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(54) Arrangement for joining wood-based construction elements

Anordnung zur Verbindung von Konstruktionselementen auf Holzbasis

Agencement pour assemblage d'éléments de construction à base de bois

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Description

[0001] The present invention concerns an arrangement for joining wood-based construction elements according to the introduction of claim 1.

[0002] The manufacture of houses and other types of building takes place evermore often with the aid of construction elements, for several reasons. Not only is it possible for the assembly of the house to take place with fewer persons involved at the building site, but also is the manufacture of the construction elements carried out in a controlled environment, such as that in a factory. The construction elements comprise modules that are put together, forming in this manner a building. The module may be fully complete, with its outer surface coated with a weather-resistant surface layer, the inner surface wall-papered, and the interior of the module provided with insulation and conduits installed for, for example, the electrical installations. The module may be one complete wall, a wall with at least one of windows and doors, and floor structure modules.

[0003] Various methods and arrangements for the joining of construction elements are known. A joint between two construction elements consisting of solid wood for the completion of multi-storey buildings is described in the Swedish patent SE 515784, with applicant Martinsons Trä AB. The elements form not only load-bearing wall elements but also floor structure elements. The various parts are locked to each other with the aid of grooves and projections placed in the edges of the elements.

[0004] One disadvantage of this variant is that the motions of the modules are limited by the grooves in combination with the weight of the modules.

[0005] US2002/0100235 discloses a construction panel in the form of both horizontally and vertically oriented elements. The elements are attached to each other or to an existing building by a variety of attachment mechanisms such as nuts and bolts, screws or nails. The vertical building element is attached to the horizontal element by screws or nails. The horizontal element includes a part that fits into a pocket created between two vertical elements, and the part is held in place in the pocket with nails or screws.

[0006] DE19702860 discloses a wooden house assembled from prefabricated panels. A first wall panel is positioned on top of a second wall panel. Between the wall panels is inserted a beam shoe in which a beam from a floor element rests. The beam shoe is inserted in a gap between the wall panels. The wall panels have flat ends, and are held in place and in line by attaching the wall covering.

[0007] One aim of the present invention is to offer an arrangement for the assembly of wood-based floor construction elements that gives an exact fitting of the elements to each other.

[0008] A second aim is to offer an arrangement for the fitting of the construction elements against each other that gives at the same time locking in both the vertical

direction and the horizontal direction during the joining process.

[0009] An embodiment will be described below with reference to the attached drawings, of which:

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Figure 1 shows a construction element arranged horizontally with a lamellar board,

Figure 2 shows a detail of an I-beam,

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Figure 3 shows a detailed view of notches placed in the edge of the wall element,

Figure 4 shows the form of a sound-insulating material,

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Figure 5 shows a suspension bracket,

Figure 6 shows a cross-sectional drawing of a floor construction element before it is joined to a wall element,

Figure 7 shows a cross-sectional drawing of the floor construction element after it has been joined to two wall elements,

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Figure 7A shows a further variant of the joint, and

Figure 8 shows a cross-sectional drawing of the completed joint.

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[0010] Figure 1 shows, according to a preferred embodiment, a construction element 1 in the form of a wall element 1A, 1A.1 or a floor construction element 1B, manufactured from wooden material. The construction element 1, which for reasons of clarity will be described as standing in a vertical direction when it is a wall element 1A and laying in a horizontal direction when it is a floor construction element 1B, comprises a structural body having supporting battens of elongated I-beams 2, one of which is shown in more detail in Figure 2. It is an advantage if the webs 3 of the I-beams 2 are manufactured from wood-fibre sheet. The two edges of the web 3 are attached at the sides to a pressure flange 4 and a tensile flange 5 manufactured from wood. These may be, for example, solid wooden flanges, or they may also comprise LVL material or glulam. The term "pressure flange" 4 is used to denote the flange at which compression forces usually arise, and in an equivalent manner, the term "tensile flange" 5 to denote the flange at which tensile forces usually arise, in particular in the case of floor construction elements. The beams 2 are arranged essentially parallel to each other and at a certain separation, with their tensile flanges 5 attached to a first surface covering 6, for example a building sheet, adapted for an outdoor environment and advantageously provided with facade material such as panels or similar. It is appropriate that the separation between the beams 2 be adapted for insulation material of standard dimensions. It should be realised in this respect that the beams can be arranged with a greater or lesser distance between them, depending on the load that it is intended that the construction element 1 is to carry, and depending on whether the construction element 1 is to be insulated or not. It is an advantage that nogging pieces be arranged between the I-beams 2. It is an advantage if also a transverse I-beam

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be arranged at the end pieces 8a, 8b of the I-beams.

[0011] A plate 9 in the form of a lamellar board is attached to the pressure flanges 4 of the beams 2, which plate comprises a core 10 with fibres that are parallel to the longitudinal direction of the I-beams, and which core is covered by a surface layer 11 on at least the side that faces the I-beams 2. It is an advantage that the core 10 comprise planks 12 that are arranged with their long sides next to each other and parallel with the I-beams 2. The size of the plate 9 depends on the load to which the wall element 1A will be subject when the building has been built. When using the wall element for walls of buildings that will be subject for light vertical loads, the pressure flange side 4 of the beams 2 is only partially covered by the plate 9, since the load on the wall element 1A will be significantly lower than it will be in a multi-storey building. The pressure flange side 4 is thus covered by the plate 9 solely on that part that is adjacent to the ceiling, when viewed in a vertical direction. That part of the pressure flange side 4 of the I-beams 2 that is not covered by the plate 9 is, instead, arranged with a traditional type of building board. The arrangement of the sheet in this manner can be compared with a traditional truss beam. If the wall element 1A is to be used in a building with a heavy vertical load, such as a multi-storey building or an industrial building, then the pressure flange side 4 of the wall element 1A is fully covered by the plate 9.

[0012] For a floor construction element that is intended to be used horizontally, one of the flanges of the beam, the one known as the "tensile flange", may be provided with a means of absorbing tensile forces in the form of carbon fibre or steel tape. During use of the floor construction element 1B, the end parts of the I-beams 2 are covered by a plate 9 at the end walls 13 of the floor construction element 1B. The pressure flange side 4 is arranged with a traditional floor plate. If, however, the span is large and calculations have shown that the downwards curvature and the vibration properties require a stiffer design, then the complete pressure flange side is arranged with a plate 9 in the form of a lamellar board or LVL plate.

[0013] An arrangement is arranged at each end wall 13 in the form of a hook or bracket 14. This can be seen in Figure 5, and has been given the form of a sharply angled "S". The bracket 14 demonstrates a principal surface 15 having a width, and it demonstrates flange surfaces 16a, 16b at the edges of its two end pieces, which flange surfaces are angled perpendicularly away from the principal surface 15, one 16a of the flange surfaces being angled in one direction and the other 16b of the flange surfaces being angled in the other direction. The bracket 14 is screwed, or attached by another suitable method, to the floor construction element 1B with its principal surface 15 essentially parallel to the end wall 13 of the floor construction element. One 16a of the flange surfaces is positioned such that it is directed in towards the floor construction element 1B in contact with the end plate 9 of the element, whereby the other 16b flange sur-

face protrudes from the end 13 at the same level as, or somewhat under, the edge 18 of the plate 9. The free end of the second 16b flange surface demonstrates an end piece 19 essentially parallel with the principal surface 15 forming an inverted "U" with the principal surface 15.

[0014] The plate 9 and the I-beams 2 of the wall element 1A are arranged, according to Figures 6-8, such that one end part 20 of the plate 9 is located a distance inside one of the ends 8a of the I-beams 2, and the other end part 21 of the plate 9 is located a distance outside of the other of the ends 8b of the I-beams 2. This means that the plates 9 and the supporting battens 2 of a wall element 1A that is stacked on top of another wall element 1A.1 will be in contact with each other, but at different levels. When a floor construction element 1B and two wall elements 1A, 1A.1 are used, a joint is formed with the form of a tongue-and-groove joint 22 with a groove 23 and a tongue 24, where the groove 23 is formed between the plate of the floor construction element 1B and the plate of one of the wall elements 1A, and the tongue 24 is constituted by the plate 9 of the other wall element 1A.1.

[0015] The end parts 20, 21 of the plate 9 in another embodiment that is shown in Figure 7A are at a level with the transverse I-beam that is arranged at the ends 8a, 8b of the longitudinal I-beams, i.e. when the wall elements are stacked vertically on each other, one on top of the other, then the elements will make contact at their ends without a tongue-and-groove joint being formed.

[0016] The plate 9 of the wall element 1A is, according to Figure 3, provided with a notch 25 that is present at the edge 18 of the plate 9 that is directed towards the ceiling, when seen in the vertical direction. A sound-absorbing and vibration-absorbing material 17 is placed into the notch, which material covers all surfaces of the notch as seen in Figure 4. The material comprises in another embodiment of the invention a tape that is arranged in the notch 25. Corner pieces of the same material may be placed at the corners of the notch 25 if the design requires this. The notch 25 has been given an extent that corresponds to, or is somewhat greater than, the width of the bracket 14 of the floor construction element 1B. When the floor construction element 1B is to be installed, the bracket 14 is positioned at the position of the notch 25 in the plate 9. The inverted "U" form of the bracket is subsequently placed in contact with the sound-absorbing and vibration-absorbing material 17 in the notch 25. The extent of the notch 25 ensures that the bracket 14 is in contact with the notch and the material 17 at three of its edges, and thus prevents motion of the floor construction element 1B in the horizontal direction.

[0017] The arrangement functions as described below, with reference to Figures 6-8:

Laying the foundation is carried out in the normal manner through a pouring of the foundation of the building or through an assembly of the elements of the crawlspace. A sill is arranged at the beam at the

edge, after which the first level of wall elements 1A is attached in a conventional manner. When the first level of wall elements has been attached to the sill, the corners are joined in a manner that is already known, for example, with the aid of tracks and riders or with the aid of ready-made corner pieces. A tape of sound-absorbing and vibration-absorbing material 17 is placed in the notches 25, and a strip of sealing material is placed on the edge of the wall element 1A for sealing between the elements. End pieces of the same material are placed, as described above, also at the edges of the notches, if this is required. The floor construction elements 1 B which have been given a span that corresponds to the distance between the wall elements 1A, 1A.1 that face each other, and which have been provided at their end walls 13 with brackets 14 according to the invention, are subsequently lifted into place with the brackets located in the notches 25.

[0018] When all floor construction elements have been lifted into place, the deployment of the next level of wall elements begins, if the building is of multi-storey type. Each wall element is lifted up and positioned such that it is in contact with a previously placed wall element, after which the elements are lowered. In association with the lowering of the wall element 1A, the end part 21 is placed at the edge 19 of that part of the lamellar board 9 that is located outside of the ends 8b of the I-beam 2, making contact with the part of the existing wall element 1A.1 that comprises the notch with the bracket 14 of the floor construction element. Also the vertical motion of the floor construction element is thus locked in this manner. When all wall elements at this level have been deployed as specified by the description above, the corners are joined, after which the deployment of the floor construction elements of the next storey is repeated.

[0019] It is an advantage if the component parts of the coupling arrangements described above are manufactured from at least one of high-strength steel and stainless steel. It should, however, be realised that other types of material, such as composite materials, can be used.

[0020] It should furthermore be realised that the construction element described above may be of a different design, for example, one using supporting battens of solid wood. A further type of construction element comprises elements of solid wood, i.e. construction elements manufactured from, for example, glulam beams that are joined together to form a construction element.

[0021] The present invention is not limited to what has been described above and revealed in the drawings: it can be changed and modified in a number of different ways within the scope of the innovative concept specified by the attached claims.

Claims

1. An arrangement for joining two construction elements (1A, 1B) of wood-based material constructed from supporting battens (2) and at least one plate (9), of which one construction element (1A) is a component of a load-bearing wall formed by at least two such wall elements (1A, 1A.1), stacked on each other, one on top of the other, while the second construction element (1 B) is a component of an essentially horizontal floor construction that is supported by the said wall, **characterised in that** the arrangement comprises a bracket (14) that is arranged at an end wall (13) of the floor construction element (1 B), and which bracket has at one of its ends a hook-shaped part (16b, 19) from which the floor construction element is suspended resting on a first edge part at an end (20) of one (1A.1) of the wall elements, whereby the floor construction element is locked to prevent horizontal motion relative to the wall element through interaction between an end piece (19) that is a component of the hook-shaped part of the bracket and a notch (25) arranged in the wall element, which notch extends in a vertical direction into the wall element, and in which notch the end piece is arranged.
2. The arrangement according to claim 1, whereby the bracket (14) has a centrally positioned principal surface (15) at which it is attached to the end wall (13) of the floor construction element (1B), a flange surface (16b) that forms the hook-shaped part (16b, 19) of the bracket, together with the end piece (19) when protruding from the end wall, and in interaction with the said flange surface the floor construction element rests on the first edge part of an end (20) of one of the wall elements (1A.1).
3. The arrangement according to claim 2, whereby the bracket (14) has a flange surface (16a) at its second end, which flange surface is directed in such a manner relative to the central principal surface (15) that the bracket demonstrates the form of an "S" with sharp corners.
4. The arrangement according to claim 2, whereby the hook-shaped part (16b, 19) of the bracket (14) that is defined by the flange surface (16b), the free end piece (19) and a part of the principal surface (15) are so oriented relative to each other that they together form an inverted "U" with sharp corners.
5. The arrangement according to claim 3, whereby the flange surface (16a) at the second end of the bracket (14) is so positioned that it protrudes in and under a lower edge of the floor construction element (1 B).
6. The arrangement according to claim 1, whereby the

hook-shaped part (16b, 19) of the bracket (14) is held under pressure between the two abutting edges of the two wall elements (1A, 1A.1) that are stacked one on top of the other.

7. The arrangement according to claim 6, whereby the hook-shaped part (16b, 19) is compressed in a groove-and-tongue joint (22) with a groove (23) and a tongue (24), where the groove (23) is formed by the floor construction element (1 B) and one (1A.1) of the wall elements, and the tongue (24) is constituted by the plate (9) of the second (1A) wall element stacked onto the said first wall element.
8. The arrangement according to any one of claims 1-7, whereby the plate (9) of the second wall element (1A) comprises an edge (21) that is placed in contact with the first edge (20) of the first (1A.1) wall element when the wall elements are stacked on each other in order to lock the bracket (14), and in this way the motion of the floor construction element (1 B), in the vertical direction.
9. The arrangement according to claim 1, whereby the edge part (20) of one (1A.1) of the wall elements comprises a notch (25) in which the hook-shaped part (16b, 19) of the bracket (14) rests.
10. The arrangement according to any one of the preceding claims, whereby a sound-absorbing material (17) is arranged between the two wall elements (1A, 1A.1) that are stacked one on top of the other.
11. The arrangement according to claim 9, whereby a sound-absorbing and vibration-absorbing material is arranged in the notch (25) on which sound-absorbing material the hook-shaped part (16b, 19) of the bracket (14) rests.
12. The arrangement according to any one of claims 1-11, whereby the supporting battens (2) comprise I-beams with a web (3), at which a pressure flange (4) and a tensile flange (5) are arranged, and in that the plate (9) demonstrates a core (10) with its fibres parallel to the longitudinal direction of the supporting battens (2), which core is provided on one of its sides with a surface layer (11) in the form of wood fibre board.

Patentansprüche

1. Anordnung zum Verbinden von zwei Konstruktionselementen (1A, 1 B) aus einem Material auf Holzbasis, die aus Trägerlatten (2) und zumindest einer Platte (9) aufgebaut sind, wobei ein Konstruktionselement (1A) ein Bauteil einer lasttragenden Wand ist, die aus zumindest zwei derartigen Wandelementen

(1A, 1A.1) gebildet ist, die eines über das andere aufeinander aufgesetzt sind, während das zweite Konstruktionselement (1 B) ein Bauteil einer im Wesentlichen horizontalen Bodenkonstruktion ist, die von der Wand gelagert ist, **dadurch gekennzeichnet, dass** die Anordnung einen Befestigungswinkel (14) umfasst, der an einer Endwand (13) des Bodenkonstruktionselements (1 B) angeordnet ist, und welcher Befestigungswinkel an einem seiner Enden einen hakenförmigen Abschnitt (16b, 19) aufweist, von dem das Bodenkonstruktionselement abgehängt wird und dabei an einem ersten Kantenabschnitt an einem Ende (20) eines (1A.1) der Wandelemente aufliegt, wobei das Bodenkonstruktionselement durch die Wechselwirkung zwischen einem Endstück (19), bei dem es sich um einen Teil des hakenförmigen Abschnitts des Befestigungswinkels handelt, und einer Kerbe (25), die im Wandelement angeordnet ist, blockiert ist, um eine horizontale Bewegung in Bezug auf das Wandelement zu verhindern, welche Kerbe in einer vertikalen Richtung in das Wandelement hinein verläuft, und in welcher Kerbe das Endstück angeordnet ist.

2. Anordnung nach Anspruch 1, wobei der Befestigungswinkel (14) eine mittig positionierte Hauptfläche (15), an der er an der Endwand (13) des Bodenkonstruktionselements (1 B) angebracht ist, eine Flanschfläche (16b), die gemeinsam mit dem Endstück (19) von der Endwand vorstehend den hakenförmigen Abschnitt (16b, 19) ausbildet, aufweist, und in Wechselwirkung mit der Flanschfläche liegt das Bodenkonstruktionselement am ersten Kantenabschnitt eines Endes (20) eines der Wandelemente (1A.1) auf.
3. Anordnung nach Anspruch 2, wobei der Befestigungswinkel (14) eine Flanschfläche (16a) an seinem zweiten Ende aufweist, welche Flanschfläche auf eine solche Weise in Bezug auf die mittige Hauptfläche (15) ausgerichtet ist, dass der Befestigungswinkel die Form eines "S" mit spitzen Ecken aufweist.
4. Anordnung nach Anspruch 2, wobei der hakenförmige Abschnitt (16b, 19) des Befestigungswinkels (14), der durch die Flanschfläche (16b), das freie Endstück (19) und einen Abschnitt der Hauptfläche (15) definiert ist, derart in Bezug aufeinander ausgerichtet sind, dass sie gemeinsam die Form eines umgekehrten "U" mit spitzen Ecken ausbilden.
5. Anordnung nach Anspruch 3, wobei die Flanschfläche (16a) am zweiten Ende des Befestigungswinkels (14) derart positioniert ist, dass sie in und unter eine Unterkante des Bodenkonstruktionselements (1 B) vorsteht.
6. Anordnung nach Anspruch 1, wobei der hakenförmige

mige Abschnitt (16b, 19) des Befestigungswinkels (14) zwischen zwei anstoßenden Kanten zweier aufeinander gesetzter Wandelemente (1A, 1A.1) unter Druck gehalten ist.

7. Anordnung nach Anspruch 6, wobei der hakenförmige Abschnitt (16b, 19) in eine Nut-und-Feder-Verbindung (22) mit einer Nut (23) und einer Feder (24) gepresst ist, wobei die Nut (23) durch das Bodenkonstruktionselement (1 B) und eines der Wandelemente (1A.1) ausgebildet und die Feder (24) durch die Platte (9) des zweiten (1a) Wandelements gebildet ist, das auf dem ersten Wandelement aufgesetzt ist.
8. Anordnung nach einem der Ansprüche 1-7, wobei die Platte (9) des zweiten Wandelements (1A) eine Kante (21) umfasst, die in Kontakt zur ersten Kante (20) des ersten (1A.1) Wandelements angeordnet wird, wenn die Wandelemente aufeinander aufgesetzt werden, um den Befestigungswinkel (14) und auf diese Weise die Bewegung des Bodenkonstruktionselements (1 B) in vertikaler Richtung zu blockieren.
9. Anordnung nach Anspruch 1, wobei der Kantenabschnitt (20) eines (1A.1) der Wandelemente eine Kerbe (25) umfasst, in der der hakenförmige Abschnitt (16b, 19) des Befestigungswinkels (14) einliegt.
10. Anordnung nach einem der vorhergehenden Ansprüche, wobei ein schallabsorbierendes Material (17) zwischen den beiden aufeinander aufgesetzten Wandelementen (1A, 1A.1) angeordnet ist.
11. Anordnung nach Anspruch 9, wobei ein schallabsorbierendes und vibrationsabsorbierendes Material in der Kerbe (25) angeordnet ist, auf welchem schallabsorbierendes Material der hakenförmige Abschnitt (16b, 19) des Befestigungswinkels (14) aufliegt.
12. Anordnung nach einem der Ansprüche 1-11, wobei die Trägerlatten (2) I-Balken mit einem Steg (3) umfassen, an dem ein Druckflansch (4) und ein Zugflansch (5) angeordnet sind, und dass die Platte (9) einen Kern aufweist (10), dessen Fasern parallel zur Längsrichtung der Trägerlatten (2) verlaufen, welcher Kern an einer seiner Seiten mit einer Oberflächenschicht (11) in Form einer Holzfaserschicht bereitgestellt ist.

Revendications

1. Agencement pour l'assemblage de deux éléments de construction (1A, 1 B) en matériau à base de bois

construits à partir de lattes de support (2) et d'au moins une plaque (9), desquels un élément de construction (1A) est un composant d'un mur porteur formé d'au moins deux éléments de mur de ce type (1A, 1A.1), empilés les uns sur les autres, l'un au-dessus de l'autre, tandis que le second élément de construction (1 B) est un composant d'une construction de plancher essentiellement horizontale qui est soutenue par ledit mur, **caractérisé en ce que** l'agencement comprend un support (14) qui est disposé au niveau d'un mur d'extrémité (13) de l'élément de construction de plancher (1 B), et lequel support possède à l'une de ses extrémités une partie en forme de crochet (16b, 19) de laquelle est suspendu l'élément de construction de plancher, reposant sur une première partie de bord à une extrémité (20) d'un (1A.1) des éléments de mur, moyennant quoi l'élément de construction de plancher est bloqué pour empêcher un mouvement horizontal par rapport à l'élément de mur par une interaction entre une pièce d'extrémité (19) qui est un composant de la partie en forme de crochet du support et une encoche (25) disposée dans l'élément de mur, laquelle encoche s'étend dans une direction verticale vers l'intérieur de l'élément de mur, et encoche dans laquelle est disposée la pièce d'extrémité.

2. Agencement selon la revendication 1, selon lequel le support (14) possède une surface principale (15) positionnée au centre à laquelle on a fixé au mur d'extrémité (13) de l'élément de construction de plancher (1 B) une surface de rebord (16b) qui forme la partie en forme de crochet (16b, 19) du support, conjointement avec la pièce d'extrémité (19) lorsqu'elle dépasse du mur d'extrémité et, en interaction avec ladite surface de rebord, l'élément de construction de plancher repose sur la première partie de bord d'une extrémité (20) d'un des éléments de mur (1A.1).
3. Agencement selon la revendication 2, selon lequel le support (14) possède une surface de rebord (16a) au niveau de sa seconde extrémité, laquelle surface de rebord est dirigée d'une manière telle par rapport à la surface principale centrale (15) que le support présente la forme d'un « S » avec des coins prononcés.
4. Agencement selon la revendication 2, selon lequel la partie en forme de crochet (16b, 19) du support (14) qui est définie par la surface de rebord (16b), la pièce d'extrémité libre (19) et une partie de la surface principale (15) sont orientées les unes par rapport aux autres de telle sorte qu'elles forment ensemble un « U » retourné avec des coins prononcés.
5. Agencement selon la revendication 3, selon lequel la surface de rebord (16a) au niveau de la deuxième

extrémité du support (14) est positionnée de telle sorte qu'elle dépasse dans et sous un bord inférieur de l'élément de construction de plancher (1 B).

6. Agencement selon la revendication 1, selon lequel la partie en forme de crochet (16b, 19) du support (14) est maintenue sous pression entre les deux bords en butée des deux éléments de mur (1A, 1A.1) qui sont empilés l'un au-dessus de l'autre. 5
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7. Agencement selon la revendication 6, selon lequel la partie en forme de crochet (16b, 19) est comprimée dans un raccord à rainure et languette (22) avec une rainure (23) et une languette (24), où la rainure (23) est formée par l'élément de construction de plancher (1B) et un (1A.1) des éléments de mur, et la languette (24) est constituée par la plaque (9) du second (1A) élément de mur empilé sur ledit premier élément de mur. 15
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8. Agencement selon l'une quelconque des revendications 1 à 7, selon lequel la plaque (9) du second élément de mur (1A) comprend un bord (21) qui est placé en contact avec le premier bord (20) du premier (1A.1) élément de mur lorsque les éléments de mur sont empilés les uns sur les autres afin de bloquer le support (14) et, de cette façon, le mouvement de l'élément de construction de plancher (1 B), dans la direction verticale. 25
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9. Agencement selon la revendication 1, selon lequel la partie de bord (20) d'un (1A.1) des éléments de mur comprend une encoche (25) dans laquelle repose la partie en forme de crochet (16b, 19) du support (14). 35
10. Agencement selon l'une quelconque des revendications précédentes, selon lequel un matériau d'insonorisation (17) est disposé entre les deux éléments de mur (1A, 1A.1) qui sont empilés l'un au-dessus de l'autre. 40
11. Agencement selon la revendication 9, selon lequel un matériau d'insonorisation et d'absorption de vibrations est disposé dans l'encoche (25), matériau d'insonorisation sur lequel repose la partie en forme de crochet (16b, 19) du support (14). 45
12. Agencement selon l'une quelconque des revendications 1 à 11, selon lequel les lattes de support (2) comprennent des poutres en I avec une âme (3), au niveau desquelles sont disposés un rebord de pression (4) et un rebord de traction (5), et **caractérisé en ce que** la plaque (9) présente une âme (10) avec ses fibres parallèles à la direction longitudinale des lattes de support (2), laquelle âme comportant sur un de ses côtés une couche de surface (11) sous la forme d'un panneau de fibres de bois. 50
55

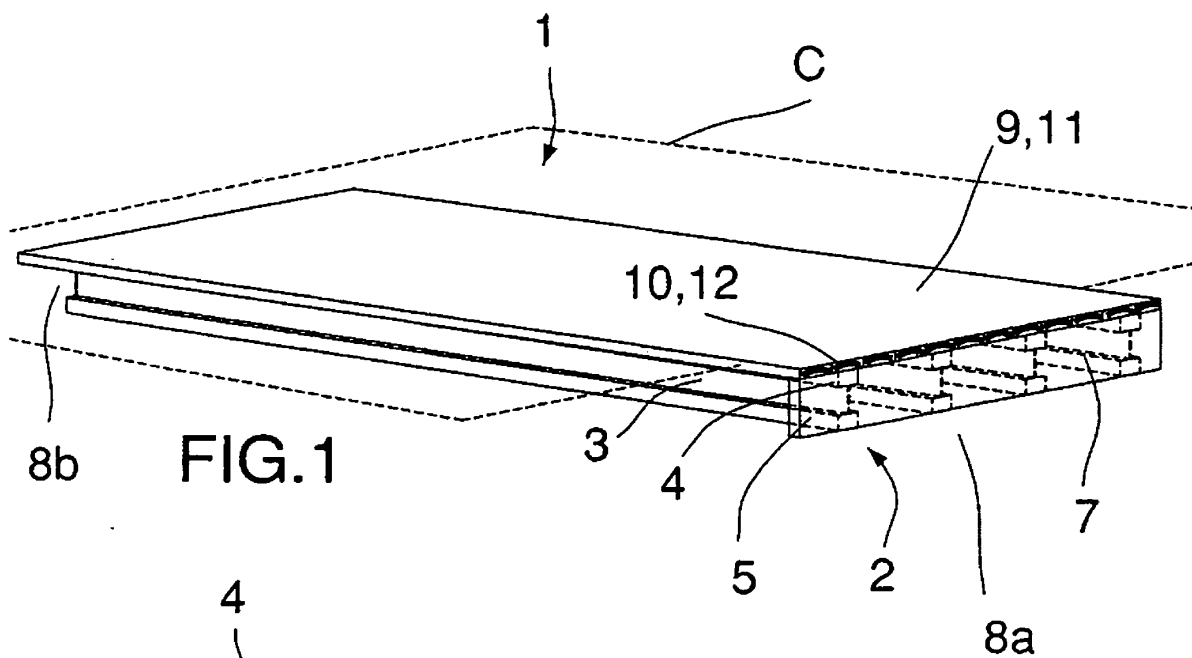


FIG.1

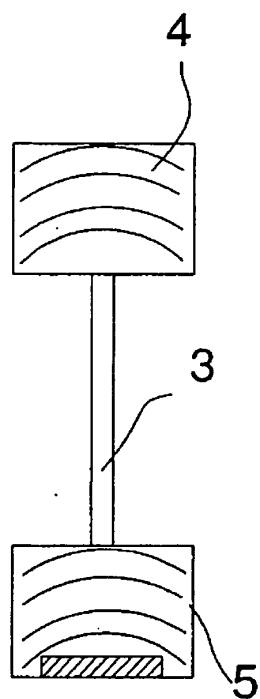


FIG.2

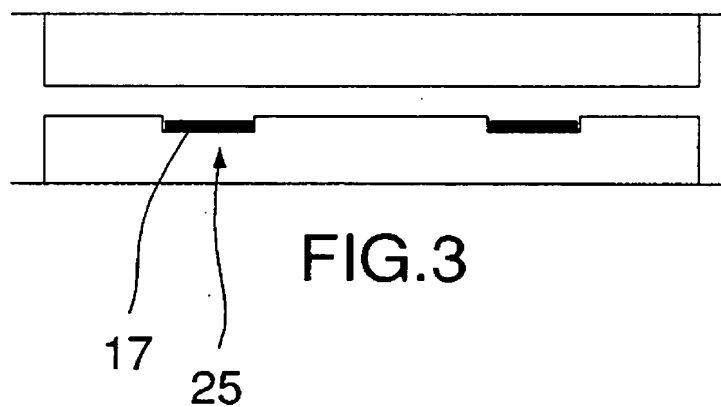


FIG.3

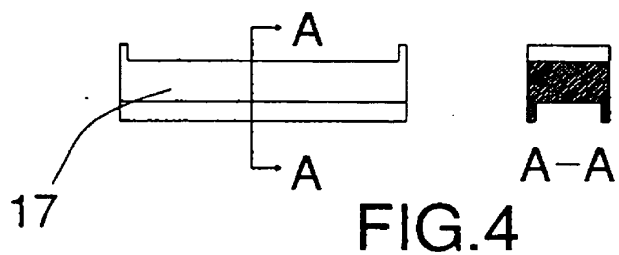


FIG.4

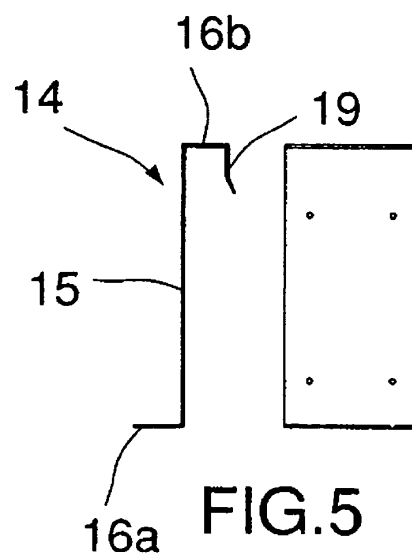


FIG.5

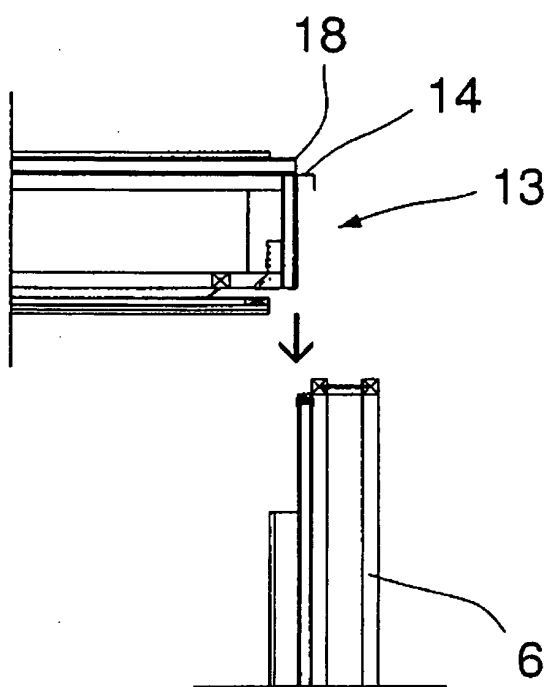


FIG. 6

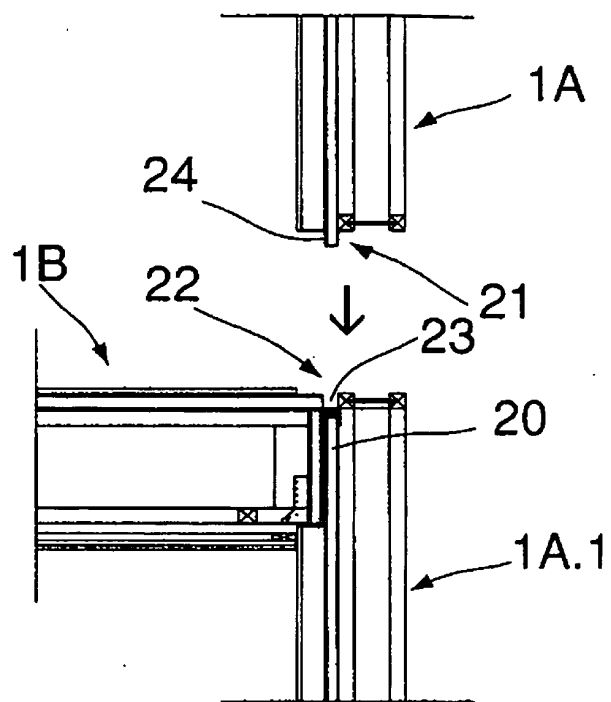


FIG. 7

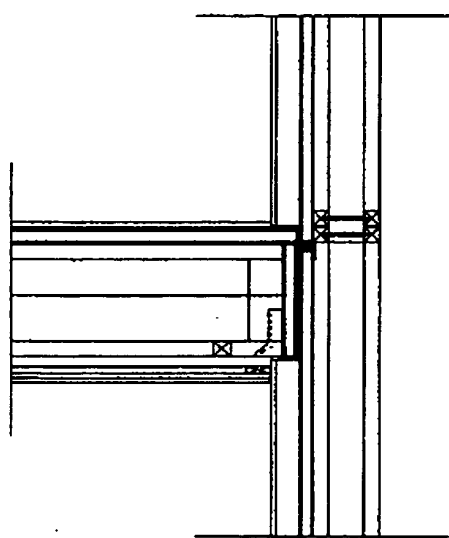


FIG. 8

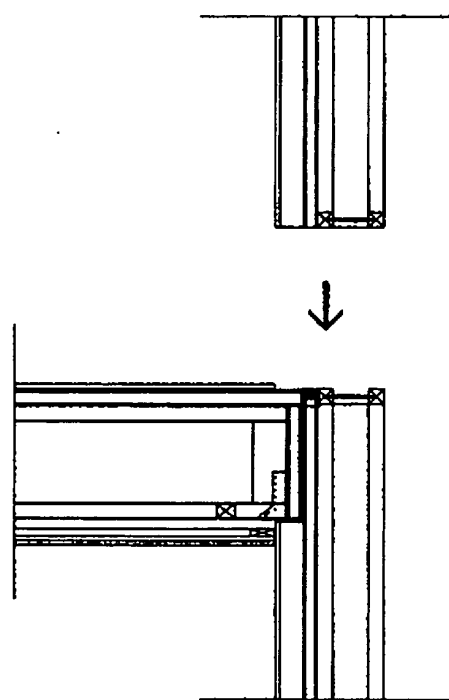


FIG. 7A

REFERENCES CITED IN THE DESCRIPTION

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