longitudinal direction of the base (1), suitable for receiving the wedge-shaped insert (4).

Patentansprüche

1. Matratzenanordnung, eine Basis (1) mit einem Kopf- (3) und einem Fußende (2) und einen keilförmigen Einsatz (4) umfassend, wobei der keilförmige Einsatz (4) aus dem Fußende (2) der Basis (1) gebildet ist und eine Länge aufweist, die geringer als die Länge der Basis (1) ist, wobei die Basis (1) auf Höhe des Kopf- (3) und des Fußendes (2) mit seitlichen Einschnitten (5, 6) versehen ist, die sich in der Längsrichtung der Basis (1) erstrecken und dafür geeignet sind, den keilförmigen Einsatz (4) aufzunehmen.

2. Matratzenanordnung nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Matratzenanordnung nicht schräg ist, wenn der Einsatz (4) an dem Fußende (2) der Basis (1) positioniert ist.

3. Matratzenanordnung nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Matratzenanordnung schräg ist, wenn der Einsatz (4) an dem Kopfende (3) der Basis (1) positioniert ist.

4. Matratzenanordnung nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** der Einsatz (4) in dem Einschnitt (5) am Fußende (2) aufgenommen ist.

5. Matratzenanordnung nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** der Einsatz (4) in dem Einschnitt (6) am Kopfende (3) aufgenommen ist.

6. Matratzenanordnung nach einem der Ansprüche 2 bis 5, **dadurch gekennzeichnet, dass** die Basis einen Neigungswinkel alpha (a) zwischen 2° und 30° aufweist.

7. Matratzenanordnung nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** das Profil des Einsatzes (4) ein rechtwinkliges Dreieck ist.

8. Matratzenanordnung nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** sich der Einsatz (4) entlang der Längsrichtung der Basis von dem Kopf- (3) oder dem Fußende (2) zu der Mitte der Basis (1) erstreckt.

9. Matratzenanordnung nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** der seitliche Einschnitt (6) an dem Kopfende (3) in einer Zone von der Mittellinie der Basis bis 1 cm vor der Oberseite der Basis (1) liegt.

10. Matratzenanordnung nach einem der vorhergehen-

den Ansprüche 2 bis 9, **dadurch gekennzeichnet, dass** die Länge des Einsatzes (4) kleiner als die Länge eines seitlichen Einschnittes (5, 6) ist.

11. Matratzenanordnung nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Basis (1) und der Einsatz (4) aus einem Schaumstoff bestehen.

12. Matratzenanordnung nach einem der vorhergehenden Ansprüche 2 bis 11, **dadurch gekennzeichnet, dass** der seitliche Einschnitt (6) an dem Kopfende (3) und der seitliche Einschnitt (5) an dem Fußende (2) in der Höhe mindestens 0,5 cm beabstandet sind.

13. Matratzenanordnung nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Matratzenanordnung einen Matratzenüberzug umfasst, der geeignet ist, die Basis (1) und/oder den Einsatz (4) zu umschließen.

14. Verwendung der Matratzenanordnung nach einem der vorhergehenden Ansprüche in einem Baby- oder Kinderbett.

15. Verfahren zur Herstellung einer Matratzenanordnung, die eine Basis (1) mit einem Kopf- (3) und einem Fußende (2) und einen keilförmigen Einsatz (4) umfasst, den Schritt des Bildens des Keileinsatzes (4) aus dem Fußende (2) der Basis (1) umfassend, wobei der keilförmige Einsatz (4) eine Länge aufweist, die geringer als die Länge der Basis (1) ist, wobei das Verfahren den zusätzlichen Schritt des Bereitstellens mindestens eines seitlichen Einschnittes (5) auf Höhe des Fußendes (2) der Basis (1) umfasst, der sich in der Längsrichtung der Basis (1) erstreckt und dafür geeignet ist, den keilförmigen Einsatz (4) aufzunehmen, und des Bereitstellens mindestens eines seitlichen Einschnittes (6) auf der Höhe des Kopfendes (3), der sich in der Längsrichtung der Basis (1) erstreckt und dafür geeignet sind, den keilförmigen Einsatz (4) aufzunehmen.

Revendications

1. Ensemble matelas comprenant une base (1) avec une extrémité tête (3) et pied (2) et un insert en forme de coin (4), dans lequel l'insert en forme de coin (4) est formé à partir de l'extrémité pied (2) de la base (1) et a une longueur qui est plus courte que la longueur de la base (1), dans lequel la base (1) est munie d'incisions latérales (5, 6) au niveau des extrémités tête (3) et pied (2) et s'étendant dans le sens longitudinal de la base (1), aptes à recevoir l'insert en forme de coin (4).

2. Ensemble matelas selon l'une quelconque des revendications précédentes, **caractérisé en ce que** l'ensemble matelas n'est pas incliné lorsque l'insert (4) est positionné au niveau de l'extrémité pied (2) de la base (1).

3. Ensemble matelas selon l'une quelconque des revendications précédentes, **caractérisé en ce que** l'ensemble matelas est incliné lorsque l'insert (4) est positionné au niveau de l'extrémité tête (3) de la base (1).

4. Ensemble matelas selon l'une quelconque des revendications précédentes, **caractérisé en ce que** l'insert (4) est reçu dans l'incision (5) au niveau de l'extrémité pied (2).

5. Ensemble matelas selon l'une quelconque des revendications précédentes, **caractérisé en ce que** l'insert (4) est reçu dans l'incision (6) au niveau de l'extrémité tête (3).

6. Ensemble matelas selon l'une des revendications 2 à 5, **caractérisé en ce que** la base (1) présente un angle d'inclinaison alpha (a) compris entre 2° et 30°.

7. Ensemble matelas selon l'une quelconque des revendications précédentes, **caractérisé en ce que** le profil de l'insert (4) est un triangle rectangle.

8. Ensemble matelas selon l'une quelconque des revendications précédentes, **caractérisé en ce que** l'insert (4) s'étend le long de la direction longitudinale de la base depuis l'extrémité tête (3) ou pied (2) jusqu'au centre de la base (1).

9. Ensemble matelas selon l'une quelconque des revendications précédentes, **caractérisé en ce que** l'incision latérale (6) au niveau de l'extrémité tête (3) se situe dans une zone allant de la ligne médiane de la base jusqu'à 1 cm de la surface supérieure de la base (1).

10. Ensemble matelas selon l'une quelconque des revendications précédentes 2 à 9, **caractérisé en ce que** la longueur de l'insert (4) est plus courte que la longueur d'une incision latérale (5, 6).

11. Ensemble matelas selon l'une quelconque des revendications précédentes, **caractérisé en ce que** la base (1) et l'insert (4) sont constitués d'un matériau expansé.

12. Ensemble matelas selon l'une quelconque des revendications précédentes 2 à 11, **caractérisé en ce que** l'incision latérale (6) au niveau de l'extrémité tête (3) et l'incision latérale (5) au niveau de l'extrémité pied (2) sont espacées d'au moins 0,5 cm en hauteur.

13. Ensemble matelas selon l'une quelconque des revendications précédentes, **caractérisé en ce que** l'ensemble matelas comprend un couvre-matelas conçu pour enfermer la base (1) et/ou l'insert (4).

14. Utilisation de l'ensemble matelas selon l'une quelconque des revendications précédentes dans un lit de bébé ou d'enfant.

15. Procédé de fabrication d'un ensemble matelas comprenant une base (1) avec une extrémité tête (3) et pied (2) et un insert en forme de coin (4), comprenant l'étape consistant à former l'insert en coin (4) à partir de l'extrémité pied (2) de la base (1), dans lequel l'insert en forme de coin (4) a une longueur qui est plus courte que la longueur de la base (1), le procédé comprenant l'étape supplémentaire consistant à réaliser au moins une incision latérale (5) au niveau de l'extrémité pied (2) de la base (1), et s'étendant dans le sens longitudinal de la base (1), apte à recevoir l'insert en forme de coin (4), et à fournir au moins une incision latérale (6) au niveau de l'extrémité tête (3), et s'étendant dans le sens longitudinal de la base (1), apte à recevoir l'insert en forme de coin (4).

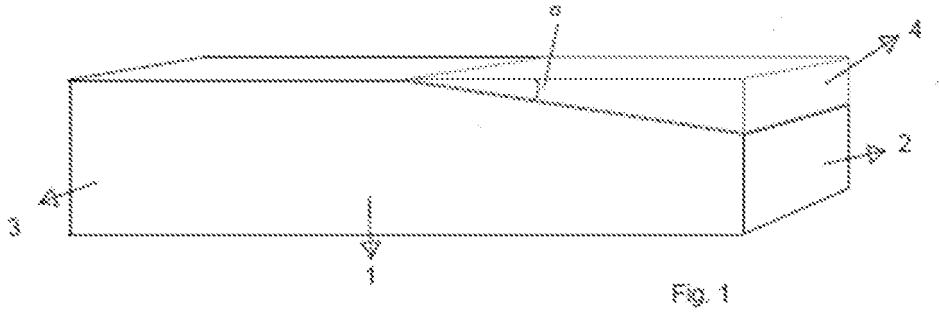

Fig. 1

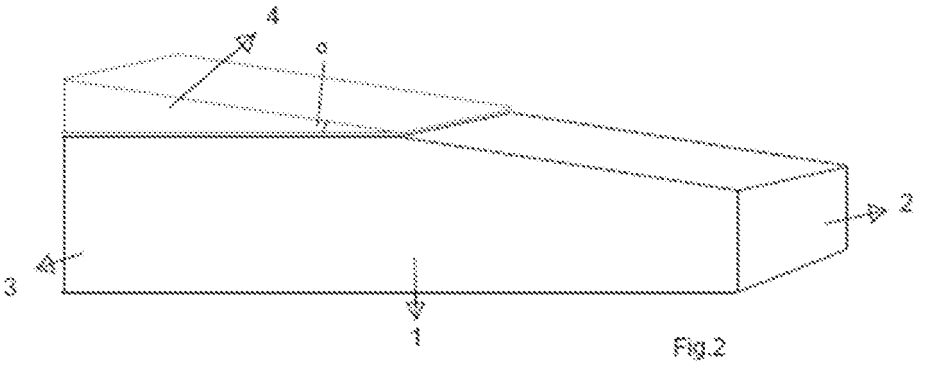

Fig.2

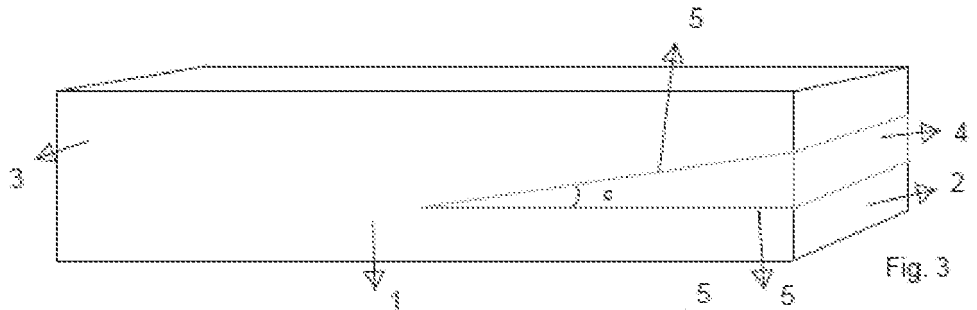

Fig. 3

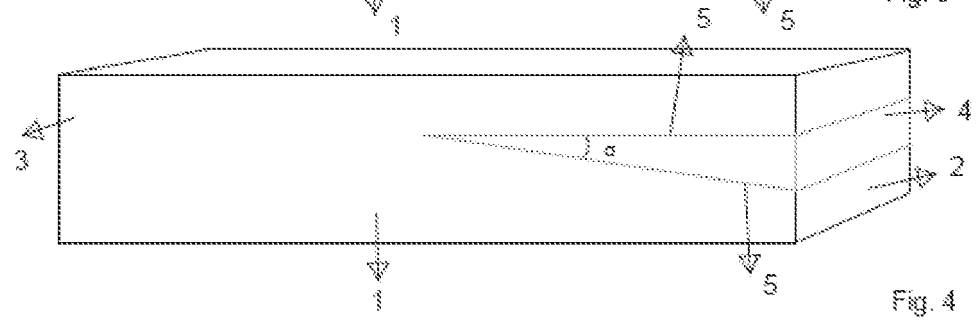

Fig. 4

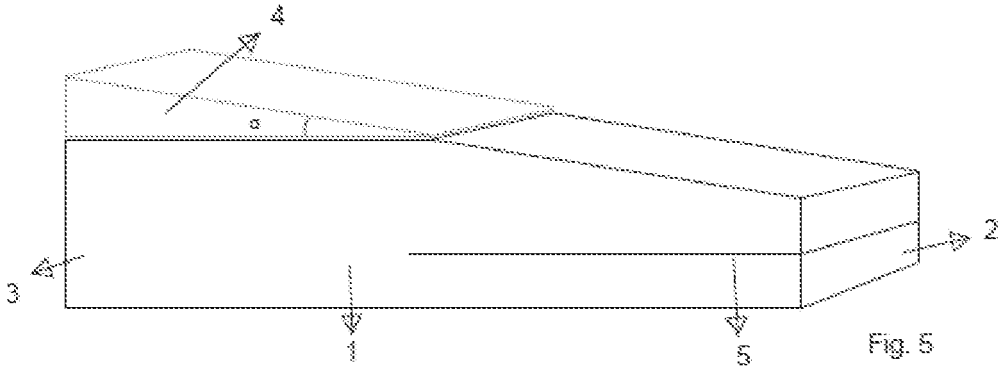

Fig. 5

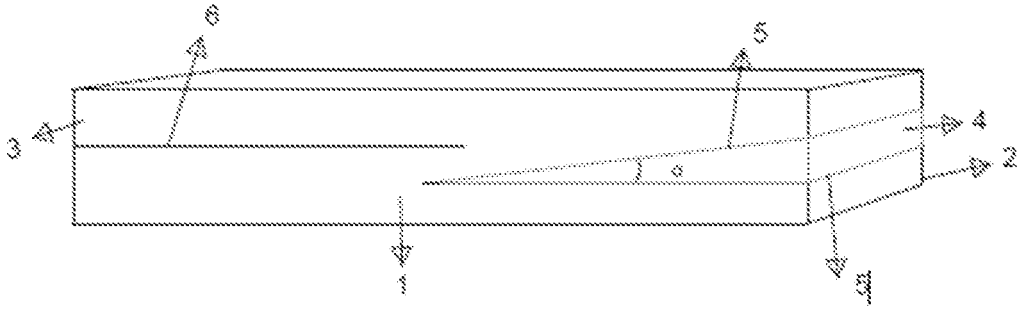

Fig. 6

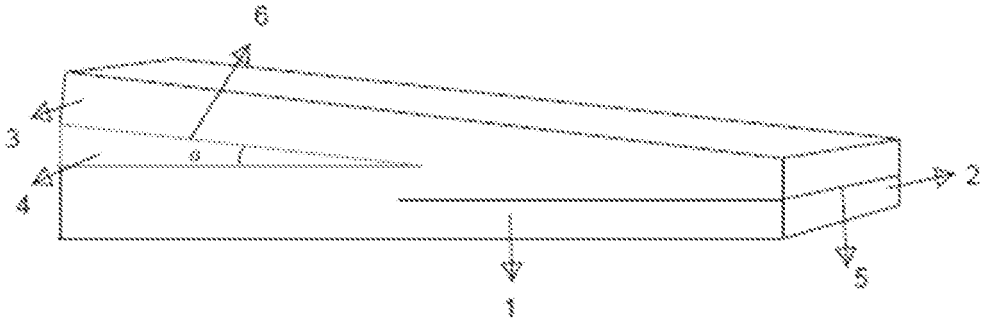

Fig. 7

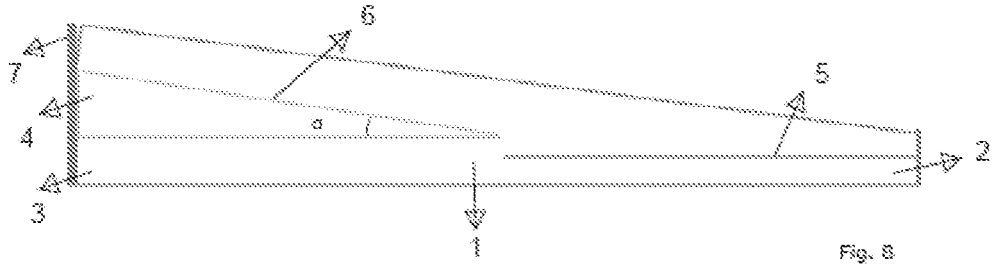

Fig. 8

REFERENCES CITED IN THE DESCRIPTION

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