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(54) **A CONVERTIBLE FURNITURE SYSTEM FOR OPTIONAL ESTABLISHING OF A CHAIR AND A SLEEPING MAT AND METHOD FOR ESTABLISHING THE CHAIR OR THE SLEEPING MAT**

(57) The invention relates to a convertible furniture system (1) and a method for optionally providing a chair (2) and a sleeping mat (3). It comprises a number of cushions (4) and at least two cushions (4) are hinged to each other to provide a cushion unit (5). At least one cushion (4) is a separate cushion (10), and the cushion unit (5) and the separate cushion (10) each include a number of sets (11) of straps (12). Each set (11) consists of two

straps (12) placed on the cushions' side surfaces (9) diametrically opposite each other. The convertible piece of furniture (1) also includes a number of flexible ribbons (13) that are designed to slide into the straps (12). The ends of each ribbon (13) are arranged to lock each other in a position and thereby fix the cushions (4) in a defined position to provide a chair (2) or a sleeping mat (3).

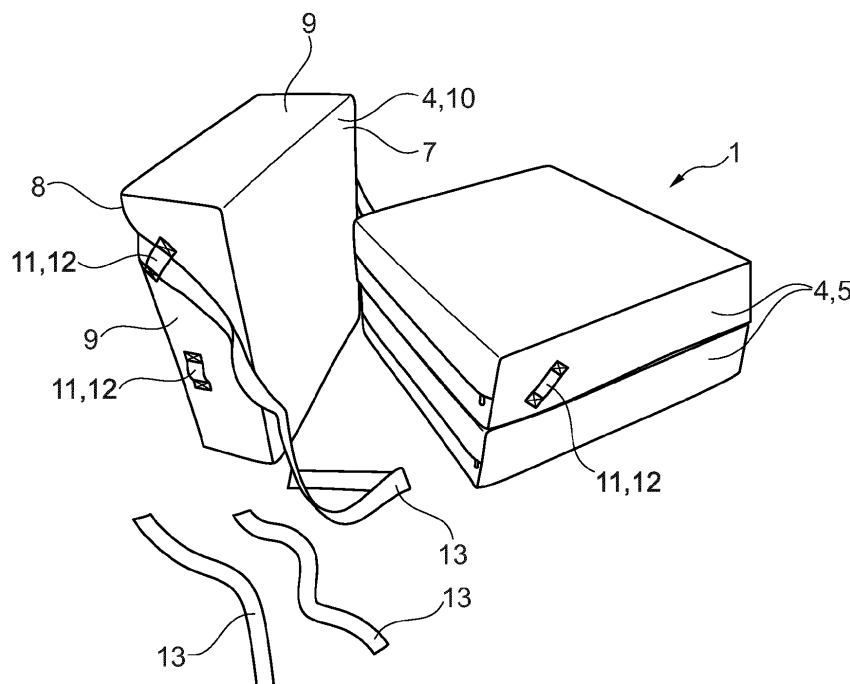


Fig. 1

Description

[0001] The invention relates to a convertible furniture system for optional establishing of a chair and a sleeping mat comprising a number of cushions, each cushion comprising an upper surface and an opposite placed lower surface and delimiting side-surfaces connecting the upper and lower surfaces with each other, said convertible furniture further comprising a number of flexible ribbon, arranged to slide into the straps, and each end of each ribbon is arranged to lock each other in a position and thereby fix the cushions in a defined position for establishing a chair or a sleeping mat, and at least one cushion is a separate cushion.

[0002] The invention also relates to a method for providing the chair and the sleeping mat.

[0003] US 2019/0269253 A1 relates to a collapsible mattress consisting of three cushions that are hinged to each other. The cushions can be folded in such a way that a chair comprising a seat and a backrest appears. However, the backrest is required to stand up against a wall when using it to ensure it does not collapse.

[0004] US 39022759 A describes a foldable mattress consisting of a number of cushions hinged to each other, which can be converted into a chair.

[0005] The support function of the backrest itself is provided by an underlying cushion as well as the stiffness of the mattress material. The back support depends on the stiffness of the cushions and the support. There will thus be a great risk of insufficient back support, as the backrest can yield to a reclining back.

[0006] US 3787909 A describes a modular furniture system comprising rectangular modules which can be put together to form different pieces of furniture such as a mattress/bed and a chair. Each module comprises a foam core covered with a fabric cover. At least two straps are sewn to the cover on one longitudinal side surface of the module, and at least one additional strap is sewn to the transverse side of the module. The furniture system also includes flexible ribbons, which can be passed through one or more straps on two or more adjacent modules to fasten them together.

[0007] Thus, there is a need for a convertible furniture system, making it possible using a number of cushions to position these in relation to each other in a simple manner and thereby providing a sleeping mat or a chair with stable backrest. Such a furniture system is very advantageous. In a limited space it is possible to optionally furnish a room with a chair or bed with a few components: cushions og ribbons for fixating.

[0008] It is an object of the present invention to improve known convertible furniture systems, where the above disadvantages and shortcomings are overcome, or at least a useful alternative is provided. The present invention makes it possible to provide a chair or a sleeping mat from the same basic modular units/cushions, without it being necessary to use tools or the like to provide the various pieces of furniture, as the accompanying fixation

ribbons ensure fixation of the cushions in the desired configuration. By providing the chair, a stable backrest is obtained, and by providing the sleeping mat, the cushions are arranged stable in relation to each other.

[0009] According to the invention, a convertible furniture system is provided as stated in the introduction, and where at least two cushions are hinged connected to each other by a hinge providing a cushion unit, and that the cushion unit and the separate cushion each comprises a number of set of straps, each set comprising two straps placed on the side surfaces opposite each other.

[0010] In the preferred embodiment, the system consists of a separate cushion and a cushion unit as well as three flexible ribbons, two of which have the same length while the third, which is used to design the chair, is longer. The flexible ribbons are made of a fabric material and are all separate units.

[0011] A separate cushion means that the cushion is physically separated from the other cushions and thus not permanently connected to the other cushions; a loose unit.

[0012] The chair is provided by bringing the two upper surfaces of the cushion unit into contact with each other by bending them around the hinge. The upper surface of the separate cushion is placed against one side surface of the cushion unit, this side surface does not include the straps. The cushions - which have the same mutual dimensions in the preferred embodiment example - are now positioned for a chair, but the backrest is unstable, as it simply rests on one side surface of the separate cushion and with the upper surface against the cushion unit. To get a stable backrest, the long flexible ribbon is now used. The ribbon is passed through the lower set of straps on the separate cushion so that one free end is passed through one strap and the other free end is passed through the other opposite placed strap. The ribbon is then fed through the straps on the cushion unit, after which the free ends are fed back towards the separate cushion and through the second set of straps on the cushion unit.

[0013] Each end of the ribbon is then fed through the separate strap on the cushion unit, after which the free ends are fed back towards the separate cushion and through the second set of straps on the cushion unit. The upper set of straps is spaced from the lower set. The free ends of the ribbon are brought towards each other and tightened and locked to each other in a burr closure, whereby the cushions are positioned in a chair position. The lower set of straps on the separate cushion lies next to the strap set of the cushion unit, so that a maximum tightening can be achieved.

[0014] The sleeping mat is provided by the flexible ribbon is removed and the separate cushion is placed with the lower surface against the substrate/floor. The cushion unit is unfolded so that the lower surfaces of the two connected cushions are also placed against the substrate/floor and positioned in relation to the separate cushion so that the delimiting side surfaces with straps

are exposed. A delimiting side surface of the separate cushion abuts against a delimiting side surface of the cushion unit. A ribbon comprising burr closure at the ends (a burr ribbon) is now passed through the straps on each side of the cushions and gathered/tightened so that the three cushions function as a coherent unit: a sleeping mat.

[0015] The cushions can assume different shapes such as polygonal, ellipse-shaped, square. But they have preferably the same dimensions and shape among themselves. The invention makes it possible to furnish a room cheaply, and when desired, it can be changed by combining the cushions into a completely new arrangement, as the cushions can of course also be used without being fixed to each other with the ribbons.

[0016] According to an embodiment the separate cushion comprises at least two set of straps, where the straps of the first set is placed with its longitudinal axis in an angle of 30-60° preferable 45° in relation to the longitudinal axis of the side surfaces.

[0017] According to an embodiment the straps of the other set are placed with their longitudinal axis parallel to the longitudinal axis of the side surfaces.

[0018] According to an embodiment the cushion unit comprises at least one set of straps placed on the side surfaces of one cushion.

[0019] According to an embodiment the at least one set of straps of the cushion unit is placed in an angle of 30-60° preferable 45° in relation to the longitudinal axis of the side surfaces.

[0020] According to an embodiment the at least one set of straps of the cushion unit is placed with the longitudinal axis of the straps parallel to the longitudinal axis of the side surface.

[0021] By placing the straps as indicated, a good, stable position is obtained when the flexible ribbon must be passed through the straps to provide either a chair or a sleeping mat. The placement ensures that the joining of the cushion unit and the separate cushion takes place optimally, and without there being any slippage between the two units, or that the units are twisted in relation to each other.

[0022] According to an embodiment the cushion unit of the convertible furniture comprises two cushions hinged to each other by means of the hinge along an edge between a side surface and an upper or lower surface.

[0023] The hinge is made by the cushions being covered with a cover. Along an edge between a side surface - which does not include the straps - and an upper/lower surface the cover is sewn together to provide the hinge. This could also be produced in another way, for example with ribbons that connect two cushions to each other.

[0024] According to an embodiment the cushion unit comprises a set of straps placed in an area close to the hinge on the side surfaces of one of the cushions.

[0025] The straps are preferable placed on the cushion that forms a chair-seat when the chair is provided. One

set is sufficient to tie the cushion unit and the separate unit together, regardless of whether a chair or a sleeping mat is being produced.

[0026] According to an embodiment the flexible ribbon comprises a first ribbon side and an opposite placed second ribbon side, and the ribbon comprises a ribbon closure placed at the ends of the ribbons such that the ends of the first ribbon side comprise burr-hooks and the second ribbon side comprises burr loops.

[0027] The locking of the ribbons could also be provided using buttons or press locks. However, burr ribbon is the most appropriate, as the cushions and straps are flexible and it can therefore be different from time to time how much it is necessary to tighten and thus where the closure of the two ends must take place. If the locking consists of push locks, there is a risk over time that the clamping will become too loose. This problem is not seen with burr ribbon, which has some extension. Burr loops mean the part of a burr that consists of "hair"/the threaded material that the hooks from the other part of the burr can engage.

[0028] According to an embodiment the convertible furniture system comprises several ribbons and at least two ribbons have the same length 11, and that the convertible furniture system comprises at least one additional ribbon with a length greater than 11.

[0029] In the preferred embodiment, the system comprises three ribbons, the longest of which is used to manufacture the chair, while two shorter ribbons of the same length 11 are used when the sleeping mat is manufactured. The longest ribbon has a length of 3.10 meters, while the two shorter ones have a length of 1.60 meters. The ribbons have the same width of 50 mm and the same thickness of 1-3 mm.

[0030] According to an embodiment the cushions have a rectangular or square outer circumference and having the same mutual dimension and shape, and the cushions are made of a core material such as foam rubber material and covered with a cover.

[0031] Colloquially, foam rubber is a common term for both polyether and cold foam materials with open / closed cells in many qualities. The quality thereof is known i.e. on bulk density/hardness (kg. per m³ foam), tensile strength, elasticity and fire-retardant properties.

[0032] A suitable foam rubber material is thus polyether foam rubber material. The fibers in polyether foam are softer fibers compared to a cold foam and thus often provide a softer comfort. The polyether foam is distinguished by being moisture-resistant, flexible, thermally- and sound-insulating and light. It can be surface treated and adhesive applied.

[0033] An alternative is cold foam. It is a highly elastic foam type with a high load-bearing capacity. Cold foam provides good sitting and lying comfort, it breathes well and has high sweat transpiration. Cold foam is fire retardant. A special type of cold foam is CMHR foam. It is a cold foam that has been made extremely fire retardant. CMHR foam is used for mattresses and furniture in ships,

institutions, etc., where special legal requirements apply. The system in the preferred embodiment thus comprises three cushions. Each cushion will preferably have the same thickness as the other cushions. The cover is used to make the hinge by sewing together along one edge.

[0034] According to an embodiment the straps comprises a first end part and an opposite placed second end part, said end parts are fastened to the side surfaces of the cushions, and that the distance between the end parts essentially corresponds to the width of the flexible ribbon, and that the straps are fastened to the cushions in such a way, that the distance between that surface of the straps turning towards the cushions and the surface of the cushions essentially corresponds to the thickness of the flexible ribbon, and/or the straps lie flat towards the surface of the cushions.

[0035] By the fact that the straps lie relatively tightly against the surface, it is achieved that it is easier to press the cushion unit and separate cushion against each other, without slippage occurring between them. Likewise, it is avoided that the joint between the cushion unit and the separate cushion becomes too flexible. A flexible and loose assembly leads to poor sitting comfort when the chair is manufactured, and poor lying comfort when the sleeping mat is manufactured.

[0036] According to an embodiment the convertible furniture system comprises a cushion unit and a separate cushion and further three flexible ribbons all comprising a burr closure located at the free ends of the ribbons.

[0037] This is the preferred embodiment which is the simplest and meets the basic need for creating a chair or a sleeping mat. Of course, the system can be supplied with several cushions and several cushion units as well as ribbons.

[0038] The invention also relates to a method for providing a chair or a sleeping mat by means of a convertible furniture system according to the previous wherein the sleeping mat sleeping mat is produced by the cushion unit unfolds to its full length, and the cushion unit and the separate cushion are placed in extension of each other in such a way, that the straps of the cushions are accessible and free, and that two separate ribbons slide into their respective strap on either side surface of the cushion unit, and into their respective straps on the separate cushion on one accessible and free side surface and the other accessible and free side surface of the cushion unit and of the separate cushion respectively, and said ribbons are locked in a tight position at the end of the ribbons,

and the chair is produced by the two upper surfaces of the cushion unit are brought in contact with each other by bending them around the hinge, and that the upper surface of the separate cushion is placed towards one side surface of the cushion unit, said side surface not comprising the straps, and that a ribbon is passed through the straps on the separate cushion such that the free end is led through one strap and the other free end is led through the opposite placed strap and then through

the straps of the cushion unit, after which the free ends are led back towards the separate cushion and through the other set of straps of the separate cushion, and the free ends are guided towards each other and tightened and locked to each other, whereby the cushions are positioned in a chair position.

[0039] According to an embodiment the locking of the free ends takes place by a burr closure in such a way, that when the free ends are led towards each other burr hooks at one side of the ribbon interact with burr loops placed on the other side of the ribbon.

[0040] The invention is then explained in more detail with reference to the figures, in which:

FIG. 1 shows the components included in a preferred embodiment of the convertible furniture system comprising a separate cushion and a cushion unit as well as three flexible ribbons.

FIG. 2 shows the cushion unit shown in fig. 1 in the unfolded position.

FIG. 3 shows a chair produced using the furniture system according to the invention and seen obliquely from the front.

FIG. 4 shows the chair shown in fig 3 seen obliquely from behind.

FIG. 5 shows the chair shown in fig. 3 and 4 directly from behind towards the back of the chair's backrest; the ribbon has been passed through the straps different from the way shown in fig 4.

FIG. 6 shows a sleeping mat produced by using the furniture system according to the invention in perspective, and where the cushions are strapped together using a ribbon.

FIG. 7 shows the clamping of the cushions using a ribbon to provide the sleeping mat shown in fig. 6.

FIG. 8 shows the sleeping mat shown in fig. 6, and where the tensioning of the cushions can be seen, which takes place using two ribbons that are passed through the straps on either side of the sleeping mat.

[0041] The invention will now be explained in more detail with reference to fig. 1 which shows the various components that the convertible furniture system 1 according to the invention in a preferred embodiment comprises: 3 flexible ribbons 13 with burr closure at the ends, cushions 4, and in this preferred embodiment a separate cushion 10 and a cushion unit 5, which consists of two hinged cushions 4.

[0042] The cushions 4 are rectangular or square, but all have the same mutual dimension and comprise a plane upper surface 7, an oppositely situated plane lower

surface 8 as well as four delimiting side-surfaces 9. The separate cushion 10 comprises two sets 11 of straps 12 and each set consists of two straps 12. The straps 12 of the first set is positioned with its longitudinal axis at an angle of 30-60°, preferably 45°, in relation to the longitudinal axis of the side surfaces 9, and the straps 12 of the second set is positioned with the longitudinal axis parallel to the longitudinal axis of the side surfaces 9. Each strap set 11 is placed with a strap 12 on the same side surface 9 and with a strap 12 on the diametrically opposite side surface 9 and in the same position.

[0043] FIG. 2 shows the cushion unit 5 shown in fig. 1 with the two cushions 4 in the unfolded position. The two cushions 4 are hingedly connected to one other via a hinge-connection 6 located along an edge between the upper 7 or lower 8 surface and a side surface 9 of one cushion 4 and the upper 7 or lower 8 surface and a side surface 9 of the other cushion 4. Said side surfaces 9 are side surfaces 9 which do not include straps 12.

[0044] Straps 12 on the cushion unit 5 are only placed on the opposite side surfaces 9 of one cushion 2 and placed close to the hinge 6.

[0045] The hinge 6 itself results from the fact that the cushions consist of a core made preferably of foam rubber material, each of which is covered with a cover. These covers are sewn together across the entire width of the cushion 4 in the area where the hinge 6 is to be placed. The hinge 6 could also be provided by the two cushions 4 being hinged to each other via snaps/buttons or burr ribbon. But the preferred method is to perform said stitching.

[0046] Providing a chair 2 using the furniture system 1 according to the invention is explained with reference to fig. 3,4,5.

[0047] Fig. 3 shows a chair 2 produced using the furniture system according to the invention and seen obliquely from the front, and fig. 4 same chair 2 seen obliquely from behind, while fig. 5 shows the chair 2 seen directly from behind towards the back of the chair 2 backrest 27, which is made up of the separate cushion 10.

[0048] The chair 2 is provided by bringing the two upper surfaces of the cushion unit 5 into contact with each other by bending them around the hinge 6. The upper surface 7 of the separate cushion 10 is placed against the side surface 9 of the cushion unit 5, which does not include the straps 12. The cushions 4 are now positioned to a chair 2, but the backrest 27 is of course not stable, as it simply supports one side surface 9 of the separate cushion 10 (which does not include the straps 12) towards the floor and with the upper surface 7 against the cushion unit 5. In order to have a stable backrest 27, the flexible ribbon 13 belonging to the system is now used, where the one that is the longest is used. This has a length of 3.10 meters and a width of 50 mm, which essentially corresponds to the 12 lengths of the straps. The system includes two additional ribbons 13, which are shorter and which are used to fasten the cushions 4 when a sleeping mat 3 is to be provided.

[0049] The flexible ribbons 13 comprise a first ribbon side and an oppositely located second ribbon side. The ribbons comprise a burr ribbon/closure 23 placed at the ends of the ribbons 13 so that the ends of the first side comprise burr hooks 25, and the ends of the second side comprise burr loops 26. When these engage with each other, the burr ribbon/closure 23 is created.

[0050] The straps 12 comprise a first end part 24a and an oppositely situated second end part 24b, which end parts 24a,b are attached to the cushions 4. The distance between the end parts 24a,b essentially corresponds to the width of the flexible ribbon 13, so that it can be passed through the straps 12. The straps 12 are attached to the cushions 4 in such a way that the distance between the surface of the straps 12 facing the cushion 4 and the surface of the cushion is quite small so the straps lie essentially flat against the surface/base to which the straps 12 are attached (the distance essentially corresponds to the thickness of the flexible ribbon.) This ensures that when the ribbon 13 is tightened, it tightens the separate cushion 10 against the cushion unit 5 without a significant release of the straps 12, since the straps 12 are just stretched against the base.

[0051] The ribbon 13 is passed through the straps 12 on the separate cushion 10 so that one free end is passed through one strap 12 and the other free end is passed through the opposite strap 12 (i.e., same set of straps 11), and subsequently through the straps 12 on the cushion unit 5. The free ends are then brought back towards the separate cushion 10 and through the second set of straps 11 placed at a suitable distance from the first set, and the free ends are brought towards each other and tightened and locked to each other in the burr ribbon/closure 23, whereby the cushions are positioned in a chair position. This can be seen in fig. 5.

[0052] Providing a sleeping mat using the furniture system according to the invention is explained with reference to fig. 6,7,8.

[0053] FIG 6 shows in perspective a sleeping mat 3 produced using the furniture system 1 according to the invention, and where the cushions 4 are fastened together using a ribbon 13 placed on each side of the sleeping mat 3, and each ribbon 13 is passed through the straps 12. This is evident of fig. 8 while fig. 7 shows details of the clamping.

[0054] The sleeping mat 3 is produced by placing the cushions 4 in extension of each other so that the 4 straps 12 of the cushions are accessible and free, i.e., that the straps 12 are not covered by a cushion surface that abuts them. The cushion unit 5 is thus unfolded to its full length, and the separate cushion 10 is placed in extension thereof. Two separate ribbons 13 are fed into each strap 12 of the cushion unit 5 and into each strap 12 of the separate cushion 10 on the one accessible and free side surface 9 and the other accessible and free side surface 9, respectively. The ribbons 13 are locked in a tight position at the ends of the ribbon in the same way as when providing the chair.

[0055] The convertible furniture system 1 is described with one cushion unit and one separate cushion, but there is of course nothing to prevent a system from including several of each kind. However, what is described constitutes the basic unit, but additional units can be purchased if desired. If the sleeping mat is to be expanded in length, the cushion unit will be expanded with several straps so that tensioning is possible.

Claims

1. A convertible furniture system (1) for optional establishing of a chair (2) and a sleeping mat (3) comprising a number of cushions (4), each cushion (4) comprising an upper surface (7) and an opposite placed lower surface (8) and delimiting side-surfaces (9) connecting the upper (7) and lower surfaces (8) with each other, said convertible furniture (1) further comprising a number of flexible ribbon (13), arranged to slide into straps (12), and each end of each ribbon (13) is arranged to lock each other in a position and thereby fix the cushions (4) in a defined position for establishing a chair (2) or a sleeping mat (3), and at least one cushion (4) is a separate cushion (10) **characterized in that** at least two cushions (4) are hinged connected to each other by a hinge (6) providing a cushion unit (5), and that the cushion unit (5) and the separate cushion (10) each comprises a number of set (11) of straps (12), each set (11) comprising two straps (12) placed on the side surfaces (9) opposite each other.
2. A convertible furniture system (1) according to claim 1 **characterized in that** the separate cushion (10) comprises at least two set (11) of straps (12), where the straps (12) of the first set (11) is placed with its longitudinal axis in an angle of 30-60° preferable 45° in relation to the longitudinal axis of the side surfaces (9).
3. A convertible furniture system (1) according to claim 2 **characterized in that** the straps (12) of the other set (11) are placed with their longitudinal axis parallel to the longitudinal axis of the side surfaces (9).
4. A convertible furniture system (1) according to any of the previous claims **characterized in that** the cushion unit (5) comprises at least one set (11) of straps (12) placed on the side surfaces (9) of one cushion (4).
5. A convertible furniture system (1) according to claim 4 **characterized in that** the at least one set (11) of straps (12) of the cushion unit (5) is placed in an angle of 30-60° preferable 45° in relation to the longitudinal axis of the side surfaces (9).
6. A convertible furniture system (1) according to claim 4 **characterized in that** the at least one set of straps of the cushion unit (5) is placed with the longitudinal axis of the straps (12) parallel to the longitudinal axis of the side surface (9).
7. A convertible furniture system (1) according to any of the previous claims **characterized in that** the cushion unit (5) of the convertible furniture (1) comprises two cushions (4) hinged to each other by means of the hinge (6) along an edge between a side surface (9) and the upper (7) or lower (8) surface.
8. A convertible furniture system (1) according to any of the previous claims **characterized in that** the cushion unit (5) comprises a set (11) of straps (12) placed in an area close to the hinge (6) on the side surfaces (9) of one of the cushions (4).
9. A convertible furniture system (1) according to any of the previous claims **characterized in that** the flexible ribbon (13) comprises a first ribbon side and an opposite placed second ribbon side, and the ribbon (13) comprises a ribbon closure (23) placed at the ends of the ribbons (13) such that the ends of the first ribbon side comprises burr-hooks (25) and the second ribbon side comprises burr loops (26).
10. A convertible furniture system (1) according to any of the previous claims **characterized in that** the convertible furniture system (1) comprises several ribbons, and at least two ribbons (13) have the same length l1, and that the convertible furniture system (1) comprises at least one additional ribbon with a length greater than l1.
11. A convertible furniture system (1) according to any of the previous claims **characterized in that** the cushions (4) have a rectangular or square outer circumference and having the same mutual dimension and shape, and that the cushions (4) are made of a core material such as foam rubber material and covered with a cover.
12. A convertible furniture system according to any of the previous claims **characterized in that** the straps (12) comprises a first end part (24a) and an opposite placed second end part (24b), said end parts (24a,b) are fastened to the side surfaces (9) of the cushions (4), and that the distance between the end parts (24a,b) essentially corresponds to the width of the flexible ribbon (13), and that the straps (12) are fastened to the cushions (4) in such a way, that the distance between that surface of the straps (12) turning towards the cushions (4) and the surface of the cushions (4) essentially corresponds to the thickness of the flexible ribbon (13) and/or the straps lie

flat towards the surface of the cushions (4).

13. Et convertible furniture system (1) according to any of the previous claims **characterized in that** the convertible furniture system (1) comprises a cushion unit (5) and a separate cushion (10) and three flexible ribbons (13) all comprising a burr closure (23) located at the free ends of the ribbons (13). 5
14. A method for providing a chair (2) or a sleeping mat (3) by means of a convertible furniture system (1) according to any of the previous claims **characterized in** the sleeping mat (3) is produced by the cushion unit (5) unfolds to its full length, and the cushion unit (5) and the separate cushion (10) are placed in extension of each other in such a way, that the straps (12) of the cushions (4) are accessible and free, and that two separate ribbons (13) slide into their respective strap (12) on either side surface of the cushion unit (5), and into their respective straps (12) on the separate cushion (10) on one accessible and free side surface (9) and the other accessible and free side surface (9) of the cushion unit (5) and of the separate cushion (10) respectively, and said ribbons (13) are locked in a tight position at the end of the ribbons (13), 10
and the chair is produced by the two upper surfaces of the cushion unit (5) are brought in contact with each other by bending them around the hinge (6), and that the upper surface of the separate cushion (10) is placed towards one side surface (9) of the cushion unit (5), said side surface not comprising the straps (12), and that a ribbon (13) is passed through the straps (12) on the separate cushion (10) such that the free end is led through one strap (12) and the other free end is led through the opposite placed strap (12) and then through the straps (12) of the cushion unit (5), after which the free ends are led back towards the separate cushion (10) and through the other set of straps (12) of the separate cushion (10), and the free ends are guided towards each other and tightened and locked to each other, whereby the cushions (4) are positioned in a chair position. 15
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15. A method according to claim 14 **characterized in that** the locking of the free ends takes place by a burr closure (23) in such a way, that when the free ends are led towards each other burr hooks (25) at one side of the ribbon (13) interact with burr loops (26) placed on the other side of the ribbon (13). 45
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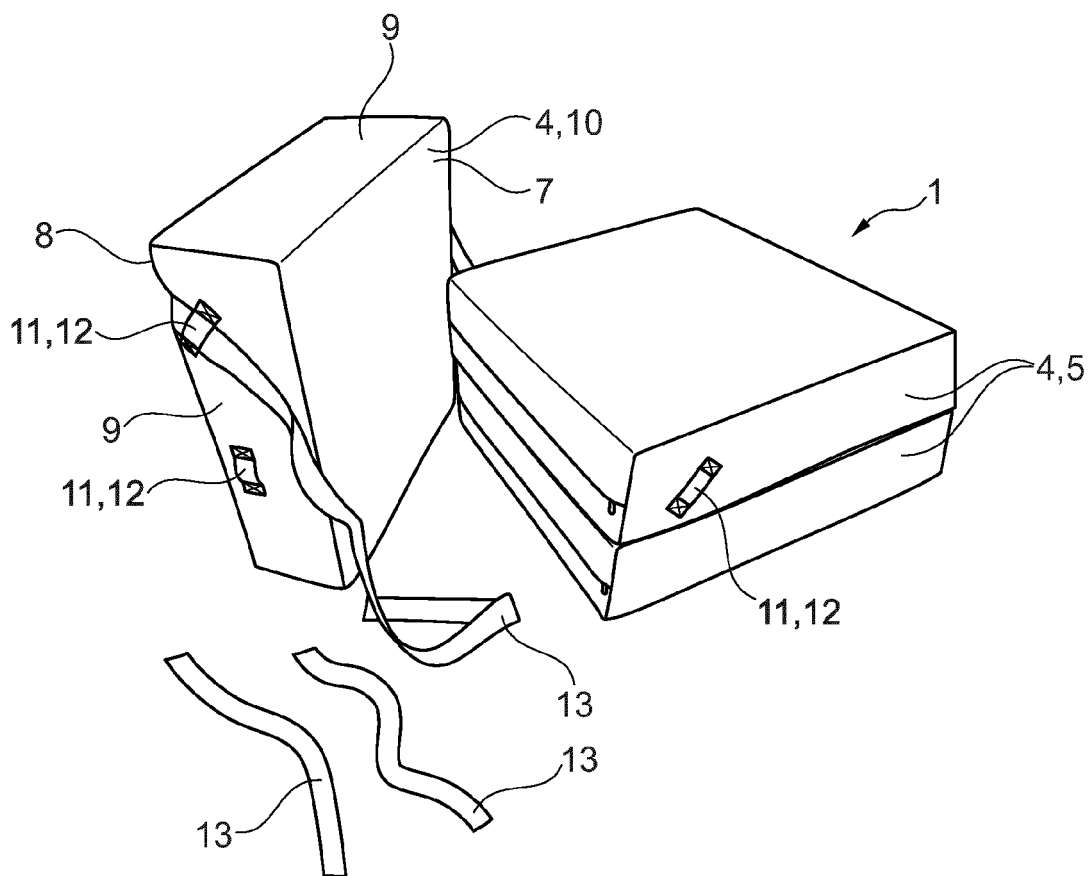


Fig. 1

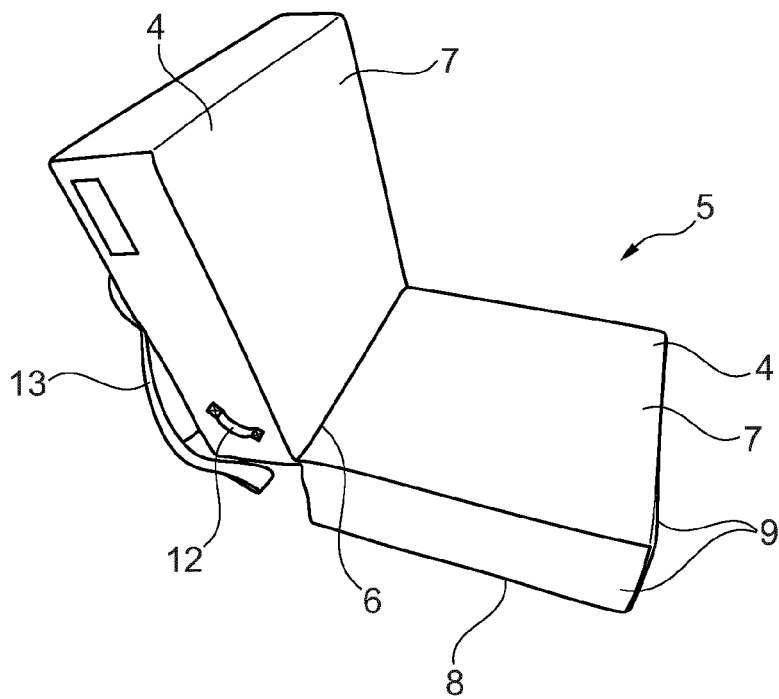


Fig. 2

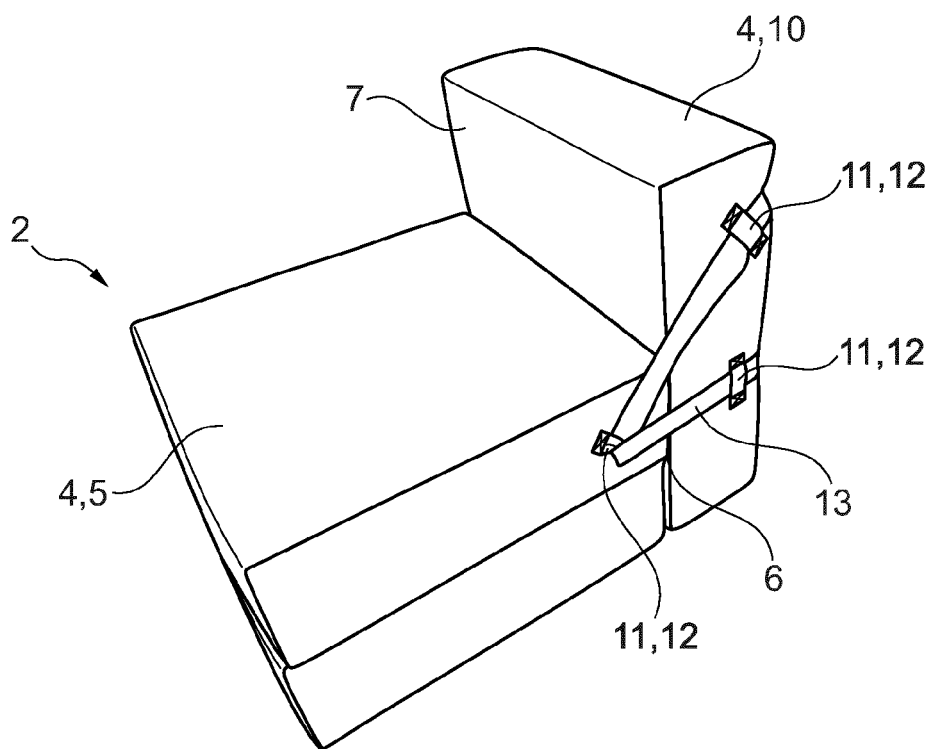


Fig. 3

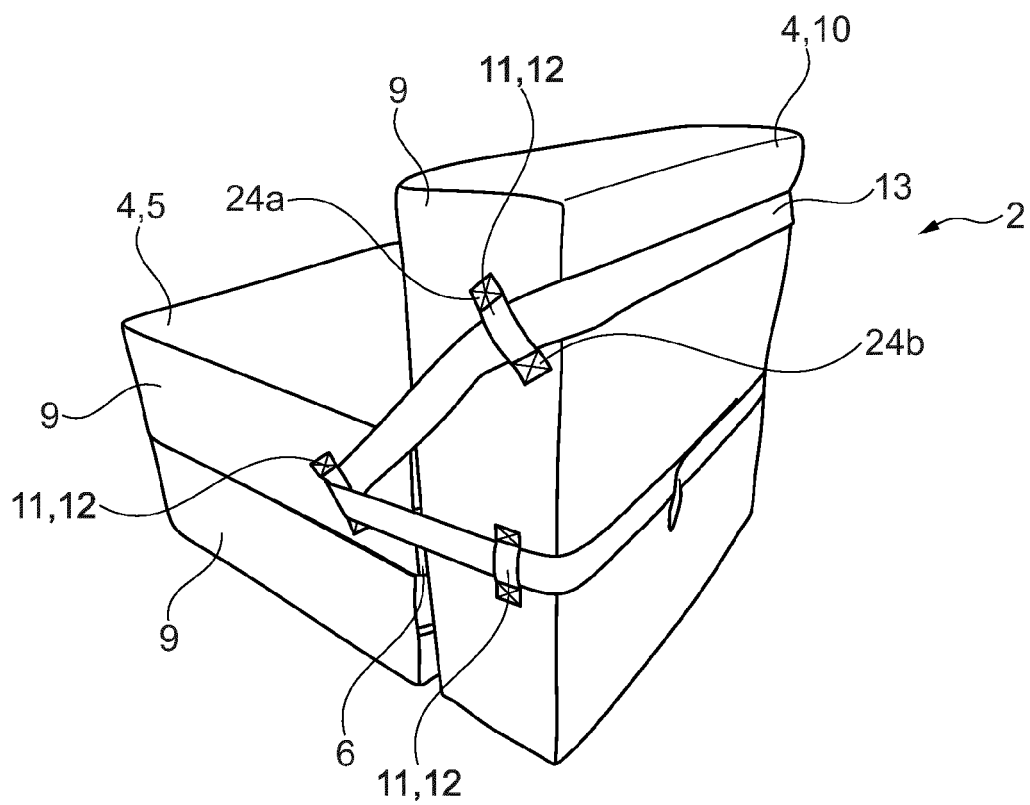


Fig. 4

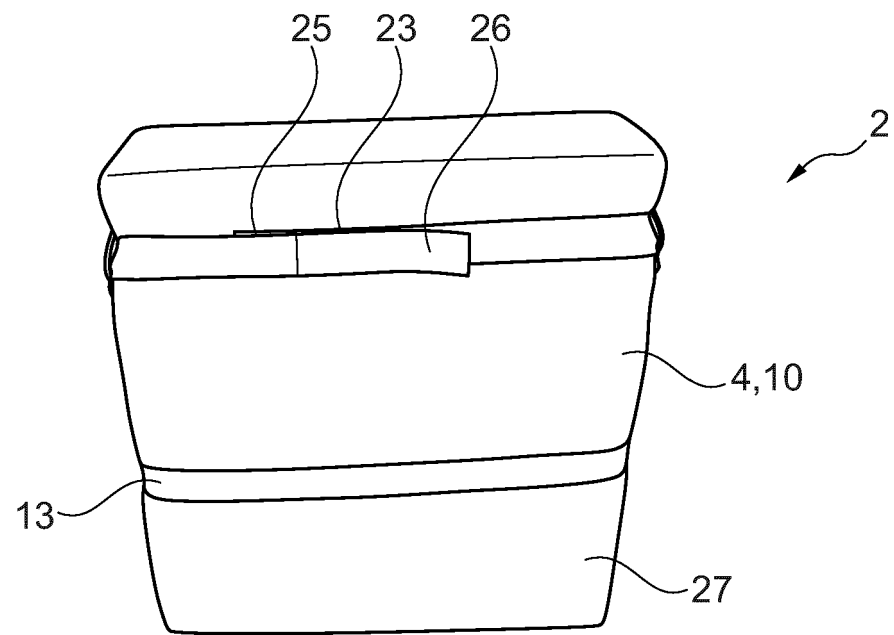


Fig. 5

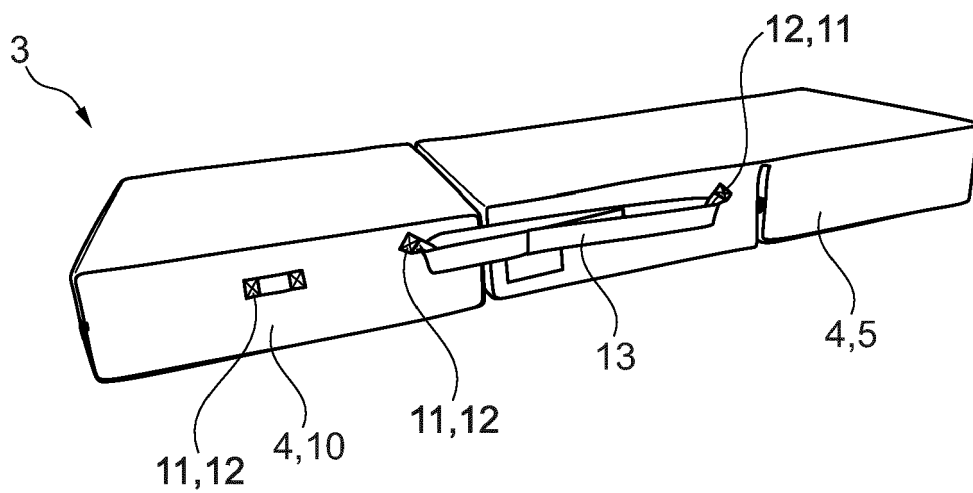


Fig. 6

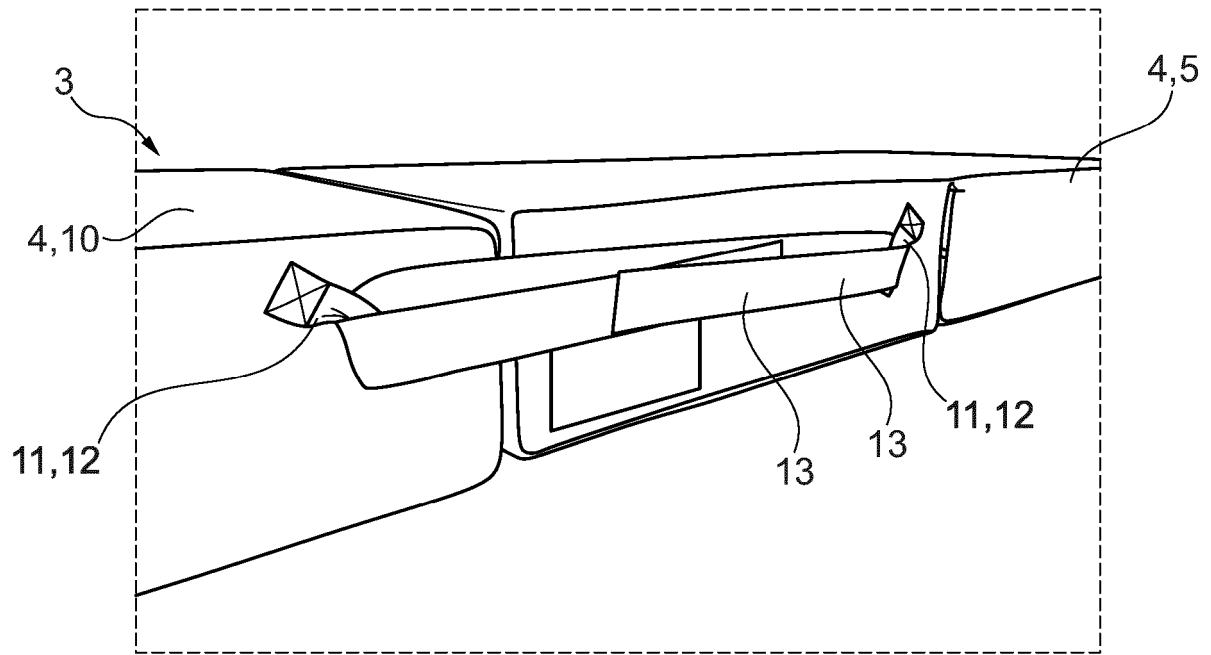


Fig. 7

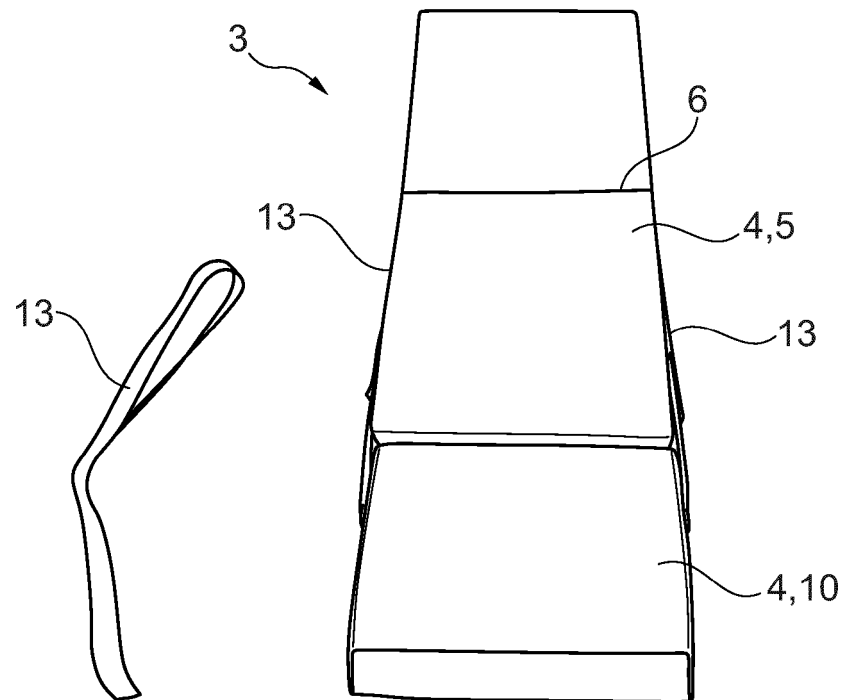


Fig. 8



EUROPEAN SEARCH REPORT

Application Number

EP 23 16 2152

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 4 518 203 A (WHITE KIRK E [US]) 21 May 1985 (1985-05-21) * figures 4-6 * * column 2, lines 45-46 * -----	1-15	INV. A47C17/04 A47C31/08
A	US 2020/107640 A1 (COOPER COREY [US]) 9 April 2020 (2020-04-09) * figures 5-7 * -----	1-15	
			TECHNICAL FIELDS SEARCHED (IPC)
			A47C
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		9 August 2023	Melo Sousa, Filipe
CATEGORY OF CITED DOCUMENTS			
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ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.

EP 23 16 2152

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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09-08-2023

10	Patent document cited in search report	Publication date	Patent family member(s)	Publication date
	US 4518203 A	21-05-1985	NONE	
15	US 2020107640 A1	09-04-2020	CN 111000390 A US 2020107640 A1	14-04-2020 09-04-2020
20				
25				
30				
35				
40				
45				
50				
55				

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Patent documents cited in the description

- US 20190269253 A1 [0003]
- US 39022759 A [0004]
- US 3787909 A [0006]