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(54) **FLOORBOARD AND FLOOR COVERING FOR RESILIENT FLOOR**

BODENPLATTE UND BODENABDECKUNG FÜR ELASTISCHEN BODEN

PLANCHE DE PLANCHER ET REVETEMENT DE PLANCHER POUR PLANCHER SOUPLE

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EP 1 570 143 B1

Description

Field of the Invention

[0001] The present invention relates to floorboards for making a resilient or energy-absorbing floor, i.e. a flooring for sports or other activities.

Background Art

[0002] The term "sports floor" relates to resilient floorings that exhibit sufficient resilience, bouncing effect or impact-absorbing capability to be suited for sports activities, dancing or other activities where a flooring that is kind to the users is desired.

[0003] There are mainly three categories of sports floor: i) point-elastic floors which consist of an elastic soft layer (i.e. a carpet) which is glued immediately to a hard base; ii) surface-elastic floors which consist of a comparatively flexurally rigid upper layer of assembled floorboards resting on a resilient carpet or on joists or spacer blocks which in turn rest on the base; and iii) combined constructions involving a carpet and joists or spacer blocks.

[0004] Category ii) includes, inter alia, US 4,819,932 which discloses a sports floor where solid floorboards, which are joined mechanically, are laid on a subfloor consisting of a large resilient base which gives the floor resilient properties. Category ii) also includes DE 860 40 04 U1, which discloses a sports floor where floorboards, which are joined mechanically, are laid on a subfloor consisting of a resilient base made up of a plurality of adjoining boards. The boards constituting the resilient base are laid so that their joints do not coincide with the joints of the floorboards.

[0005] One such category ii) document is US 3,902,293, which discloses a floorboard having a bottom layer comprising a sheet molded from a tangled network of thermoplastic fibers containing cells of gas at superatmospheric pressure, which provides sufficient resilience to be suitable as a basketball floor.

[0006] One type of sports floor of category iii) is shown, for instance, in US 5,778,621 (WO 98/39535), where an upper layer of floorboards rests on a carpet, which in turn rests on resilient joists arranged on the base.

[0007] Furthermore US 6,044,606 discloses a sports floor where resilient pads are arranged on the upper side of the subfloor.

[0008] EP 0 455 616 discloses a sports floor where a resilient material is arranged in grooves in the underside of the floorboards. Moreover, the floorboards shown in EP 0 455 616 are intended to be glued together to form a floor.

[0009] A frequent type of floorboards consists of a core and also a surface layer and a balancing layer. The core often consists of wood or wood fibre-containing material, such as MDF (Medium Density Fibreboard), HDF (High Density Fibreboard), particle board or plywood. The surface layer may be, for example, a thin hard decorative layer as found on so-called laminate floors. Alternatively, the surface layer may consist of wood or veneer, which can be treated to withstand wear, moisture etc, and which can be so thick as to allow regrinding of the floor. The function of the balancing layer is to prevent the floor from bending when exposed to, for instance, moisture or variations in temperature.

[0010] As shown in WO 94/26999, the floorboard can also be provided with a separate lower layer, made of floor board, felt, foam or the like, such as a sound-absorbing layer for impact sound insulation and to make the floor more pleasant to walk on. However, this layer should not be elastic since it should be capable of taking up irregularities of the base.

[0011] With a view to joining two or more floorboards to form a flooring, a plurality of different systems for mechanical joining of floorboards are known. Examples of such systems are shown in US-4,426,820, DE-121 11 75, DE-198 51 200 C1 (EP-A-0999321), FR-267 51 74, WO 99/66151, WO 00/66856, WO 97/47834, JP 3169967, WO 96/27721, GB 143 04 23 and in WO 02/55809. Also US 4,819,932 discloses a system for mechanical joining of floorboards along their long sides.

[0012] The above-mentioned sports floors, however, suffer from several drawbacks. One is that they are complex and consist of a large number of different parts that are to be assembled. This can take a relatively long time, which results in a high cost of installation. Another drawback is that they often take up a large space in the vertical direction. A plurality of the known sports floors are also difficult to disassemble, for instance when they are to be moved or in connection with repair and exchange of individual floorboards.

Summary of the Invention

[0013] An object of the present invention is to provide a floorboard according to prior art document WO 94/26999A which with maintained strength wholly or partly eliminates the above problems.

[0014] The object is achieved by means of a floorboard, a resilient floor, a kit of parts and methods according to the independent claims. Embodiments of the invention will appear from the dependent claims and also from the following description.

[0015] According to a first aspect of the invention, a floorboard is thus provided having the features at claim 1.

[0016] By "resilient base" is meant an elastic material that is capable of absorbing and emitting energy, i.e. that has a resilient function. According to one embodiment, the resilient base can have a greater thickness than the floorboard. The composition of materials, the thickness as well as the extent of the resilient base under the floorboard can be varied for the purpose of adjusting the floorboard to different applications, such as different types of sport.

[0017] By the resilient base being "arranged" is meant

that the resilient base is fixedly arranged on the floorboard. According to one embodiment, the resilient base is already arranged on the floorboard at the factory where the floorboard is manufactured.

[0018] With a floorboard of this type, a resilient floor can be provided practically as easily and quickly as a traditional parquet floor since the floorboards are complete when leaving the factory. Moreover, a small overall height is obtained since no complicated systems of joists are required.

[0019] By "edge portions" are meant portions along the edges of the floorboard. The "upper neighbouring parts" can, but need not, be in contact with each other when two floorboards are in a joined state. Furthermore they can have a very small vertical extent and be positioned anywhere in the upper part of the joint edge portion of the floorboard. According to one embodiment, the "neighbouring parts" can be the verge of the surface layer of the respective floorboards.

[0020] By the resilient base being arranged on the underside of the floorboard, the floorboard can quickly and easily be laid and taken up, which reduces the cost of installation.

[0021] The resilient base extends beyond the joint plane, the resilient base is offset relative to the joint between the floorboards, which increases the strength of the sports floor.

[0022] According to one embodiment, the resilient base is arranged so that, with the floorboards in a joined state, it extends at least partly under the neighbouring, substantially identical floorboard. By one and the same resilient base supporting the floorboard on which it is arranged and also the neighbouring floorboard, the two floorboards will move to the same extent in the vertical direction when subjected to load, thereby increasing the strength in the joint.

[0023] According to the same embodiment, the floorboard comprises a supporting layer, which is arranged between the underside of the floorboard and the resilient base. The supporting layer reduces the load applied to the mechanical locking system, especially when a mechanical locking system has been selected.

[0024] The supporting layer can have a greater modulus of elasticity than the resilient base. Materials that can be used for the supporting layer comprise, but are not limited to, MDF, HDF, plywood, particle board, wood material, plastic material or metal, such as aluminium. By the supporting layer being made more rigid than the resilient base, the load applied to the mechanical locking system will be reduced.

[0025] The horizontal extent of the supporting layer can be smaller than a horizontal extent of the floorboard but at least as great as a horizontal extend of the resilient base. By "horizontal extent" is meant the extent in a direction which is perpendicular to the edge portion and parallel to the surface of the floorboard. The horizontal extent of the supporting layer can be less than half the horizontal extent of the floorboard perpendicular to the joint plane.

[0026] The floorboard can along at least two parallel edges comprise a locking system integrated with the floorboard and intended for mechanical joining, vertically and horizontally, of the floorboard to the neighbouring, substantially identical floorboard.

[0027] By the locking system being "integrated" is meant that it is factory-mounted on the floorboard, or alternatively formed in one piece with the body of the floorboard.

[0028] With a mechanical locking system, a high surface finish is achieved by the locking system ensuring the fit of the joints. Moreover it will be a quick operation to install floorboards with a mechanical locking system. They can also be taken up to be used in a different location, or to replace individual floorboards that have been damaged.

[0029] The resilient base extends beyond an outer part of the locking system of the floorboard. By the resilient base extending beyond an outer part of the locking system of the floorboard, the strength is further increased.

[0030] According to a second aspect, the invention provides a flooring for resilient floors, which comprises floorboards of the type as described above.

[0031] According to a third aspect the invention provides a kit of parts having the features of claim 12.

[0032] The resilient base can be cut and, thus, adapted in advance to the floorboard in terms of size and shape. Alternatively, the resilient base can be delivered non-cut, for instance on a roll. According to this aspect, the resilient base can be mounted on the floorboard before or in connection with installation of the floorboard.

[0033] According to a fourth aspect, the invention provides a method for making for making a resilient floor having the features of claim 17.

[0034] The method is a quick and simple way of installing a resilient floor on an existing base.

[0035] According to a fifth aspect, the invention provides a method for manufacturing a floorboard having the features of claim 18.

Brief Description of the Drawings

[0036] The invention will now be described in more detail with reference to the accompanying schematic drawings, which show examples of embodiments of the invention.

[0037] Figs 1a and 1b are schematic cross-sectional views of two edges, provided with a mechanical locking system, of two neighbouring floorboards 1, 1', which are only provided with a resilient base 10 and form not part of the claimed invention.

[0038] Figs 2a and 2b are schematic cross-sectional views of two edges, provided with a mechanical locking system, of two neighbouring floorboards 1, 1', which are provided with a resilient base 10 and/or a supporting layer according to an embodiment of the invention.

[0039] Figs 3a-3c illustrate a floorboard with a mechan-

ical locking system, a resilient base and a supporting layer according to an embodiment of the invention.

[0040] Figs 4a-4c show different ways of arranging the resilient base 10, 10a, 10b, 10c and/or the supporting layer 11, 11a, 11b, 11c on the underside of a floorboard 1, 1'.

[0041] Fig. 5 shows further ways of arranging the resilient base 10, 10a, 10b, 10c and/or the supporting layer 11, 11a, 11b, 11c on the underside of a floorboard 1, 1'.

[0042] Fig. 6 shows another way of arranging the resilient base 10b, 10c and/or the supporting layer 11b, 11c on the underside of a floorboard.

Description of Embodiments

[0043] Figs 1a-1b schematically illustrate an embodiment of a floorboard not forming part of the claimed invention. In Figs 1a-1b, the floorboard is shown to be provided with a mechanical locking system, which has a tongue 23 and a groove 20 for locking in the vertical direction. Moreover, the locking system comprises a projecting strip 21 extending under the neighbouring floorboard 1' and supporting a locking element 22, which cooperates with a downwardly open locking groove 24 in the neighbouring floorboard 1'. The mechanical locking system shown in Figs 1a and 1b can be of the type as disclosed in WO 94/26999 or WO 99/66151. However, it will be appreciated that other locking system may also be used. The edge portions shown in Figs 1a-1b can be long sides 25a, 25b or short sides 26a, 26b of a floorboard 1.

[0044] A resilient base 10 is arranged on the underside of the floorboard 1 shown in Figs 1a and 1b. The resilient base 10 gives the sports floor resilience and an impact-absorbing capability. The resilient base 10 is arranged on the floorboard, i.e. it is mounted on the floorboard in connection with manufacture at the factory.

[0045] Moreover, an inner part L1 of the locking system, seen from the joint plane F, and outer part L2 of the locking system, seen from the joint plane F, are defined in Figs 1a-1b. The inner part L1 of the locking system is the part where the locking system ends, seen from the joint plane F and inwards to the floorboard, i.e. the part where the floorboard becomes "homogeneous". The outer part L2 of the locking system is the part where the locking system ends, seen from the joint plane and outwards from the floorboard. It will be appreciated that even if L1 and L2 in Fig. 2 are defined based on the left floorboard 1, they can also be defined based on the right floorboard 1'.

[0046] According to a not claimed embodiment, the resilient base 10 may extend outside the joint plane F, as is the case with the left floorboard 1 in Fig. 1a. Correspondingly, the resilient base 10' of the right floorboard 1' in Fig. 1a can be retracted relative to the joint plane F for the purpose of allowing joining of the floorboards 1, 1'.

[0047] According to another embodiment, the resilient base 10 of the left floorboard 1 extends also beyond the outer part L2 of the locking system, which is shown in Fig. Ia. The resilient base 10' of the right floorboard 1' can in this case be retracted to a corresponding, or greater, extent. It will be appreciated that the projecting part of the resilient base can also be arranged on the right floorboard in Fig. 1.

[0048] According to one more embodiment, the resilient base 10 can extend so far under the neighbouring floorboard (in the joined state) that the core of the neighbouring floorboard will rest on the resilient base.

[0049] The sports floor which is made by means of the described floorboard 1 is arranged in such a manner that a joint between two floorboards rests on a resilient base which extends under the two floorboards.

[0050] It will be appreciated that the resilient base 10 can be arranged so as to extend beyond the joint plane F on the long side as well as on the short side of the floorboard. Just as the design of the locking system may differ between the long side and the short side, also the extent of the resilient base 10 may differ between the short side and the long side. For example, the resilient base extends further beyond the joint plane on the short side than it does on the long side, but the opposite is also possible.

[0051] Further the resilient base 10 can be arranged so as to extend continuously along substantially the entire length of the edge of the floorboard 1 as shown in Fig. 3a. By "substantially" is here meant that the resilient base can deviate somewhat from the length of the edge of the floorboard. Moreover, for instance the length of the resilient base along the long side of the floorboard can be designed so that the short sides of the floorboard can be connected to short sides (or, in some cases, also long sides) of other floorboards 1'. Optionally, the resilient base can be arranged discontinuously, as a plurality of separated and spaced-apart resilient bases arranged along the edge. An example of this is shown regarding the short side of the floorboard shown in Fig. 3.

[0052] Furthermore the resilient base has an extent inwards from the edge of the floorboard 1, which extent can be selected to provide a floorboard 1 with the desired resilience. In brief, the extent of the resilient base on the underside of the floorboard, along the edges as well as transversely thereof, can be varied as claimed with a view to optimising both the resilience and the cost of the resilient base.

[0053] The material and thickness of the resilient base can be selected on the basis of the application for which the floor is intended. Examples of materials that may be used are expanded rubber or cellular plastics with open or closed cells or equivalent elastic materials. In an embodiment tested by the Applicant, use is made of a resilient base of the type RG 30, which is a cellular plastic resilient base of polyethylene, with closed cells, and which is delivered by National Gummi AB, Halmstad, Sweden. It will be appreciated that the resilient base can be selected among a large number of different materials and thicknesses, depending on the application.

[0054] With reference to Figs 2a and 2b, a second embodiment will, which is in accordance with the claimed invention, now be described. Figs 2a and 2b are detailed schematic cross-sectional views of two edges, provided with a mechanical locking system, of two neighbouring floorboards 1, 1', which are provided with a resilient base 10 and a supporting layer 11 according to another embodiment of the invention. In Fig. 2a, the floorboards 1, 1' are arranged next to each other, and in Fig. 2b they are joined together. The supporting layer 11 shown in Figs 2a and 2b can be arranged between the resilient base 10 and the underside of the floorboard (i.e. the underside of the balancing layer 4). The function of the supporting layer 11 is, inter alia, to strengthen the locking system so that it will not be damaged when a joint is subjected to a load from above.

[0055] The supporting layer 11 can consist of any material, such as MDF, HDF, plywood, particle board, wood, metal, such as aluminium, or plastic, and may have any thickness.

[0056] According to one embodiment of the invention, the supporting layer can have substantially the same extent as the resilient base 10.

[0057] It will also be appreciated that the extents of the supporting layer 11 and the resilient base 10 can differ from each other by respecting the conditions of extension set in the claims. For instance, the entire floorboard can be provided with a supporting layer while the resilient layer is arranged only along the edges of the floorboard.

[0058] According to an embodiment tested by the Applicant, the resilient base 10 and the supporting layer 11 have substantially the same extent and extend on the long side 16 mm outside the outer part L2 of the locking system, and on the short side 40 mm outside the outer part L2 of the locking system.

[0059] The resilient base 10 can be attached to the underside of the floorboard 1, or to a part thereof by means of arbitrary fastening means. It is possible to use, for instance, glue, rivets, staples, screws, or adhesive tape (double-stick). It is also possible to attach the resilient base to the floorboard by using thermal adhesion, i.e. by heating the material of the resilient base and/or the floorboard in order to cause adhesion. In one embodiment, only part of the surface, facing the floorboard 1, of the resilient base 10 is provided with fastening means. Thus, for instance that part of the resilient base 10 which extends beyond the inner part L1 of the locking system, or that part of the resilient base 10 which extends beyond the joint plane F can be without fastening means, so that the locking system can operate independently, or substantially independently, of the resilient base 10.

[0060] According to one embodiment, the supporting layer/resilient base is attached only under that part of the floorboard which does not constitute the locking system.

[0061] What has been said above regarding the extent and fixing of the resilient base 10 to the floorboard thus also applies to the supporting layer 11. Likewise the resilient base can be fixed to the supporting layer 11 in one of the ways described with regard to the fixing of the resilient base to the floorboard.

[0062] Fig. 3a is a perspective view of a floorboard 1 for a sports floor, which according to a third embodiment of the invention has a mechanical locking system, a resilient base 11 and a supporting layer 10. As shown in Figs 3a-3c, the floorboard can be rectangular and thus have long sides 25a, 25b and short sides 26a, 26b.

[0063] The sports floor can be based on standard type floorboards 1, 1', such as those used for parquet floors, laminate floors or wooden floors. Such floorboards usually comprise a core 3 of, for instance, wood, wood slats, plywood, HDF, MDF, fibreboard or like materials. In some applications, however, specially manufactured floorboards may be preferable.

[0064] The upper side of the core 3 (Figs 1, 2) is provided with a surface layer 2 (Figs 1, 2), which serves to make the floorboard resistant to wear, but also to give it an attractive appearance. In wood floors, the surface layer 2 can be made of hardwood, such as oak or maple. In laminate floors, the surface layer may consist of a thin decorative layer laminated with a transparent wear layer (not shown).

[0065] The underside of the core 3 (Figs 1, 2) can be provided with a balancing layer 4 (Figs 1, 2), whose primary function is to prevent the floorboard from bending when the core 3 and the surface layer 2 are expanded to different degrees, for instance owing to variations in moisture content or temperature. The balancing layer 4 can be made of, for example, veneer, laminate film, plywood, HDF, MDF, particle board or like materials.

[0066] Moreover, the floorboard shown in Figs 3a-3c has a mechanical locking system of the type as described in, for example, WO 99/66151, which allows joining of the floorboard 1 to neighbouring, identical floorboards 1', so that neighbouring parts of the edge portions of the floorboards 1, 1' in the joined state define a joint plane F, perpendicular to the main plane P of the floorboards. The joined edge portions of the long sides 25a, 25b define a first joint plane F1, and the joined edge portions of the short sides 26a, 26b define a second joint plane F2.

[0067] Furthermore, the underside of the floorboard 1, along a long side 25a and a short side 26a, is provided with an impact-absorbing resilient base 10 and a supporting layer 11 which extend beyond the respective joint planes F1, F2.

[0068] Along the long side 25a of the floorboard, the edge portion is provided with a band-like supporting layer 11, which extends on both sides of the joint plane F1 and which extends beyond an outer part L2 (Figs 1a, 2a) of the locking system. In the shown embodiment, the resilient base 10 has on the long side substantially the same extent as the supporting layer 11. According to the embodiment shown in Figs 3a-3c, the edge portion of the opposite long side 25b is not provided with a supporting layer or resilient base.

[0069] The resilient base 10 on the underside of the floorboard 1 gives the sports floor resilience and a shock-

absorbing capability. The resilient base 10 is arranged on the floorboard, i.e. it is mounted on the floorboard in connection with manufacture thereof at the factory.

[0070] On the first short side 26a, the edge portion.is provided with a band-like supporting layer 11 which extends further beyond the joint plane F2 than do the supporting layer 11 and the resilient base 10 on the edge portion of the long side 25a. Moreover the resilient base 10 on this short side 26a has an extent that corresponds to part of the supporting layer 11.

[0071] The edge portion of the second short side 26b has a supporting layer 11 and, arranged thereon, a resilient base 10, which have a smaller extent than the corresponding resilient base/supporting layer on the edge portion of the first short side 26a, and which do not extend beyond the joint plane F2. In one embodiment, the supporting layer 11 and the resilient base 10 on this second short side 26b can be arranged completely inside an inner part L1 (Fig. la) of the locking system of the short side. Also in this case, the extent of the resilient base 10 can correspond to only part of the extent of the supporting layer 11. Arranging a supporting layer/resilient base in this manner on the edge portion of the second short side 26b facilitates laying of the floor by supporting the floorboard 1 so that it lies flat and stable on the base before being joined to the other floorboards.

[0072] Optionally, the resilient base can be arranged in a band-like portion along the joint. Consequently, the resilient base need not extend over the underside of the entire floorboard, which saves material and which, by the edge portions of the floorboards resting on the resilient base, gives the floorboards a greater degree of resilience, since under that part of the surface of the floorboards which is not provided with the resilient layer, they have a space between the base and the underside of the floorboard. According to the embodiment shown in Fig. 1, this arrangement can be used on the long side as well as on the short side.

[0073] Figs 4a-4c illustrate different ways of arranging the resilient base 10, 10a, 10b, 10c and the supporting layer 11, 11a, 11b, 11c on the underside of a floorboard 1, 1'.

[0074] In Fig. 4a, a resilient base 10 and a supporting layer 11 of substantially the same size as the floorboard 1, 1' are arranged on the underside thereof, so that the resilient base/the supporting layer is offset in the longitudinal as well as the transverse direction of the floorboard.

[0075] In Fig. 4b, three resilient bases 10a, 10b, 10c and optionally two more supporting layers 11a, 11b, 11c are arranged on the underside of the floorboard 1, 1'. First 10a, 11a, and second 10b, 11b resilient bases/supporting layers are arranged in the longitudinal direction of the floorboard 1, 1', so that the first resilient base/supporting layer 10a, 11a is arranged completely inside the edges of the floorboard, and the second resilient base/supporting layer 10b, 11b is arranged along one of the edges of the floorboard 1, 1', so that the resilient base/supporting layer extends beyond the joint plane F (not shown). The third resilient base/supporting layer is arranged to extend beyond the joint plane on the short side of the floorboard and also beyond part of the joint plane of the long side.

[0076] In Fig. 4c, two resilient bases/supporting surfaces 10a, 10b, 11a, 11b are arranged in the longitudinal direction of the floorboard. The first resilient base/supporting layer extends only beyond the joint plane of the short side, while the second resilient base/supporting layer 10b, 11b extends beyond the joint plane of the short side as well as the long side.

[0077] A space between the first and the second resilient bases/supporting layers 10a, 10b; 11a, 11b as shown in Figs 4b and 4c can be formed to modify the resilient function of the floorboards. For instance, a wide space between two supporting layers or resilient bases can be used to give the floorboard better resilience.

[0078] Fig. 5 shows another way of arranging resilient bases 10, 10a, 10b, 10c and supporting layers 11, 11a, 11b, 11c on the underside of a floorboard 1, 1'. In Fig. 5, a plurality of shorter resilient bases/supporting layers 10d, 11d are arranged so as to each extend beyond the joint plane of the long side. At the short side of the floorboard, a resilient base/supporting layer 10c, 11c is arranged to extend beyond the joint plane of the short side as well as the long side.

[0079] Also in the embodiment according to Fig. 5, a space between the resilient bases/supporting layers can be used to modify the resilient function of the floorboards.

[0080] It will be appreciated that width and length of each of the resilient bases/supporting layers 10, 10a, 10b, 10c, 10d; 11, 11a, 11b, 11c, 11d can be selected to modify the resilient function of the floorboards.

[0081] As described above, the floorboard can be provided with a locking system for joining the floorboards. A common variant of locking system is a tongue-and-groove joint, which consists of a tongue which is inserted into a groove and fixed therein by means of glue. In glue joints, the floorboards are joined in the vertical direction D1 by means of the tongue and the groove, and in the horizontal direction D2 by means of the glue. When two floorboards 1, 1' are joined along their edges, upper neighbouring parts 7, 7' (Figs 1, 2) of edge portions 25a, 25b; 26a, 26b of the floorboards define a joint plane F, which is vertical, i.e. perpendicular to the main plane P of the floorboards. In the case where the floorboard has locking systems on the long sides 25a, 25b as well as the short sides 26a, 26b, first F1 and second F2 joint planes are defined, which can be orthogonal or substantially orthogonal to each other.

[0082] As described above, there are also a plurality of mechanical locking systems, which are capable of joining floorboards without necessitating the use of glue. Thus, a mechanical locking system can mechanically join the floorboards both vertically D1 and horizontally D2. Such a mechanical locking system has the advantage that the laying of the floor will be speeded up while at the

same time a durable flooring is obtained, without necessitating the use of glue. This may thus result in reduced use of glue, which may be advantageous from the environmental point of view.

[0083] According to one embodiment, the floorboards according to the invention are, along their long sides 25a, 25b and short sides 26a, 26b, provided with such a mechanical locking system. It will be appreciated that anyone of the known mechanical locking systems can be selected and that the locking system on the short sides 26a, 26b need not be of the same type or have the same composition of materials as the locking system on the long sides 25a, 25b.

[0084] The floorboard can be manufactured or assembled by a floorboard of prior-art type being provided with the resilient base 10 and optionally the supporting layer 11. According to one embodiment, this is carried out at the factory, and the floorboard is delivered with a resilient base 10 and optionally a supporting layer 11. According to another embodiment, the floorboard and the resilient base are delivered in the form of a kit of parts, which is joined before the installation of the sports floor. In such a kit of parts, the resilient base can be adjusted in advance in terms of shape and size to be mounted on the floorboard before laying thereof. Alternatively, the resilient base can be delivered in bulk, for instance on a roll, and then, after cutting, be mounted on the floorboard.

[0085] If the kit comprises a supporting layer, this, and also the resilient base, can be mounted on the floorboard, so that the floorboard is delivered with the supporting layer mounted. In this case, the resilient base can be delivered separately as described above. Alternatively, also the supporting layer can be delivered separately, optionally adjusted in terms of shape and size to be mounted on the floorboard before laying thereof.

[0086] It is also possible to provide a kit of parts, which comprises on the one hand a floorboard and, on the other hand, an assembly of supporting layer and resilient base, in which case the assembly can be adjusted in terms of shape and size to be mounted on the floorboard.

[0087] In the above-described embodiments of a kit of parts, the floorboard, the supporting layer and the resilient base can be provided with fastening means for joining to form a floorboard with the resilient base and the supporting layer mounted. Such fastening means comprise, but are not limited to, glue, adhesive tape, screw means, rivets and other mechanical fastening means.

[0088] It will further be appreciated that the embodiments shown in Figs 4a-c and Fig. 5 can be combined, and that it is possible to choose the location of the resilient bases according to one embodiment while at the same time the supporting layer is located according to another embodiment. Other geometric shapes of the resilient base/supporting layer are, of course, also conceivable. It will also be appreciated that the invention may be varied within the scope of the appended claims.

[0089] Fig. 6 shows another way in which the resilient base 10b, 10c and the supporting layer 11b, 11c can be arranged on the underside of the floorboard. In this embodiment, a first resilient base 10b and supporting layer 11b is arranged on the long side of the floorboard in such a manner that it extends beyond the joint plane F of the long side and extends along substantially the entire length of the long side. The extent of the resilient base inside the joint plane F can be substantially smaller than the width of the floorboard, and in one embodiment substantially smaller than half the width of the floorboard. In further embodiments, the extent inside the joint plane can be, for instance, 1/3, 1/4, 1/5 or 1/6 of the width of the floorboard. In still further embodiments, the extent can be from 1 cm up to 5 or 10 cm. The extent outside the joint plane F can also be adjusted to what turns out to be convenient. In one embodiment, the resilient base 10b and/or the supporting layer 11b extends outside the outer part L2 of the locking system. For instance, the extent can be between 0 and 10 cm from the outer part L2 of the locking system, but a greater extent is not excluded, especially if large floorboards are used.

[0090] A second resilient base 10c and/or supporting layer 11c is arranged on the short side of the floorboard and extends beyond the joint plane F of the short side and extends along substantially the entire length of the short side. Regarding the extent inside and outside the joint plane of the short side, reference is made to that described with regard to the long side.

[0091] It will be appreciated that the extent inside and outside the joint plane F of the short side and also the extent inside and outside the joint plane F of the long side can be selected independently of each other.

[0092] Besides, the resilient base 1Ob 10c and/or the supporting layer 11b, 11c in Fig. 6 can be arranged and fixed to the floorboard analogously to what has been described above with reference to Figs 1 and 2.

Claims

1. A floorboard (1) for making a resilient floor by joining to at least one neighbouring, substantially identical floorboard (1'), so that joined upper neighbouring parts (7, 7') of the edge portions of the floorboards (1, 1') together define a joint plane (F), perpendicular to the main plane (P) of the joined floorboards,
the floorboard comprising a floorboard body and a locking system, which is arranged along at least two parallel edges (25a, 25b; 26a, 26b) of the floorboard (1) and integrated with the floorboard, for mechanical joining, vertically (D1) and horizontally (D2), of the floorboard (1) to the neighbouring, substantially identical floorboard (1'),
a resilient base (10) which is arranged on an underside of the floorboard (1, 1') body and which extends beyond said joint plane (F), **characterised by**
a supporting layer (11) which is arranged between the underside of the floorboard (1) body and the resilient base (10), and

wherein the resilient base (10) extends beyond an outermost part (L2) of the locking system of the floorboard (1), as seen from the joint plane (F) and outwards.

2. A floorboard as claimed in claim 1, **characterised in that** the resilient base is arranged so that, with the floorboards in a joined state, it extends at least partly under the neighbouring, substantially identical floorboard (1').

3. A floorboard as claimed in claim 1 or 2, **characterised in that** the resilient base (10) is made of.an elastic material.

4. A floorboard as claimed in claim 3, **characterised in that** said elastic material comprises expanded rubber or cellular plastic.

5. A floor board as claimed in any of the preceeding claims wherein the supporting layer (11) has a horizontal (D2) extent which is at least as great as a horizontal (D2) extent of the resilient base (10).

6. A floorboard as claimed in any one of the preceding claims, **characterised in that** the horizontal (D2) extent of the supporting layer is smaller than a horizontal (D2) extent of the floorboard (1).

7. A floorboard as claimed in any one of the preceding claims, **characterised in that** the horizontal (D2) extent of the supporting layer is less than half the horizontal (D2) extent of the floorboard.

8. A floorboard as claimed in any one of the preceding claims, **characterised in that** the supporting layer (11) has a greater modulus of elasticity than the resilient base (10).

9. A floorboard as claimed in any one of the preceding claims, **characterised in that** the supporting layer (11) consists of MDF, HDF, plywood, particle board, wood material, plastic material or metal.

10. A floorboard as claimed in any one of the preceding claims, **characterised in that** the long sides (25a, 25b) of the floorboard and the short sides (26a, 26b) of the floorboard are provided with respectively first and second mechanical locking systems integrated with the floorboard (1), for mechanical joining, vertically (D1) and horizontally (D2), of the floorboard (1) to neighbouring, substantially identical floorboards (1'), so that joined upper neighbouring parts (7, 7') of the edge portions of the long sides (25a, 25b) and short sides (26a, 26b), respectively, together define first and second joint planes (F1, F2) which are perpendicular to the main plane (P) of the joined floorboards, the resilient base at the edge portion (26a) of a short side and the edge portion (25a) of a long side extending beyond the respective joint planes (F1, F2).

11. A floorboard as claimed in claim 8, **characterised in that** the resilient base (10) at the edge portion (26a) of the short side extends further beyond the first joint plane (F1) than beyond the second joint plane (F2) at the edge portion of the long side (25a).

12. A flooring for resilient floors, **characterised in that** it comprises floorboards (1, 1') according to any one of the preceding claims.

13. A kit of parts for making the floorboard of claim 1, **characterised by**
a floorboard (1) comprising a floorboard body, for joining to a neighbouring, substantially identical floorboard (1'), so that joined upper neighbouring parts (7, 7') of the edge portions of the floorboards (1, 1') together define a joint plane (F), which is perpendicular to the main plane (P) of the joined floorboards,
a resilient base (10), which in terms of shape and size is adapted to be arranged on an underside of the floorboard (1) body, so that the resilient base (10) extends beyond said joint plane (F), and
a supporting layer (11), which in terms of size and shape is adapted to be arranged between said underside of the floorboard (1) body and said resilient base (10),
the floorboard (1) along at least two parallel edges being provided with a locking system integrated with the floorboard, for mechanical joining, vertically (D1) and horizontally (D2), of the floorboard (1) to the neighbouring, substantially identical floorboard (1'), wherein the resilient base (10) is sized and adapted to extend beyond an outermost part (L2) of the locking system of the floorboard (1), as seen from the joint plane (F) and outwards

14. A kit of parts as claimed in claim 13, **characterised in that** the resilient base (10) is provided with fastening means to be arranged on the underside of the floorboard (1).

15. A kit of parts as claimed in claim 13, **characterised in that** the underside of the floorboard (1) body is provided with fastening means for arranging the resilient base (10).

16. A kit of parts as claimed in any one of claims 13-15, **characterised in that** the supporting layer (11) is provided with fastening means to be arranged between said underside of the floorboard (1) body and said resilient base (10).

17. A kit of parts as claimed in any one of claims 13-16,

characterised in that said resilient base (10) has a first horizontal extent which is substantially equal to a length of a first edge (25a, 25b) of the floorboard, and a second horizontal extent which is less than half a length of a second edge (26a, 26b) of the floorboard (1).

18. A method for making the flooring of claim 12 by joining a floorboard (1) having a floorboard body to a neighbouring, substantially identical floorboard (1'), so that joined upper neighbouring parts (7; 7') of the edge portions on the floorboards (1, 1') together define a joint plane (F), which is perpendicular to the main plane (P) of the joined floorboards, **characterised by** joining the floorboards (1, 1') so that:

a resilient base (10) and a supporting layer (11), which are arranged on an underside of the floorboard (1) body, extend beyond said joint plane (F), and
the resilient base (10) extends beyond an outermost part (L2) of the locking system of the floorboard (1), as seen from the joint plane (F) and outwards,
said joining comprising mechanical joining, vertically (D1) and horizontally (D2), of the floorboard (1) to the neighbouring, substantially identical floorboard (1').

19. A method for manufacturing a floorboard (1) for making a resilient floor, **characterised by**
providing a floorboard, having a floorboard body, which floorboard is designed for joining to a neighbouring, substantially identical floorboard (1'), so that joined upper neighbouring parts (7, 7') of the edge portions of the floorboards (1, 1') together define a joint plane (F), which is perpendicular to the main plane (P) of the joined floorboards,
arranging on an underside of the floorboard (1) body a resilient base (10), which extends beyond said joint plane (F) and beyond an outermost part (L2), seen from the joint plane (F) and outwards, of the locking system of the floorboard (1), arranging a supporting layer (11) between said underside of said floorboard (1) body and said resilient base (10), and
arranging along at least two parallel edges of the floorboard a locking system integrated with the floorboard; for mechanical joining, vertically (D1) and horizontally (D2), of the floorboard (1) to the neighbouring, substantially identical floorboard (1').

Patentansprüche

1. Bodenplatte (1) zum Herstellen eines elastischen Bodens durch Verbinden mit zumindest einer benachbarten, im Wesentlichen identischen Bodenplatte (1'), so dass die verbundenen oberen, benachbarten Teile (7, 7') der Kantenbereiche der Bodenplatten (1, 1') zusammen eine Verbindungsebene (F) bilden, senkrecht zu der Hauptebene (P) der verbundenen Bodenplatten,
wobei die Bodenplatte ein Bodenplattenkörper und ein Verriegelungssystem umfasst, welches entlang zumindest zweier paralleler Kanten (25a, 25b; 26a, 26b) der Bodenplatte (1) angeordnet ist und mit der Bodenplatte integriert ausgebildet ist, zum mechanischen Verbinden, vertikal (D1) und horizontal (D2), der Bodenplatte (1) mit der benachbarten, im Wesentlichen identischen Bodenplatte (1.'),
gekennzeichnet durch,
eine elastische Basis (10), die an einer Unterseite des Körpers der Bodenplatte (1,1') angeordnet ist, und die sich über die Verbindungsebene (F) erstreckt, und
eine Stützschicht (11), die zwischen der Unterseite des Körpers der Bodenplatte (1) und der elastischen Basis (10) angeordnet ist,
wobei die elastische Basis (10) sich über einen äußersten Teil (L2) des Verriegelungssystems der Bodenplatte (1), von der Verbindungsebene (F) aus betrachtet und nach außen, erstreckt.

2. Bodenplatte gemäß Anspruch 1,
dadurch gekennzeichnet, dass
die elastische Basis so angeordnet ist, dass diese, mit den Bodenplatten in einem verbundenen Zustand, sich zumindest teilweise unter die benachbarte, im Wesentlichen identische Bodenplatte (1') erstreckt.

3. Bodenplatte gemäß Anspruch 1 oder 2,
dadurch gekennzeichnet, dass
die elastische Basis (10) aus einem elastischen Material hergestellt ist.

4. Bodenplatte gemäß Anspruch 3,
dadurch gekennzeichnet, dass
das elastische Material Schaumgummi oder Zellkunststoff umfasst.

5. Bodenplatte gemäß einem der vorherigen Ansprüche, wobei die Stützschicht (11) ein horizontales (D2) Ausmaß aufweist, welches zumindest so groß ist, wie das horizontale (D2) Ausmaß der elastischen Basis (10).

6. Bodenplatte gemäß einem der vorherigen Ansprüche,
dadurch gekennzeichnet, dass
das horizontale (D2) Ausmaß der Stützschicht kleiner ist als ein horizontales (D2) Ausmaß der Bodenplatte (10).

7. Bodenplatte gemäß einem der vorherigen Ansprüche,

dadurch gekennzeichnet, dass
das horizontale (D2) Ausmaß der Stützschicht kleiner ist als die Hälfte des horizontalen (D2) Ausmaßes der Bodenplatte.

8. Bodenplatte gemäß einem der vorhergehenden Ansprüche,
dadurch gekennzeichnet, dass die Stützschicht (11) ein größeres Elastizitätsmodul aufweist, als die elastische Basis (10).

9. Bodenplatte gemäß einem der vorherigen Ansprüche,
dadurch gekennzeichnet, dass
die Stützschicht (11) aus MDF, HDF, Sperrholz, Pressspan, Holzmaterial, Kunststoffmaterial oder Metall besteht.

10. Bodenplatte gemäß einem der vorhergehenden Ansprüche,
dadurch gekennzeichnet, dass
die langen Seiten (25a, 25b) der Bodenplatte und die kurzen Seiten (26a, 26b) der Bodenplatte mit entsprechenden ersten und zweiten mechanischen Verriegelungssystemen, die integriert in die Bodenplatte (1) sind, ausgebildet sind, um die Bodenplatte (1) mit der benachbarten, im Wesentlichen identischen Bodenplatte (1') mechanisch vertikal (D1) und horizontal (D2) zu verbinden, so dass verbundene, obere benachbarte Teile (7, 7') der Kantenbereiche der langen Seiten (25a, 25b) und der kurzen Seiten (26a, 26b) entsprechend zusammen erste und zweite Verbindungsebenen (F1, F2) bilden, die senkrecht zu der Hauptebene (P) der verbundenen Bodenplatten sind, wobei die elastische Basis an dem Kantenbereich (26a) einer kurzer Seite und dem/r Kantenbereich (25a) einer langen Seite sich über die entsprechende Verbindungsebene (F1, F2) erstreckt/en.

11. Bodenplatte gemäß Anspruch 8,
dadurch gekennzeichnet, dass
die elastische Basis (10) an dem Kantenbereich (26a) der kurzen Seite sich weiter über die erste Verbindungsebene (F1) erstreckt, als über die zweite Verbindungsebene (F2) an dem Kantenbereich der langen Seite (25a).

12. Fußbodenbelag für elastische Böden,
dadurch gekennzeichnet, dass
dieser Bodenplatten (1, 1') gemäß einem der vorherigen Ansprüche umfasst.

13. Bausatz aus Teilen zum Herstellen der Bodenplatten gemäß Anspruch 1, **gekennzeichnet, durch**
eine Bodenplatte (1), umfassend einen Bodenplattenkörper, zum Verbinden mit einer benachbarten, im Wesentlichen identischen Bodenplatte (1'), so dass verbundene, obere benachbarte Teile (7, 7') der Kantenbereiche der Bodenplatten (1, 1') zusammen eine Verbindungsebene (F) bilden, die senkrecht zu der Hauptebene (P) der verbundenen Bodenplatten ist,
eine elastische Basis (10), welche hinsichtlich Form und Größe angepasst ist, um an einer Unterseite des Körpers der Bodenplatte (1) angeordnet zu werden, so dass die elastische Basis (10) sich über die Verbindungsebene (F) erstreckt, und
eine Stützschicht (11), welche hinsichtlich Größe und Form angepasst ist, um zwischen der Unterseite des Körpers der Bodenplatte (1) und der elastischen Basis (10) angeordnet zu werden, wobei die Bodenplatte (1) entlang zumindest zwei paralleler Kanten mit einem Verriegelungssystem, das in der Bodenplatte integriert ist, ausgebildet ist, um die Bodenplatte (1) mit der benachbarten, im Wesentlichen identischen Bodenplatte (1') mechanisch vertikal (D1) und horizontal (D2) zu verbinden,
wobei die elastische Basis (10) so bemessen und angepasst ist, dass diese sich über einen äußersten Teil (L2) des Verriegelungssystems der Bodenplatte (1), betrachtet von der Verbindungsebene (F) und nach außen erstreckt.

14. Bausatz von Teilen gemäß Anspruch 13,
dadurch gekennzeichnet, dass
die elastische Basis (10) mit Befestigungsmitteln ausgebildet ist, um an der Unterseite der Bodenplatte (1) angeordnet zu werden.

15. Bausatz von Teilen gemäß Anspruch 13,
dadurch gekennzeichnet, dass
die Unterseite des Körpers der Bodenplatte (1) mit Befestigungsmitteln zum Anordnen der elastischen Basis (10) ausgebildet ist.

16. Bausatz von Teilen gemäß einem der vorherigen Ansprüche 13 bis 15,
dadurch gekennzeichnet, dass
die Stützschicht (11) ausgebildet ist mit Befestigungsmitteln, um zwischen der Unterseite des Körpers der Bodenplatte (1) und der elastischen Basis (10) angeordnet zu werden.

17. Bausatz von Teilen gemäß einem der vorherigen Ansprüche 13 bis 16,
dadurch gekennzeichnet, dass
die elastische Basis (10) ein erstes horizontales Ausmaß, dass im Wesentlichen gleich ist zu einer Länge einer ersten Kante (25a, 25b) der Bodenplatte und ein zweites horizontales Ausmaß, dass kleiner ist als die Hälfte einer Länge einer zweiten Kante (26a, 26b) der Bodenplatte (1), aufweist.

18. Verfahren zur Herstellung des Fußbodenbelages gemäß Anspruch 12, durch Verbinden einer Boden-

platte (1) mit einem Bodenplattenkörper mit einer benachbarten, im Wesentlichen identischen Bodenplatte (1'), so dass verbundene obere benachbarte Teile (7, 7') der Kantenbereiche an den Bodenplatten (1,1') zusammen eine Verbindungsebene (F) bilden, die senkrecht zu der Hauptebene (P) der verbundenen Bodenplatten ist,
gekennzeichnet durch
Verbinden der Bodenplatten (1, 1') so dass:

eine elastische Basis (10) und eine Stützschicht (11), die an einer Unterseite des Körpers der Bodenplatte (1) angeordnet sind, sich über die Verbindungsebene (F) erstrecken und die elastische Basis (10) sich über einen äußersten Teil (L2) des Verriegelungssystems der Bodenplatte (1), betrachtet von der Verbindungsebene (F) aus und nach außen erstreckt, wobei das Verbinden das mechanische, vertikale (D1) und horizontale (D2) Verbinden der Bodenplatte (1) mit der benachbarten, im Wesentlichen identischen Bodenplatte (1') umfasst.

19. Verfahren zum Herstellen einer Bodenplatte (1) zur Herstellung eines elastischen Bodens, **gekennzeichnet durch**,
Bereitstellen einer Bodenplatte mit einem Bodenplattenkörper, wobei die Bodenplatte ausgebildet ist zum Verbinden mit einer benachbarten, im Wesentlichen identischen Bodenplatte (1'), so dass verbundene obere benachbarte Teile (7, 7') der Kantenbereiche der Bodenplatten (1,1') zusammen eine Verbindungsebene (F), die senkrecht zu der Hauptebene (P) der verbundenen Bodenplatten ist, bilden,
Anordnen einer elastischen Basis (10) an einer Unterseite des Körpers der Bodenplatte (1), die sich über die Verbindungsebene (F) und über einen äußersten Teil (L2), des Verriegelungssystems der Bodenplatte (1), betrachtet von der Verbindungsebene (F) und nach außen erstreckt,
Anordnen einer Stützschicht (11) zwischen der Unterseite des Körpers der Bodenplatte (1) und der elastischen Basis (10) und
Anordnen eines Verriegelungssystems, das integriert in die Bodenplatte ist, entlang zumindest zweier paralleler Kanten der Bodenplatte, um mechanisch, vertikal (D1) und horizontal (D2) die Bodenplatte (1) mit der benachbarten, im Wesentlichen identischen Bodenplatte (1') zu verbinden.

Revendications

1. Planche de plancher (1) pour réaliser un plancher souple en joignant au moins une planche de plancher voisine, sensiblement identique (1'), de telle sorte que des parties voisines supérieures (7, 7') des parties périphériques des planches de plancher (1, 1') définissent ensemble un plan de joint (F), perpendiculaire au plan principal (P) des planches de plancher jointes,
la planche de plancher comprenant un corps de planche de plancher et un système de blocage, qui est disposé le long d'au moins deux bords parallèles (25a, 25b ; 26a, 26b) de la planche de plancher (1) et intégrés à la planche de plancher, pour obtenir un joint mécanique, verticalement (D1) et horizontalement (D2), de la planche de plancher (1) avec la planche de plancher voisine, sensiblement identique (1'),
caractérisée par
une base souple (10) qui est disposée en dessous du corps de la planche de plancher (1, 1') et qui s'étend au-delà dudit plan de joint (F), et
une couche de support (11) qui est disposée entre le dessous du corps de la planche de plancher (1) et la base souple (10),
dans laquelle la base souple (10) s'étend au-delà d'une partie la plus à l'extérieur (L2) du système de blocage de la planche de plancher (1), tel qu'observé depuis le plan de joint (F) et vers l'extérieur.

2. Planche de plancher selon la revendication 1, **caractérisée en ce que** la base souple est disposée de telle sorte que, avec les planches de plancher dans un état joint, elle s'étend au moins partiellement sous la planche de plancher voisine, sensiblement identique (1').

3. Planche de plancher selon la revendication 1 ou 2, **caractérisée en ce que** la base souple (10) est composée d'un matériau élastique.

4. Planche de plancher selon la revendication 3, **caractérisée en ce que** ledit matériau élastique comprend du caoutchouc expansé ou du plastique alvéolaire.

5. Planche de plancher selon l'une quelconque des revendications précédentes,
dans laquelle la couche de support (11) comprend une extension horizontale (D2) qui est au moins aussi importante qu'une extension horizontale (D2) de la base souple (10).

6. Planche de plancher selon l'une quelconque des revendications précédentes, **caractérisée en ce que** l'extension horizontale (D2) de la couche de support est plus petite qu'une extension horizontale (D2) de la planche de plancher (1).

7. Planche de plancher selon l'une quelconque des revendications précédentes, **caractérisée en ce que** l'extension horizontale (D2) de la couche de support est inférieure de moitié à l'extension horizontale (D2) de la planche de plancher.

8. Planche de plancher selon l'une quelconque des revendications précédentes, **caractérisée en ce que** la couche de support (11) comprend un module d'élasticité supérieur à la base souple (10).

9. Planche de plancher selon l'une quelconque des revendications précédentes, **caractérisée en ce que** la couche de support (11) est constituée de panneau de fibres à densité moyenne, panneau de fibres à densité élevée, contreplaqué, panneau de particules, produits ligneux, plastique ou de métal.

10. Planche de plancher selon l'une quelconque des revendications précédentes, **caractérisée en ce que** les côtés longs (25a, 25b) de la planche de plancher et les côtés courts (26a, 26b) de la planche de plancher sont pourvus respectivement de premier et second mécanismes de blocage intégrés à la planche de plancher (1), pour obtenir un joint mécanique, verticalement (D1) et horizontalement (D2), de la planche de plancher (1) avec des planches de plancher voisines, sensiblement identiques (1'), de telle sorte que des parties voisines supérieures (7, 7') des parties périphériques des côtés longs (25a, 25b) et des côtés courts (26a, 26b), respectivement, définissent ensemble des premier et second plans de joint (F1, F2) qui sont perpendiculaires au plan principal (P) des planches de plancher jointes, la base souple au niveau de la partie périphérique (26a) d'un côté court et de la partie périphérique (25a) d'un côté long s'étendant au-delà des plans de joint (F1, F2) respectifs.

11. Planche de plancher selon la revendication 8, **caractérisée en ce que** la base souple (10) au niveau de la partie périphérique (26a) du côté court s'étend davantage au-delà du premier plan de joint (F1) qu'au-delà du second plan de joint (F2) au niveau de la partie périphérique du côté long (25a).

12. Revêtement de plancher pour planchers souples, **caractérisé en ce qu'**il comprend des planches de plancher (1, 1') selon l'une quelconque des revendications précédentes.

13. Ensemble de pièces pour réaliser la planche de plancher selon la revendication 1, **caractérisé par**
une planche de plancher (1) comprenant un corps de planche de plancher, à joindre à une planche de plancher voisine, sensiblement identique (1'), de telle sorte que des parties voisines supérieures jointes (7, 7') des parties périphériques des planches de plancher (1, 1') définissent ensemble en plan de joint (F), qui est perpendiculaire au plan principal (P) des planches de plancher jointes,
une base souple (10), qui en termes de forme et de taille est adaptée pour être disposée en dessous du corps de la planche de plancher (1), de telle sorte que la base souple (10) s'étende au-delà dudit plan de joint (F), et
une couche de support (11), qui en termes de taille et de forme est adaptée pour être disposée entre ledit dessous du corps de la planche de plancher (1) et ladite base souple (10),
la planche de plancher (1) le long d'au moins deux bords parallèles étant pourvue d'un système de blocage intégré à la planche de plancher, pour obtenir un joint mécanique, verticalement (D1) et horizontalement (D2), de la planche de plancher (1) avec la planche de plancher voisine, sensiblement identique (1'),
dans lequel la base souple (10) est dimensionnée et adaptée pour s'étendre au-delà d'une partie la plus à l'extérieur (L2) du système de blocage de la planche de plancher (1), tel qu'observé depuis la plan de joint (F) et vers l'extérieur.

14. Ensemble de pièces selon la revendication 13, **caractérisé en ce que** la base souple (10) est pourvue de moyens de fixation à disposer en dessous de la planche de plancher (1).

15. Ensemble de pièces selon la revendication 13, **caractérisé en ce que** le dessous du corps de la planche de plancher (1) est pourvu de moyens de fixation pour disposer la base souple (10).

16. Ensemble de pièces selon l'une quelconque des revendications 13 à 15, **caractérisé en ce que** la couche de support (11) est pourvue de moyens de fixation à disposer entre ledit dessous du corps de la planche de plancher (1) et ladite base souple (10).

17. Ensemble de pièces selon l'une quelconque des revendications 13 à 16, **caractérisé en ce que** ladite base souple (10) comprend une première extension horizontale qui est sensiblement de longueur égale à un premier bord (25a, 25b) de la planche de plancher, et une seconde extension horizontale qui est de longueur inférieure de moitié d'un second bord (26a, 26b) de la planche de plancher (1).

18. Procédé pour réaliser le revêtement de plancher selon la revendication 12 en joignant une planche de plancher (1) comprenant un corps de planche de plancher à une planche de plancher voisine, sensiblement identique (1'), de telle sorte que les parties voisines supérieures jointes (7, 7') des parties périphériques sur les planches de plancher (1, 1') définissent ensemble un plan de joint (F), qui est perpendiculaire au plan principal (P) des planches de plancher jointes, **caractérisé par** la jonction des planches de plancher (1, 1'), de telle sorte que :

une base souple (10) et une couche de support (11), qui sont disposées en dessous du corps

de la planche de plancher (1), s'étendent au-delà dudit plan de joint (F), et
la base souple (10) s'étende au-delà d'une partie la plus à l'extérieur (L2) du système de blocage de la planche de plancher (1), tel qu'observé depuis le plan de joint (F) et vers l'extérieur,
ladite jonction comprenant une jonction mécanique, verticalement (D1) et horizontalement (D2), de la planche de plancher (1) avec la planche de plancher voisine, sensiblement identique (1').

19. Procédé de fabrication d'une planche de plancher (1) pour réaliser un plancher souple,
caractérisé par
la fourniture d'une planche de plancher, comprenant un corps de planche de plancher, laquelle planche de plancher est conçue pour être jointe à une planche de plancher voisine, sensiblement identique (1'), de telle sorte que des parties voisines supérieures (7, 7') des parties périphériques des planches de plancher (1, 1') définissent ensemble un plan de joint (F), qui est perpendiculaire au plan principal (P) des planches de plancher jointes,
la disposition en dessous du corps de la planche de plancher (1) d'une base souple (10), qui s'étend au-delà dudit plan de joint (F) et au-delà d'une partie la plus à l'extérieur (L2), observée depuis le plan de joint (F) et vers l'extérieur, du système de blocage de la planche de plancher (1), la disposition d'une couche de support (11) entre ledit dessous dudit corps de la planche de plancher (1) et ladite base souple (10), et
la disposition le long d'au moins deux bords parallèles de la planche de plancher d'un système de blocage intégré à la planche de plancher, pour obtenir un joint mécanique, verticalement (D1) et horizontalement (D2), de la planche de plancher (1) avec la planche de plancher voisine sensiblement identique (1').

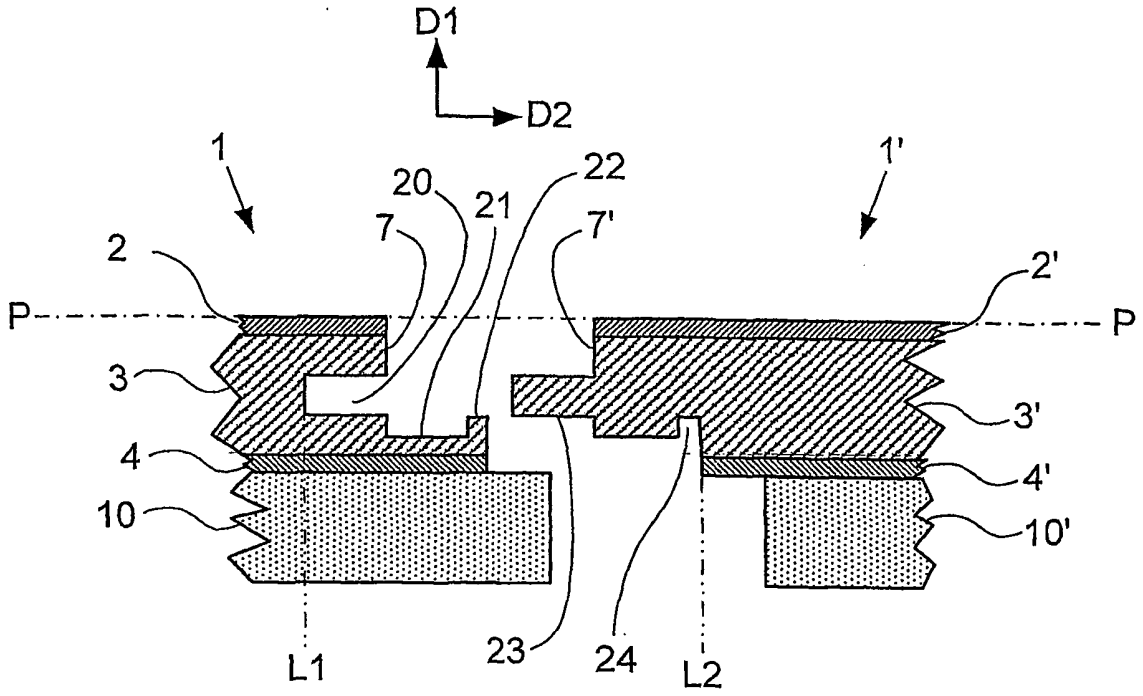

D1
D2
1
1'
20
22
21
7
7'
2
2'
P
P
3
3'
4
4'
10
10'
L1
23
24
L2

Fig 1a

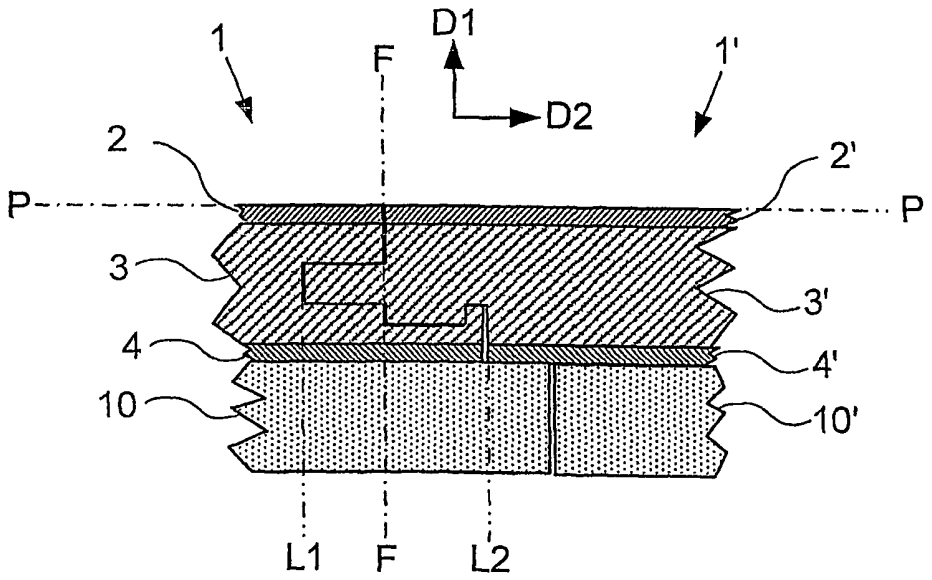

D1
D2
1
1'
F
2
2'
P
P
3
3'
4
4'
10
10'
L1
F
L2

Fig 1b

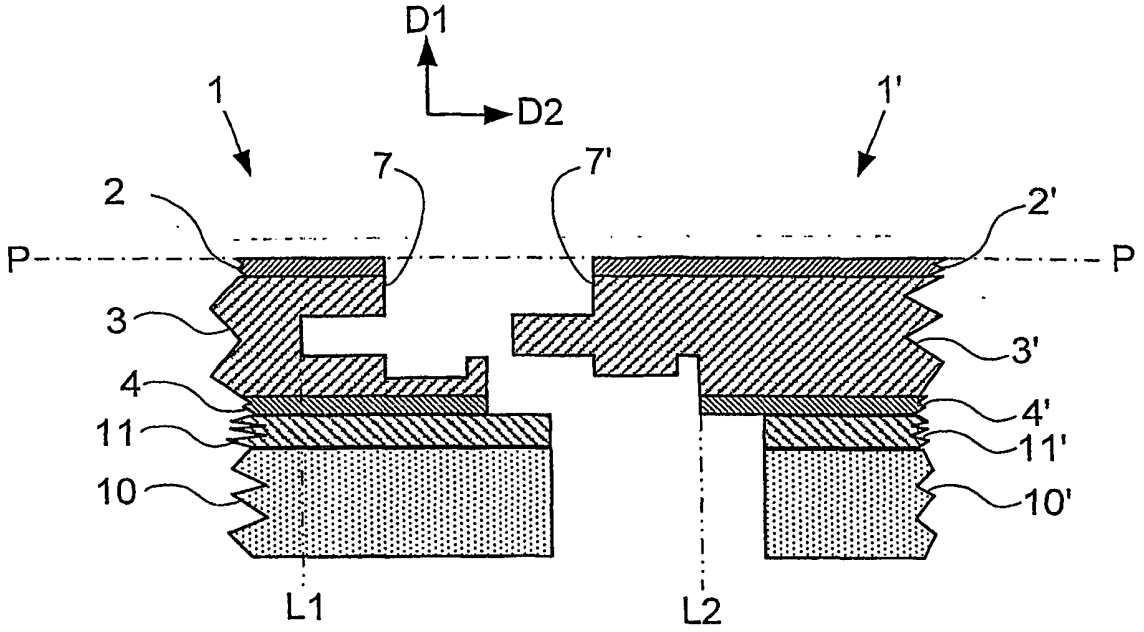

D1
D2
1
1'
7
7'
2
2'
P
P
3
3'
4
4'
11
11'
10
10'
L1
L2

Fig 2a

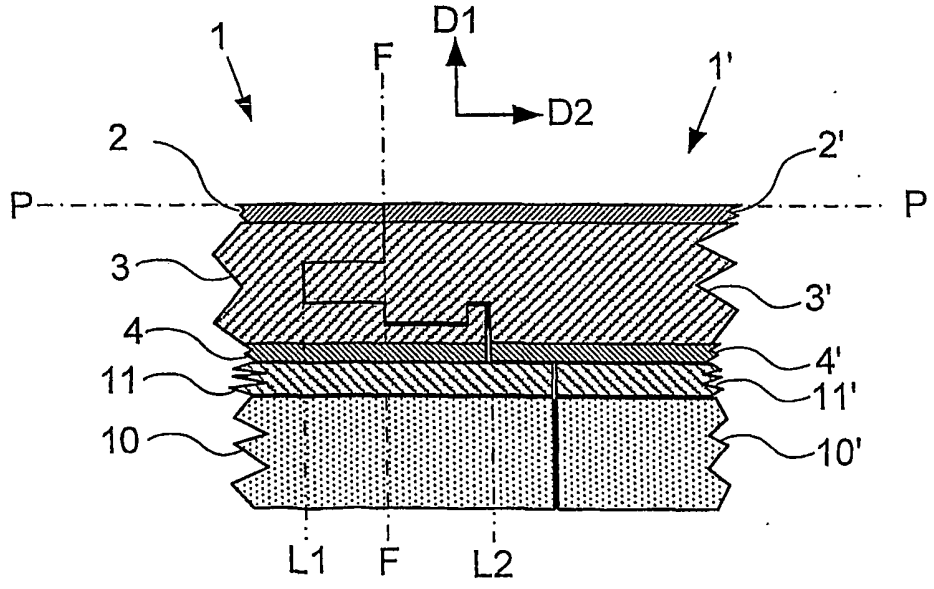

D1
D2
1
F
1'
2
2'
P
P
3
3'
4
4'
11
11'
10
10'
L1
F
L2

Fig 2b

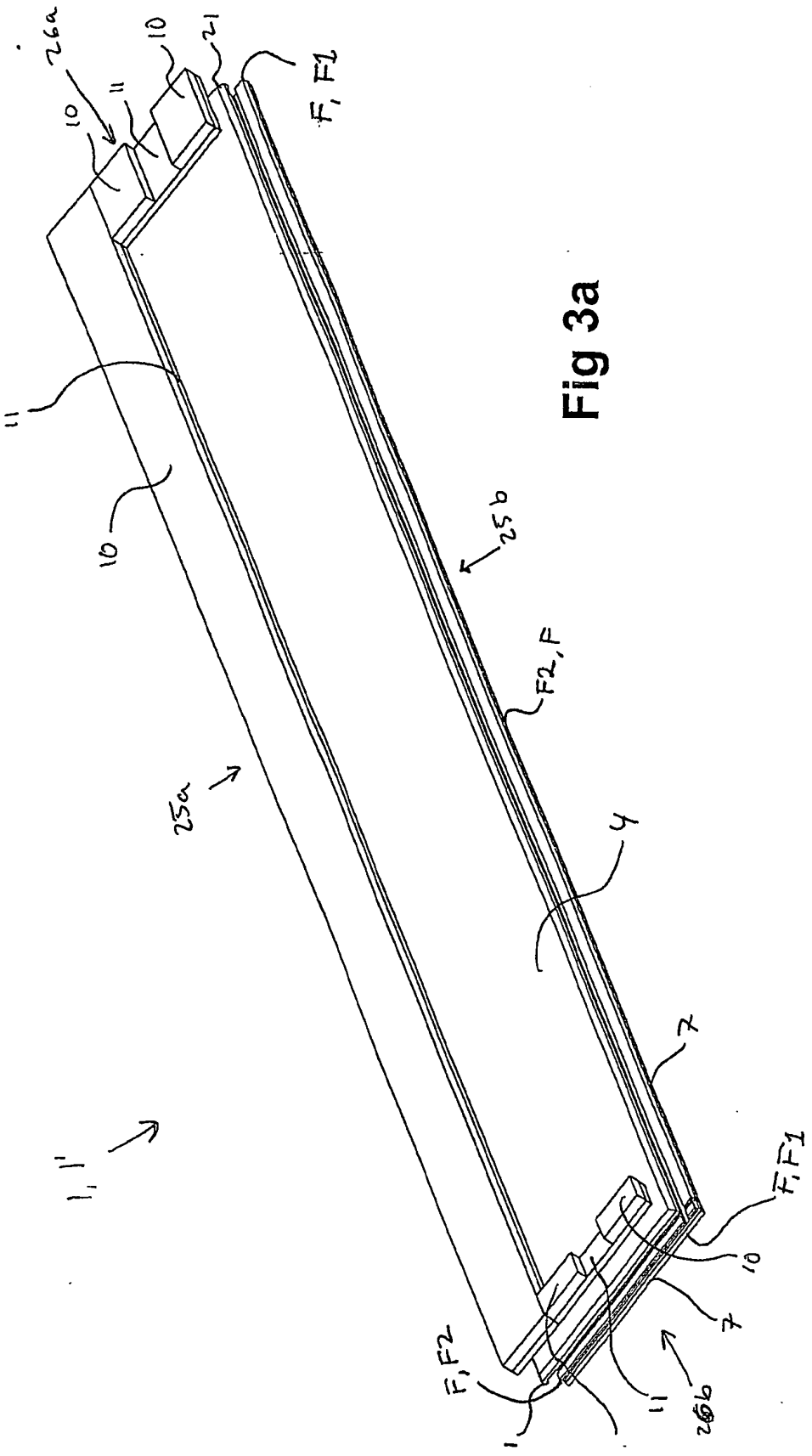


Fig 3a

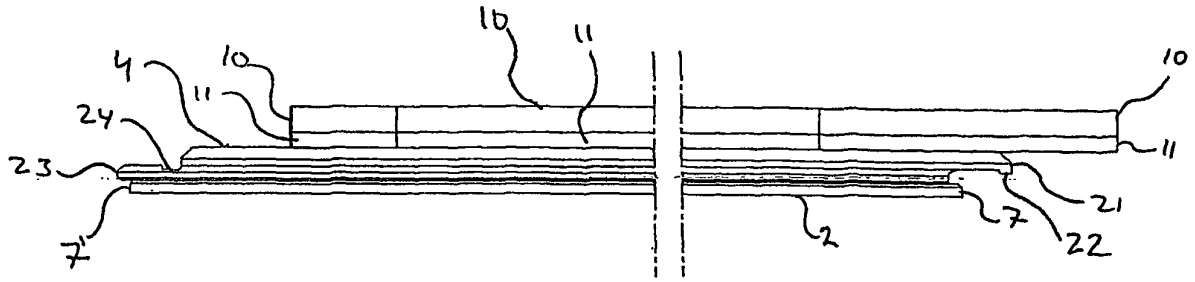

10
11
4
10
11
24
23
7
10
11
21
7
22
2

Fig 3b

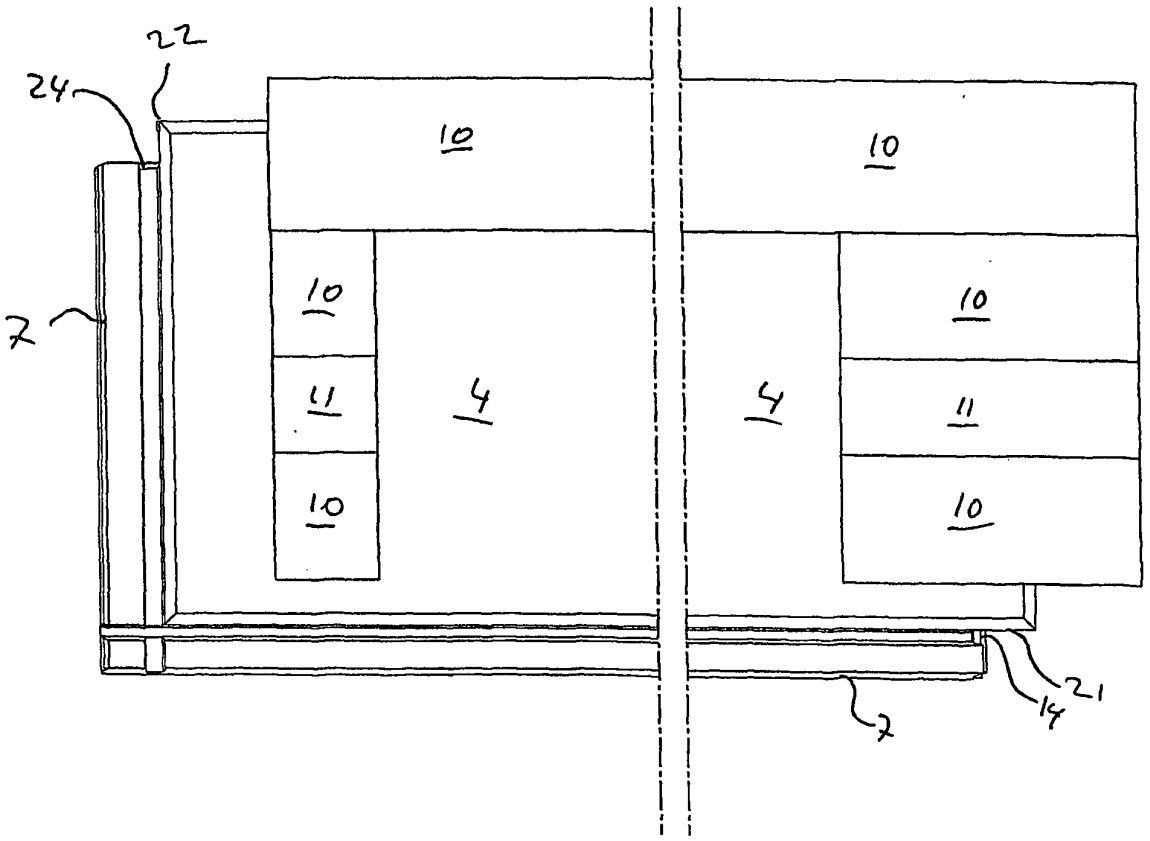

22
24
10
10
10
11
10
4
4
10
11
10
7
21
14
2

Fig 3c

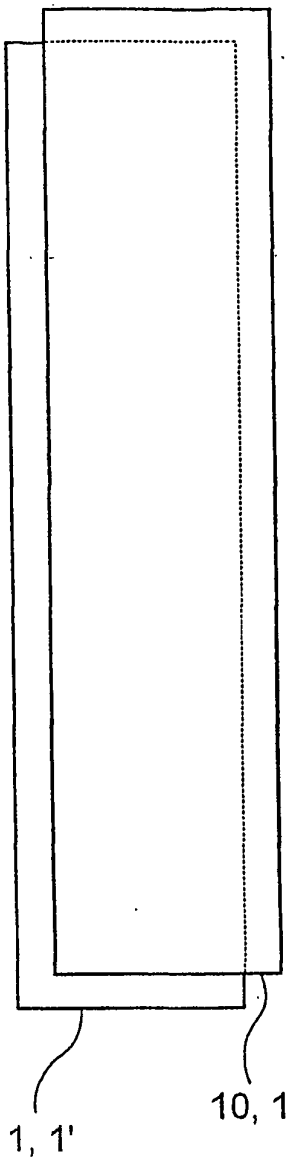


Fig 4a

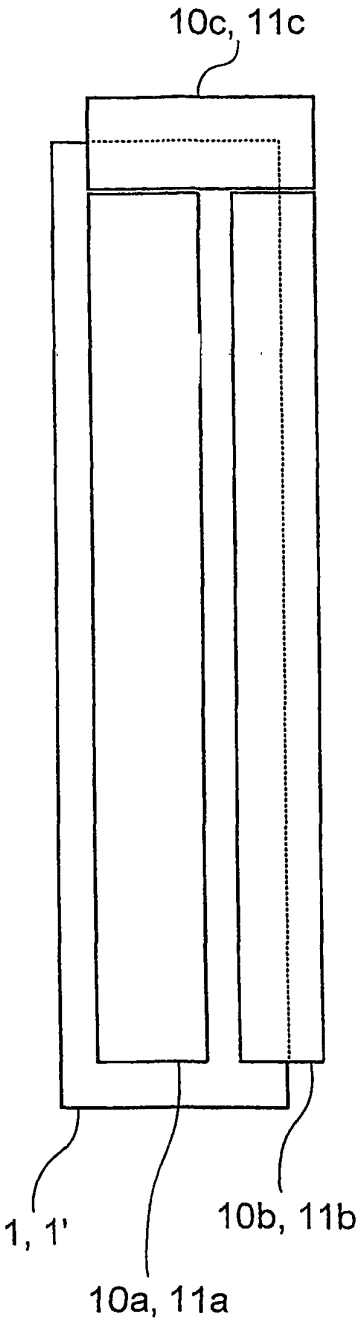


Fig 4b

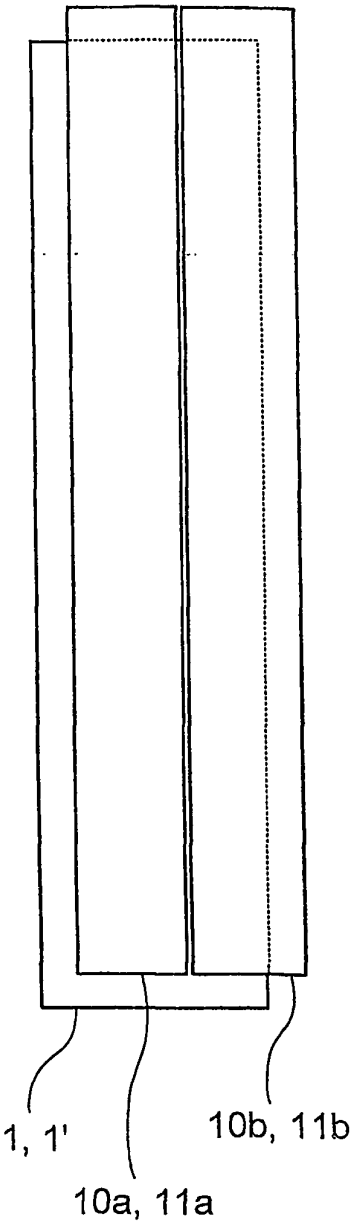


Fig 4c

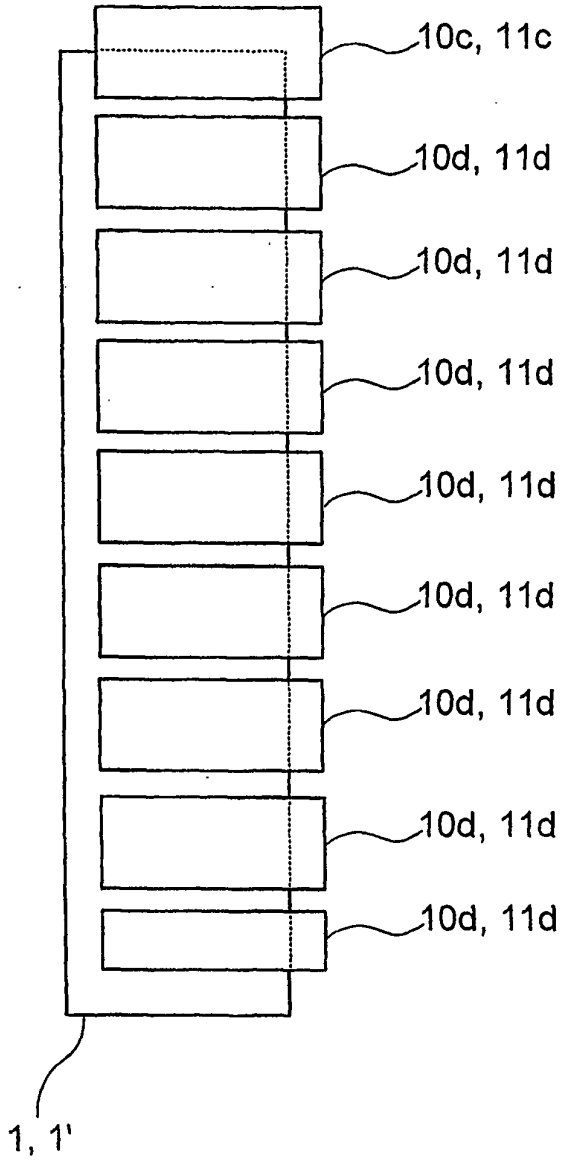

10c, 11c
10d, 11d
10d, 11d
10d, 11d
10d, 11d
10d, 11d
10d, 11d
10d, 11d
10d, 11d
1, 1'

Fig 5

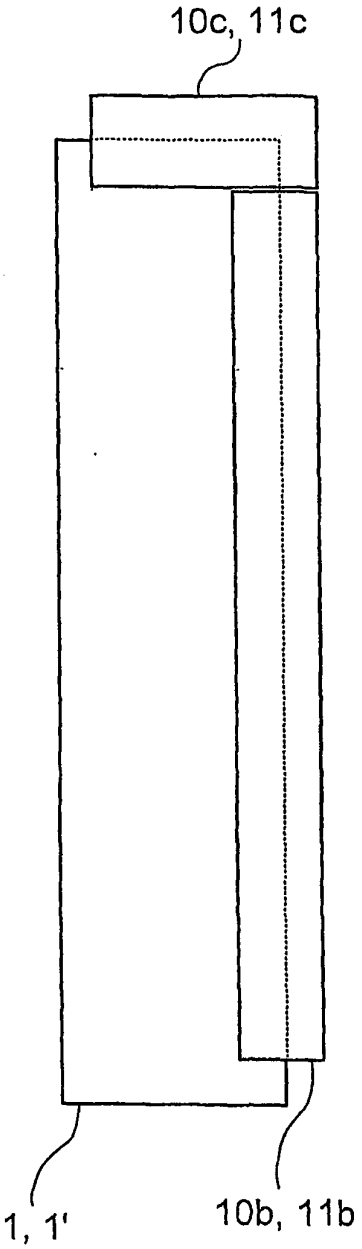

10c, 11c
1, 1'
10b, 11b

Fig 6