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(54) **MATTRESS FOR A TRUCK CAB MOUNTED BED**

(57) A mattress 1; 101; 201 for a truck cab mounted bed has a first mattress element 3; 103; 203 defining a first surface area, and at least one second mattress element 5; 105; 205A, 205B. The first and second mattress elements 3; 103; 203, 5; 105; 205A, 205B are comple-

mentary to one another in each of different first and second arrangements to compensate for deviations of a bed surface from a level position. The invention also encompasses a sleeper cab for a truck or tractor that is provided with the mattress 1; 101; 201.

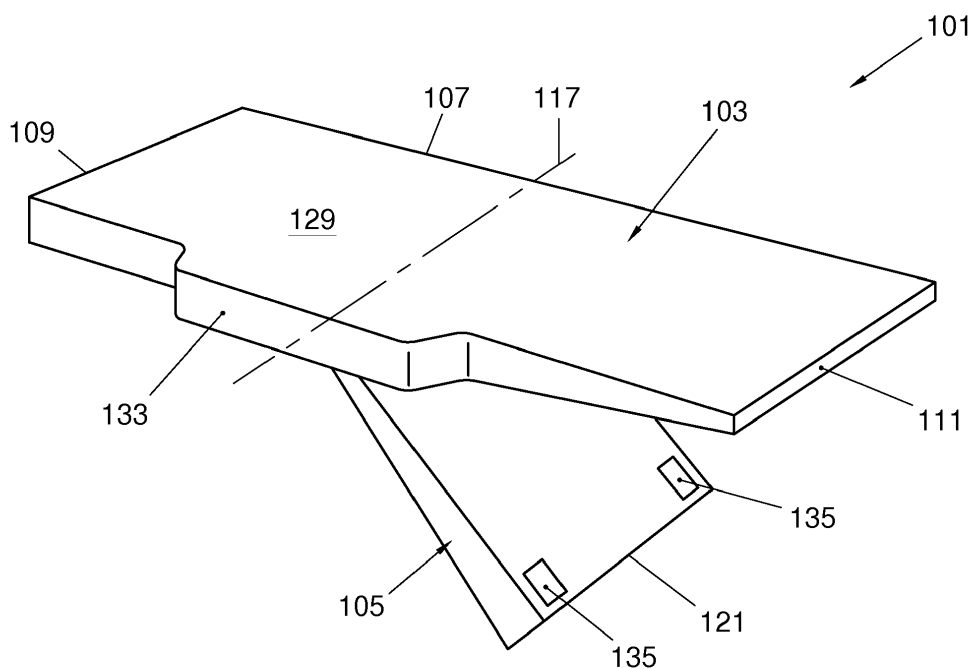


FIG. 4

Description

[0001] The invention relates to a mattress for a sleeper truck bed, more in particular for a truck or tractor cabin with sleeping accommodation.

[0002] It is of great importance for the driver to be alert during the long travels. Hence, it is common for heavy vehicles or tractors to be equipped with sleeping accommodation. Apart from the driver's health and comfort, it is also strictly imposed by the governing laws for a driver to take a rest at predetermined intervals of time. There can exist an annoying situation when a level surface cannot be found for parking. This then results in the truck being parked on a slope having a certain angle with respect to the horizontal.

[0003] To eliminate such an inconvenience and to improve the driver's comfort during rest, it is an object of the present invention to propose a means for leveling a truck cab mounted bed mattress. In a more general sense it is thus an object of the invention to overcome or reduce at least one of the disadvantages of the prior art. It is also an object of the present invention to provide alternative solutions which are less cumbersome in assembly and operation and which moreover can be made relatively inexpensively. Alternatively it is an object of the invention to at least provide a useful alternative.

[0004] To this end the invention provides a mattress for a bed mounted in a cabin of a truck or tractor with sleeping accommodation, as defined in one or more of the appended claims.

[0005] Accordingly, an improved mattress is provided for a sleeper cabin of a truck or tractor, which includes a first mattress element defining a first surface area and a second mattress element, wherein the first and the second mattress elements are complementary to one another. Such a leveling mattress enables the ease of leveling the bed when the vehicle is not parked on a level surface and provides the possibility for a more satisfactory rest for the driver.

[0006] Preferably the first mattress element is sized to cover an entire surface defined by a bed frame of the truck cab which supports the mattress. The second mattress element is sized to cover substantially only half of the first surface area defined by the first mattress element. Moreover, the first mattress element over half of the first surface area is sloped from a full thickness in a middle area to a reduced thickness at an edge of the first mattress element.

[0007] The second mattress element is advantageously shaped as a wedge having a reduced thickness along one edge of substantially zero and a full thickness at an opposite edge which equals a difference between the reduced thickness of the first mattress element and the full thickness thereof.

[0008] Preferably the first mattress element is an upper mattress element, and the second mattress element is an lower mattress element. The second mattress element is connected with its one edge to the middle area

of the first mattress element and can be swiveled between first and second positions. In first position the second mattress element confronts the non-sloped area (with full thickness) of the first mattress element and in second position it confronts the sloped area of the first mattress element. The leveling mattress is inclined towards its thinner edge in the second position. Preferably, the loop and hook fastener patches are provided on the confronting surfaces of the first and second mattress elements to detachably lock same in each of the first and second positions. The leveling mattress includes a partial lateral extension along one longitudinal edge for being positioned between front seats of the truck cab.

[0009] The invention also encompasses a sleeper cab for a truck or tractor, which is provided with the leveling mattress.

[0010] Further advantageous aspects of the invention will become clear from the appended description and in reference to the accompanying drawings, in which:

Figure 1 shows two mattress elements that together form a mattress according to the invention;

Figure 2(A) shows a side elevation of the mattress elements of Figure 1 in a first arrangement;

Figure 2(B) shows a side elevation of the mattress elements of Figure 1 in a second arrangement;

Figure 3(A) is an isometric view of a further mattress according to the invention in an arrangement similar to Figure 2(A);

Figure 3(B) is an isometric view of the further mattress of Figure 3(A) in an arrangement corresponding to Figure 2(B);

Figure 4 is an isometric view of a modified embodiment of the mattress of Figures 3(A) and 3(B);

Figure 5 is an isometric view of yet another embodiment of the invention; and

Figure 6 is a side elevation of the embodiment of Figure 5 with the mattress elements in an intermediate one of three possible arrangements.

[0011] A mattress 1 as shown in Figure 1 includes a first mattress element 3 and a second mattress element 5. The first mattress element 3 has a pair of opposite longitudinal edges 7 (of which only one is visible in Figure 1), and opposite first and second transverse edges 9, 11. The opposite longitudinal and transverse edges 7, 9, 11 together define a first surface area, which is sized to fill an entire surface area defined by a bed frame, such as present in a sleeper cab of a truck or tractor.

[0012] In opposite directions from a middle area along its length the first mattress element 3 is divided respectively in a full thickness portion 13, and a sloping portion 15. The full thickness portion 13 and the sloping portion 15 meet along a transverse division line 17, which is arranged to be approximately in the middle of the first mattress element 3. Thereby the full thickness portion 13 and the sloping portion 15 each amount to substantially half of the first surface area defined by the opposite longitu-

dinal and transverse edges 7, 9, 11. The second mattress element 5 has a first edge 19 of neglectible thickness; a second edge 21 having a full thickness; and opposite side edges 23, 25 having a thickness that increases towards the second edge 21. The first and second edges 19, 21, together with the opposite side edges 23, 25 define a sloping surface 27. The sloping surface 27 in size also corresponds to substantially half of the first surface area of the first mattress element 3. Indicated by dotted lines in Figure 1 is a first possible arrangement of the second mattress element 5 with respect to the first mattress element 3. In this arrangement the sloping surface 27 of the second mattress element 5 confronts the sloping portion 15 of the first mattress element 3. A thickness "A" of the full thickness second edge 21 of the second mattress element 5 is selected to be of a value that together with a thickness "B" of the second transverse edge 11 of the first mattress element 3, equals a thickness "C" of the first transverse edge 9 thereof. In this way the first and second mattress elements 3, 5 are complementary to one another.

[0013] Referring now to Figure 2(A) a side elevation of the mattress 1 is shown with the first and second mattress elements 3, 5 in the first arrangement. With the second mattress element 5 in the first arrangement an upper surface 29 of the first mattress element 3 is substantially parallel to a bed frame surface 31. Figure 2(B) in another side elevation shows the second mattress element 5 in the second arrangement in which it confronts the full thickness portion 13 of the first mattress element 3. In this second arrangement the upper surface 29 of the first mattress element 3 is inclined with respect to the bed frame surface 31. The second arrangement will offer a degree of compensation should the vehicle not be parked on a level surface. In the present embodiment the second mattress element 5 may be provided as a loose element, which is substantially smaller than the first mattress element, so that it can be easily handled in the confined space of a truck or tractor cabin. As will be clear from Figures 1, 2(A) and 2(B) the second mattress element 5 is sized to cover substantially only half of the first surface area of the first mattress element 3. In the first arrangement the sloping surface 27 of the second mattress element 5 confronts the sloping portion 15 of the first mattress element 3. In the second arrangement the sloping surface 27 of the second mattress element 5, or an opposite surface thereof, confronts the full thickness portion 13 of the first mattress element 3. Given the limited size of the second mattress element 5, with respect to the first mattress element 3, it is easy to reposition the second mattress element 5 to obtain each of the first and second arrangements.

[0014] Figures 3(A) and 3(B) illustrate first and second arrangements of a slightly modified embodiment of mattress 101. The mattress 101 is very similar to the mattress 1 of Figures 1, 2(A) and 2(B), and similar parts are referred to by reference numerals differing only by a full "100" of those used in the previous drawing Figures. A

first mattress element 103 includes a partial lateral extension 133 along one of its longitudinal edges 107A. The partial lateral extension 133 is adapted to extend in a space between front seats of a truck cab, to give slightly more bed space to the occupant. Also the partial extension 133 will provide a means for grasping the first mattress element 103, while repositioning the second mattress element 105. It is further seen in Figures 3(a) and 3(B) that another of the pair of opposite longitudinal edges 107B is without lateral extension and adapted to confront a rear interior wall of a truck cab. Opposite first and second transverse edges 109, 111 are of different height, so that the first mattress element 103 is divided in a full thickness half and a sloping half, as the first mattress element of Figures 1, 2(A), 2(B). The second mattress element 105 has again a full thickness edge 121, which has a thickness that is complementary to a thickness of the second transverse edge 111 of the first mattress element 103 to compensate for the difference of the first transverse edge 109 thereof. In the arrangement of the second mattress element 105 as shown in Figure 3(A) this will result in an upper surface 129 of the first mattress element 103, to be substantially in a level parallel to the bed supporting surface. As shown in Figure 3(B) the second mattress element 105 is positioned to add with its full thickness edge 121 to the thickness of the first transverse edge 109 of the first mattress element 103. As a result the upper surface 129 of the first mattress element 103 as shown in Figure 3(B) takes a sloped position with respect to the bed supporting surface.

[0015] As further shown in Figure 4 the mattress 101 may have the second mattress element 105 pivotally attached to the first mattress element, so that it pivots along a transverse division line 117. To this end a first edge of neglectible thickness opposite the full thickness edge 121 of the second mattress element 105 may be connected by a living hinge to a bottom of the first mattress element 103. Such pivoting may make it even more easy for an occupant of a truck cab to move the second mattress element 105 from its first arrangement into its second arrangement and vice versa.

[0016] Another improvement in handling may be the provision of hook and loop fastener patches (popularly referred to as Velcro patches) such as indicated by numeral 135 to confronting sides of the first and second mattress elements 103, 105.

[0017] Rather than hook and loop fastener patches, such as 135, it is also conceivable that the first and second mattress elements 103, 105 have other interengaging structures on their confronting surfaces. Conceivably the hook and loop fastener (or Velcro) patches can also be replaced by magnetic patches, or by zippers along the edges of a fabric covering of the mattress elements.

[0018] An even further modified embodiment of mattress 201 is shown in Figures 5 and 6. Again the reference numerals used in Figures 5 and 6 for similar elements differ a further full "100" with those of Figures 3(A), 3(B) and 4. The mattress 201 has a first mattress element 203

and two second mattress elements 205A, 205B to provide one further position of inclination of the upper surface 229, in between those provided by the different arrangements of the other embodiments. Here both second mattress elements 205A, 205B may be attached along one edge to a bottom of the first mattress element 203 to be pivotable along transverse division line 217. In addition hook and loop fastener patches 235 between the confronting surfaces of the second and first mattress elements 203, 205A, 205B, such hook and loop patches 235 are now also provided between confronting surfaces of the two second mattress elements 205A, 205B. As further shown in Figure 6 an additional intermediate arrangement is now obtained, in which one of the two second mattress elements 205B confronts a full thickness/portion of the first mattress element 203, while another of the two second mattress elements 205A confronts the sloping portion of the first mattress element 203 for a different intermediate inclination of the upper surface 229 of the first mattress element 203. This division of the second mattress element in two second mattress elements 205A, 205B, may be used either to increase range of angular adjustment, or to offer more positions within a given range. In as far as practical it is also conceivable that the second mattress element is divided in even more than two individual second mattress elements.

[0019] Accordingly a mattress 1; 101; 201 for a truck cab mounted bed is described that has a first mattress element 3; 103; 203 defining a first surface area, and at least one second mattress element 5; 105; 205A, 205B. These first and second mattress elements 3; 103; 203, 5; 105; 205A, 205B are complementary to one another in each of different first and second arrangements to compensate for deviations of a bed surface from a level position. The invention also encompasses a sleeper cab for a truck or tractor that is provided with the mattress 1; 101; 201.

[0020] It is thus believed that the use and construction of the present invention will be apparent from the foregoing description and drawings appended thereto. For the purpose of clarity and a concise description features are described herein as part of the same or separate embodiments, however, it will be appreciated that the scope of the invention may include embodiments having combinations of all or some of the features described. It will be clear to the skilled person that the invention is not limited to any embodiment herein described and that modifications are possible which may be considered within the scope of the appended claims. Also kinematic inversions are considered inherently disclosed and can be within the scope of the invention. In the claims, any reference signs shall not be construed as limiting the claim. The terms 'comprising' and 'including' when used in this description or the appended claims should not be construed in an exclusive or exhaustive sense but rather in an inclusive sense. Thus expression as 'including' or 'comprising' as used herein does not exclude the pres-

ence of other elements, additional structure or additional acts or steps in addition to those listed. Furthermore, the words 'a' and 'an' shall not be construed as limited to 'only one', but instead are used to mean 'at least one', and do not exclude a plurality. Features that are not specifically or explicitly described or claimed may additionally be included in the structure of the invention without departing from its scope. Expressions such as: "means for ..." should be read as: "component configured for ..." or "member constructed to ..." and should be construed to include equivalents for the structures disclosed. The use of expressions like: "critical", "preferred", "especially preferred" etc. is not intended to limit the invention. To the extent that structure, material, or acts are considered to be essential they are inexpressively indicated as such. Additions, deletions, and modifications within the purview of the skilled person may generally be made without departing from the scope of the invention, as determined by the claims.

Claims

1. Mattress for a truck cab mounted bed having a first mattress element defining a first surface area, and at least one second mattress element, wherein the first and second mattress elements are complementary to one another.
2. Mattress of claim 1, wherein the first mattress element has the first surface area sized to cover an entire surface defined by a bed frame of the truck cab for supporting the mattress.
3. Mattress of claim 1 or 2, wherein the second mattress element is sized to cover substantially only half of the first surface area defined by the first mattress element.
4. Mattress of claim 1, 2 or 3, wherein the first mattress element over half of the first surface area is sloped from a full thickness in a middle area to a reduced thickness at an edge of the first mattress element.
5. Mattress of one of claims 1 to 4, wherein the second mattress element is shaped as a wedge having a reduced thickness along one edge of substantially zero and a full thickness at an opposite edge which equals a difference between the reduced thickness of the first mattress element and the full thickness thereof.
6. Mattress of one of claims 1 to 4, further comprising at least two second mattress elements, wherein each of the second mattress elements is shaped as a wedge having a reduced thickness along one edge of substantially zero and a full thickness at an opposite edge which equals a complementary portion of

a difference between the reduced thickness of the first mattress element and the full thickness thereof.

7. Mattress of one of claims 1 to 6, wherein the first mattress element is an upper mattress element, and the second mattress element is a lower mattress element. 5
8. Mattress of claim 7, wherein the second mattress element with its one edge is connected to the middle area of the first mattress element to enable it to be swiveled between a first position in which it confronts the full thickness half of the first mattress element, and a second position in which it confronts the sloped half of the first mattress element. 10
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9. Mattress of claim 8, wherein loop and hook fastener patches are arranged on confronting surfaces of the first and second mattress elements to detachably lock same in each of the first and second positions. 20
10. Mattress of one of claims 1 to 9, wherein the first mattress element includes a partial lateral extension along one longitudinal edge for being positioned between front seats of the truck cab. 25
11. Truck cab provided with the mattress of one of claims 1 to 10.
12. Truck cab of claim 11, wherein the cab is a truck or tractor cabin. 30

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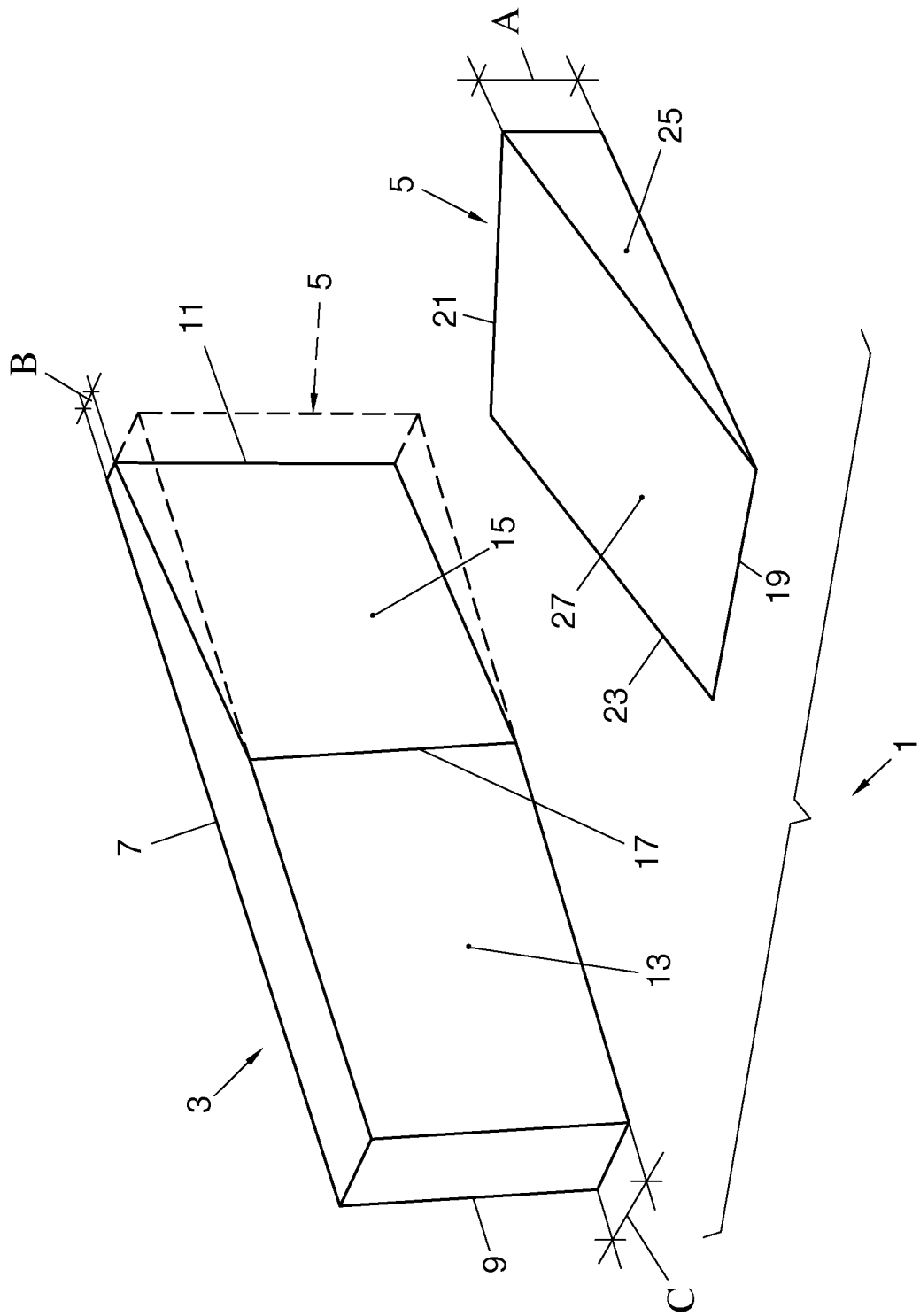


FIG. 1

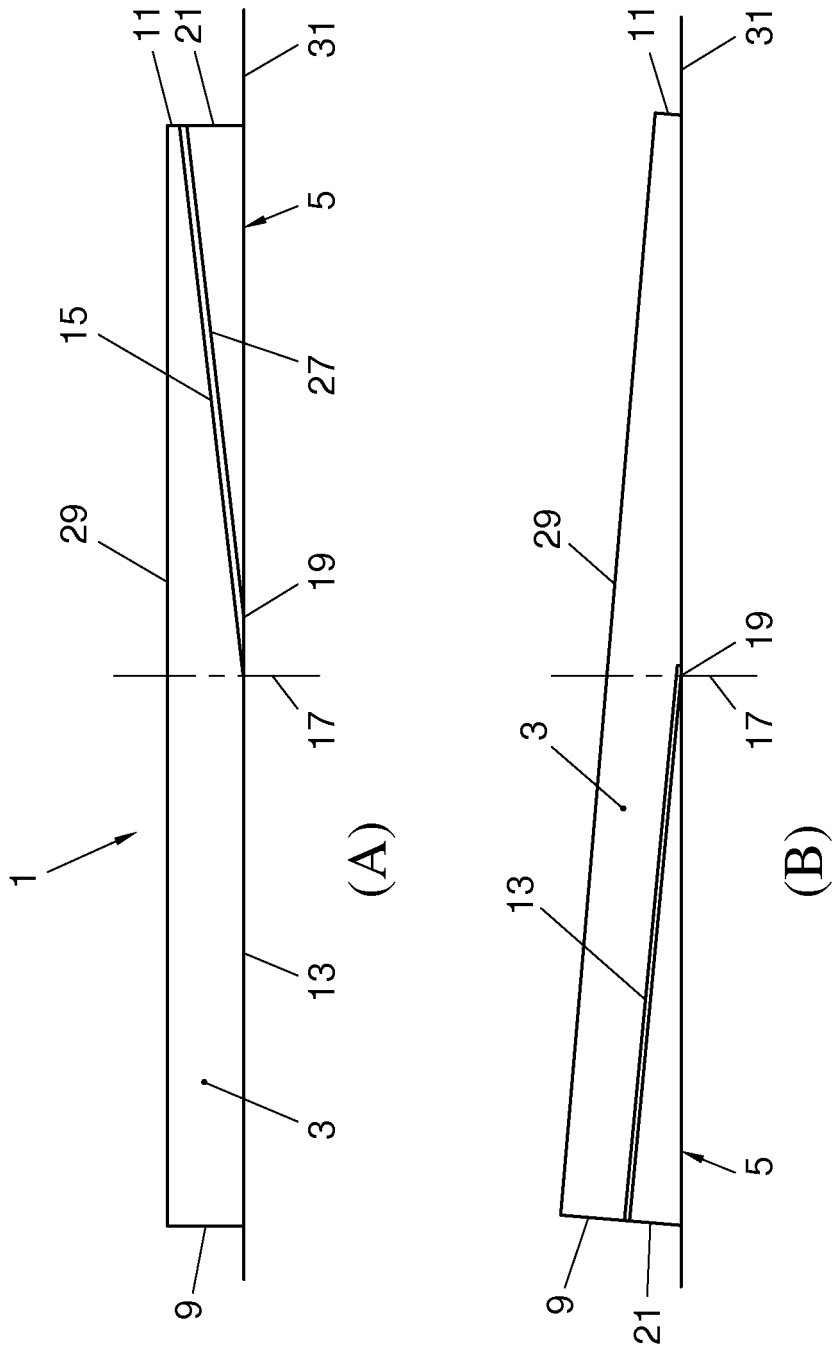


FIG. 2

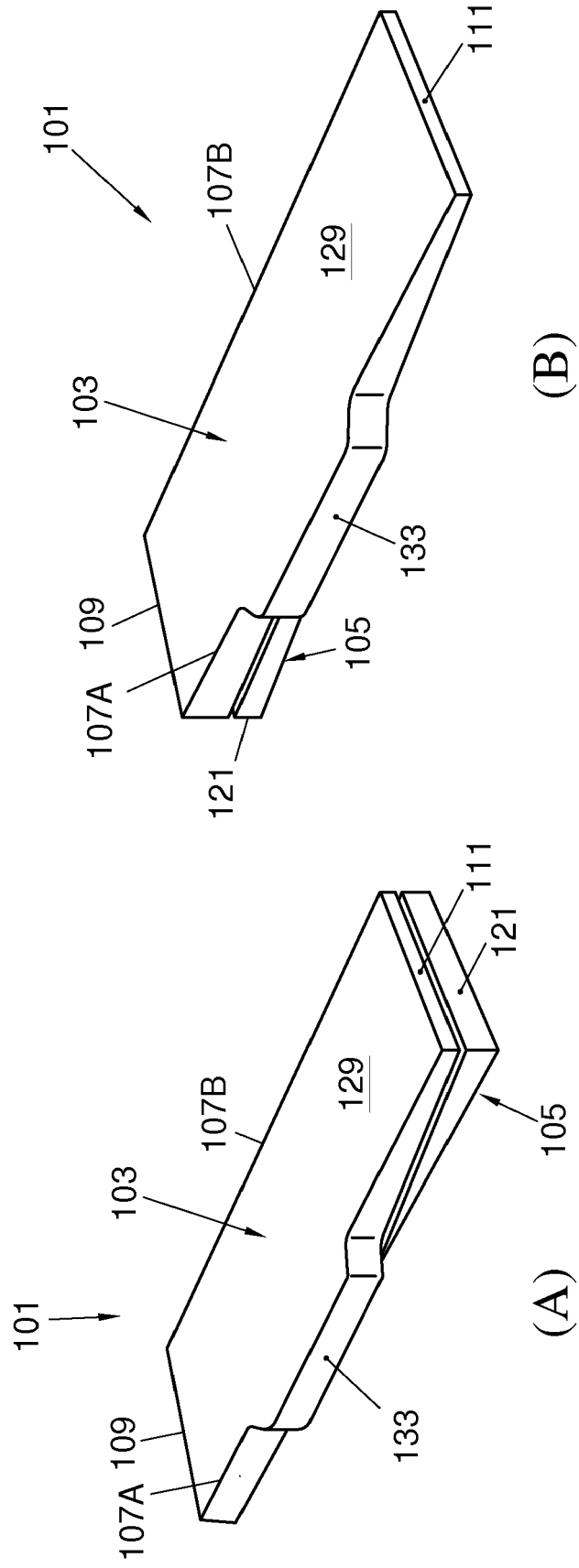


FIG. 3

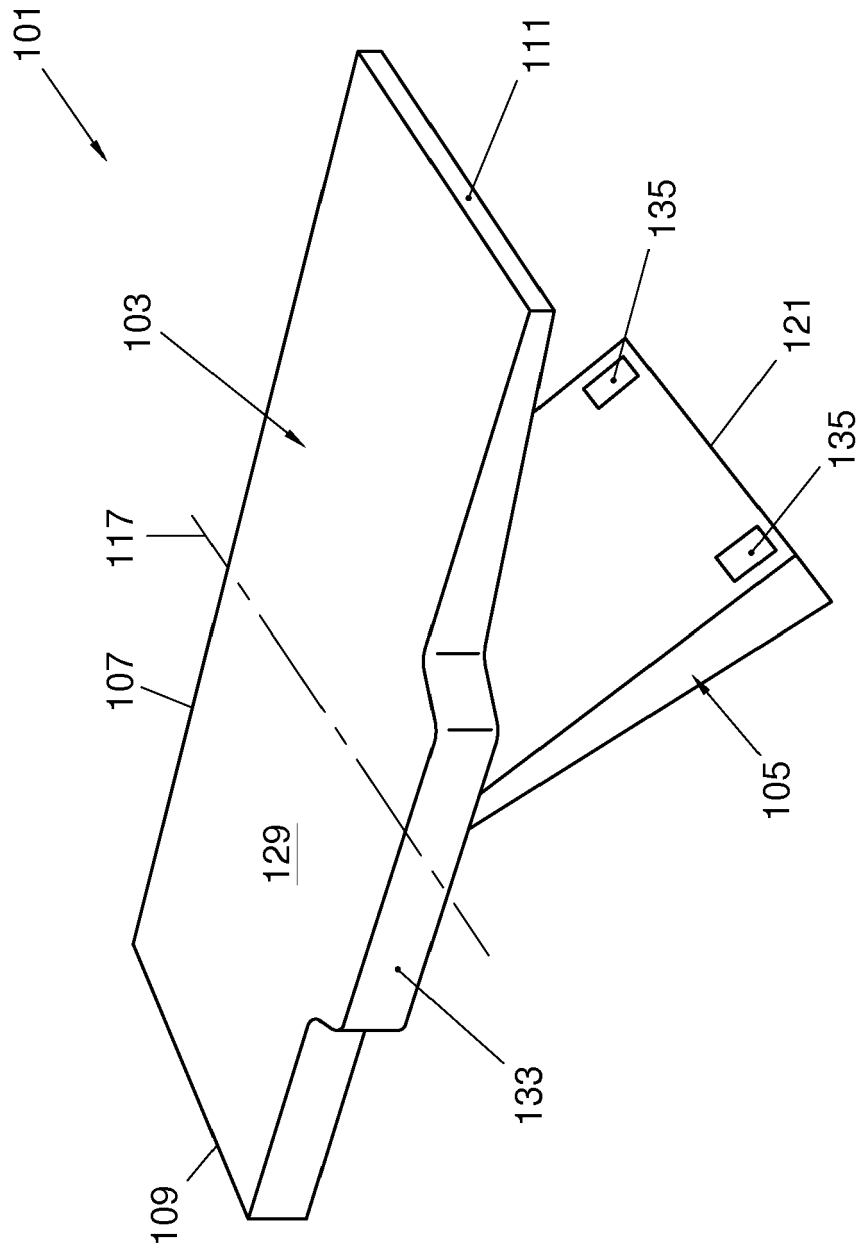


FIG. 4

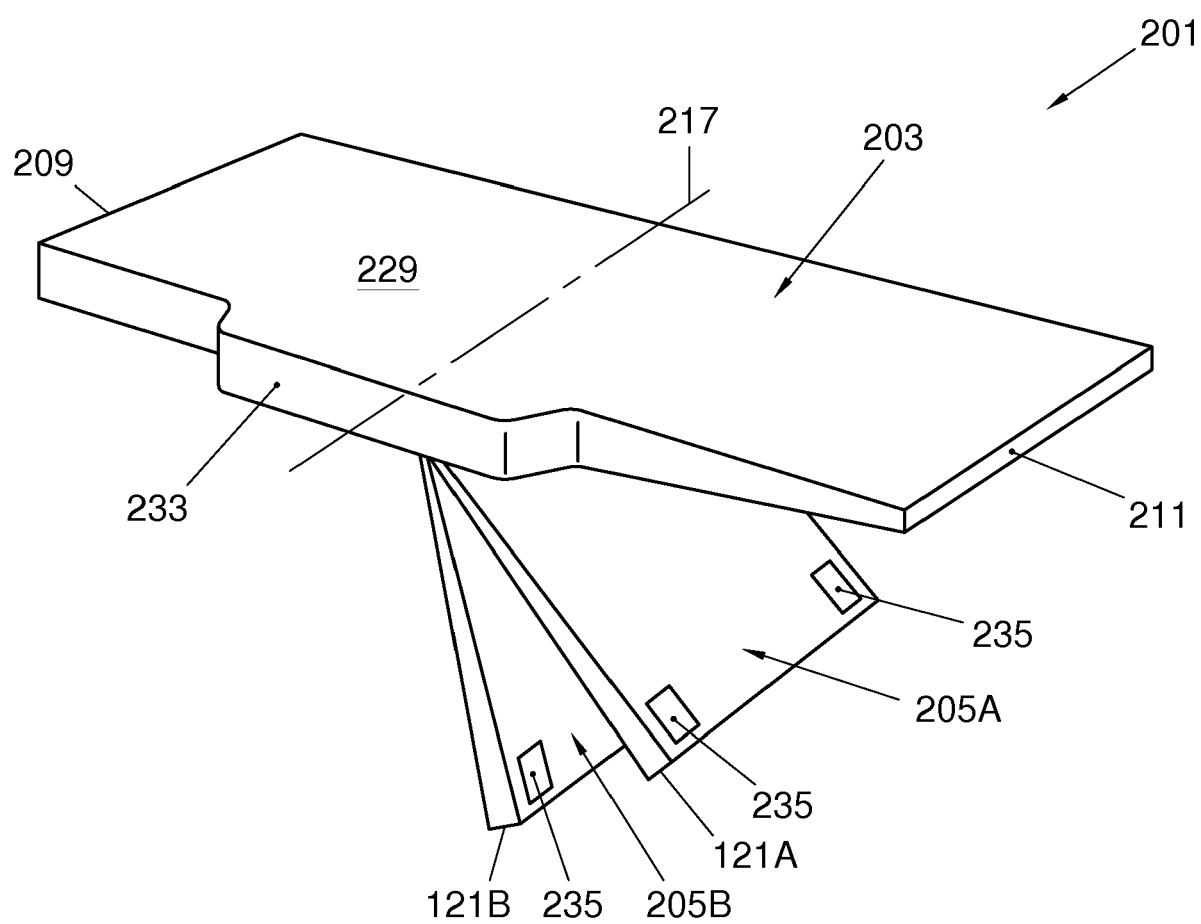


FIG. 5

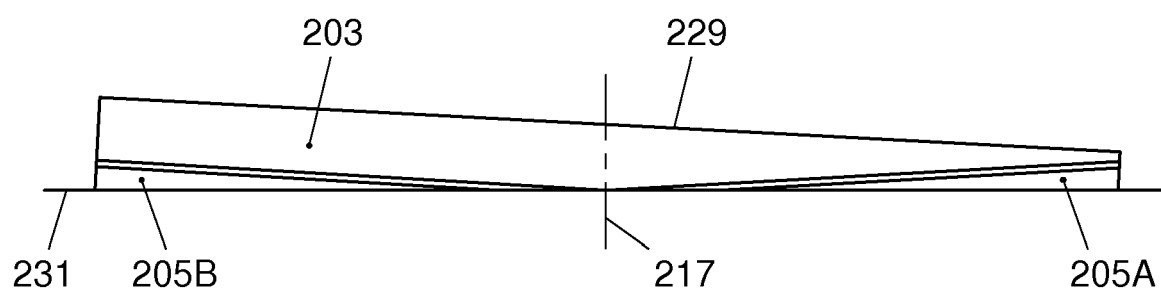


FIG. 6



EUROPEAN SEARCH REPORT

Application Number
EP 16 17 6633

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			TECHNICAL FIELDS SEARCHED (IPC)
			A47C B60N B62D
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 18 July 2016	Examiner Tempels, Marco
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**ANNEX TO THE EUROPEAN SEARCH REPORT
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