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(54) **Support for suspended floors and other modular structures**

(57) Support comprising a plate (1) suitable for being connected to at least one beam (2) for supporting a suspended floor (13) or another modular structure, wherein the beam (2) comprises at least two side walls (2a, 2b)

which are joined by at least one transversal wall (2c) and which can be inserted into a pair of substantially parallel slits (4) made in the plate (1), so as to connect an end of the beam (2) to the plate (1) with the transversal wall (2c) substantially parallel to the plate (1).

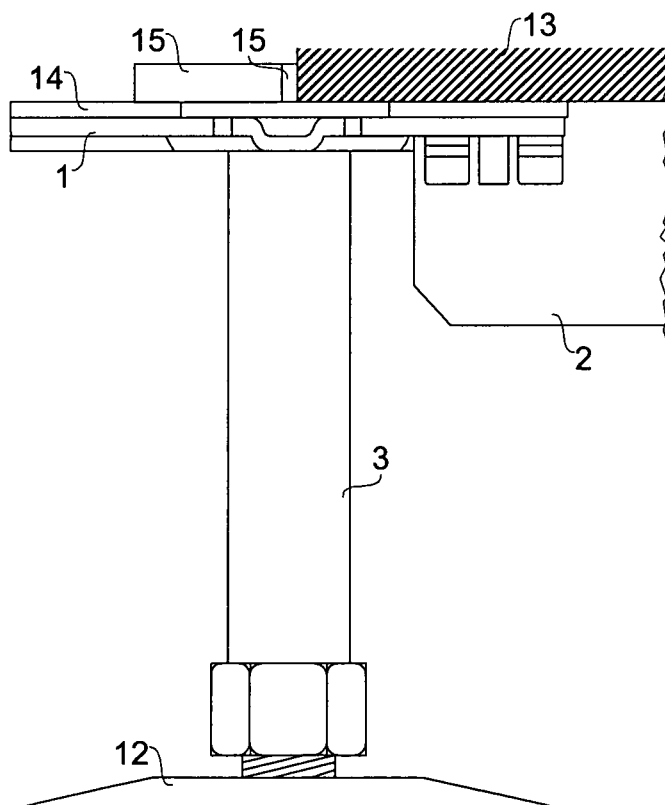


Fig. 7

Description

[0001] The present invention relates to a support for suspended floors, and in particular to a support comprising one or more connectors provided with a plate suitable for connecting one or more beams for supporting a suspended floor or another modular structure.

[0002] Known supports for suspended floor comprise beams which are fixed to the plates of connectors arranged at the corners of the slabs making up the suspended floor. Since the supports must stand heavy weights, the fixing of the beams to the plates is carried out by means of bolts, with a consequent increase of the mounting time and complexity.

[0003] It is therefore an object of the present invention to provide a support free from said disadvantage. Said object is achieved with a support, whose main features are disclosed in the first claim and other features are disclosed in the subsequent claims.

[0004] Thanks to the particular joint system for fixing the beams to the plate, the support according to the present invention allows to avoid the use of bolts, so as to reduce mounting times, costs and complexity, however without renouncing a high sturdiness and the possibility of a fixing by means of bolts.

[0005] A particular spacer can be arranged between the plate of the support and the slabs of the suspended floor for improving their mutual coupling.

[0006] Further advantages and features of the support according to the present invention will become evident to those skilled in the art from the following detailed and nonlimiting description of an embodiment thereof with reference to the attached drawings, wherein:

- figure 1 shows a top view of the connector of the support;
- figure 2 shows a side view of the connector of figure 1;
- figure 3 shows a partial side view of a beam of the support;
- figure 4 shows a front view of the beam of figure 3;
- figure 5 shows a view sectioned along plane V-V of figure 3;
- figure 6 shows a top view of the support; and
- figure 7 shows a side view of the support arranged under a suspended floor.

[0007] Referring to figures 1 to 5, it is seen that the support according to the present invention comprises in a known way one or more connectors provided with a plate 1 suitable for being connected to at least one beam 2 for supporting a suspended floor. An upright 3 is fixed under plate 1 for being coupled with a supporting base.

[0008] According to the invention, beam 2 comprises two side walls 2a, 2b which are joined by at least one transversal wall 2c and which can be inserted into a pair of substantially parallel slits 4 made in plate 1, so as to connect an end of beam 2 to plate 1 with the transversal

wall 2c substantially parallel to plate 1. One or both the ends of one or both side walls 2a, 2b of beam 2 are provided with first protrusions 5 suitable for penetrating into notches 6 made along slits 4, in particular along their outer edge, so as to prevent the sliding of beam 2 along slits 4. One or two second protrusions 7 are arranged beside the first protrusions 5 and have at least one inclined wall which forms a wedge suitable for pulling the transversal wall 2c of beam 2 toward plate 1. Plate 1 is preferably bent and/or perforated for forming a stiffening bulge 8 and/or a hole 9 arranged between slits 4. Other holes 10 are made in plate 1 outside the zone comprised between the two slits 4. Plate 1 has a circular form and comprises four pairs of slits 4 arranged perpendicularly two by two, so that up to four beams 2 can be connected to plate 1, thereby forming a cross.

[0009] Referring to figures 6 and 7, it is seen that protrusions 5, 7 lock beam 2 when the latter is inserted in slits 4 of plate 1. The transversal wall 2c of beam 2 is provided with at least one opening 11 which results aligned to hole 9 made between slits 4 when beam 2 is connected to plate 1, so that beam 2 can be bolted to plate 1. A supporting base 12 can be screwed under upright 3, while a corner of a slab 13 of a suspended floor rests on plate 1. A spacer 14 shaped for receiving the ends of beams 2 can be arranged between plate 1 and slab 13. For this purpose, spacer 14 has a thickness substantially equal to the thickness of the transversal wall 2c of beam 2 and is provided with one or more vertical projections 15 suitable for containing the edges of slab 13. Slab 13 can be fixed to plate 1 by means of screws which cross holes 10 and corresponding holes made in spacer 14.

[0010] Possible variations and/or additions may be made by those skilled in the art to the hereinabove disclosed and illustrated embodiment of the invention while remaining within the scope of the following claims.

Claims

1. Support comprising a plate (1) suitable for being connected to at least one beam (2) for supporting a suspended floor (13) or another modular structure, **characterized in that** the beam (2) comprises at least two side walls (2a, 2b) which are joined by at least one transversal wall (2c) and which can be inserted into a pair of substantially parallel slits (4) made in the plate (1), so as to connect an end of the beam (2) to the plate (1) with the transversal wall (2c) substantially parallel to the plate (1).
2. Support according to the previous claim, **characterized in that** one or both ends of one or both side walls (2a, 2b) of the beam (2) are provided with first protrusions (5) suitable for penetrating into notches (6) made along the slits (4) of the plate (1), so as to prevent the sliding of the beam (2) along the slits (4).

3. Support according to the previous claim, **characterized in that** said notches (6) are made along the outer edge of the slits (4).
4. Support according to claim 2 or 3, **characterized in that** one or two second protrusions (7) are arranged beside the first protrusions (5). 5
5. Support according to the previous claim, **characterized in that** said second protrusions (7) have an inclined wall which forms a wedge suitable for pulling the transversal wall (2c) of the beam (2) toward the plate (1). 10
6. Support according to one of the previous claims, **characterized in that** the plate (1) is bent for forming at least one bulge (8) arranged between the slits (4). 15
7. Support according to one of the previous claims, **characterized in that** the plate (1) is provided with at least one hole (9) arranged between the slits (4). 20
8. Support according to the previous claim, **characterized in that** the transversal wall (2c) of the beam (2) is provided with at least one opening (11) which results aligned to the hole (9) made between the slits (4) when the beam (2) is connected to the plate (1). 25
9. Support according to one of the previous claims, **characterized in that** an upright (3) is fixed under the plate (1) for being coupled with a supporting base (12). 30
10. Support according to one of the previous claims, **characterized in that** the plate (1) comprises four pairs of slits (4) arranged perpendicularly two by two, so that up to four beams (2) can be connected to the plate (1). 35
11. Support according to one of the previous claims, **characterized in that** a spacer (14) shaped for receiving the ends of the beams (2) is arranged on the plate (1). 40
12. Support according to the previous claim, **characterized in that** the spacer (14) has a thickness substantially equal to the thickness of the transversal wall (2c) of the beam (2). 45
13. Support according to claim 11 or 12, **characterized in that** the spacer (14) is provided with one or more vertical projections (15) suitable for containing the edges of a slab (13) of a suspended floor. 50

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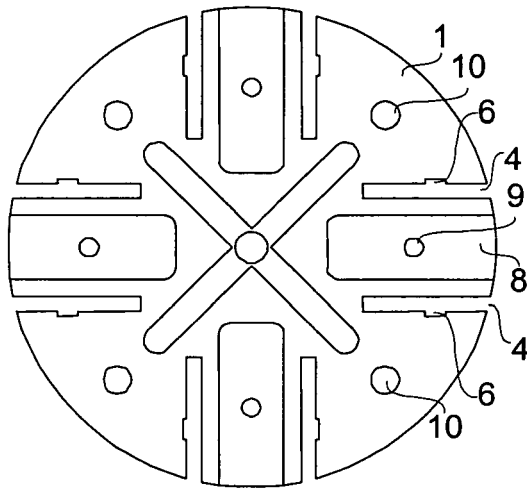


Fig. 1

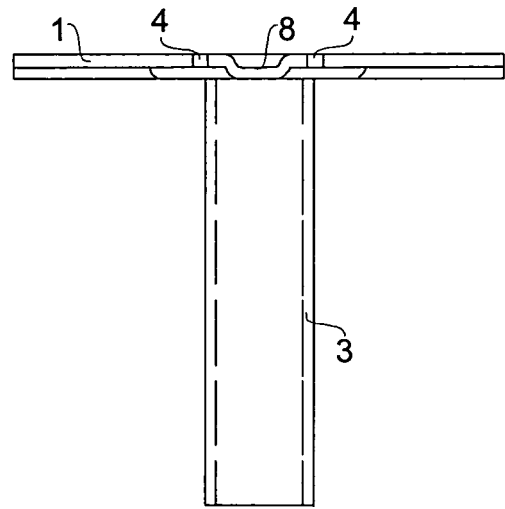


Fig. 2

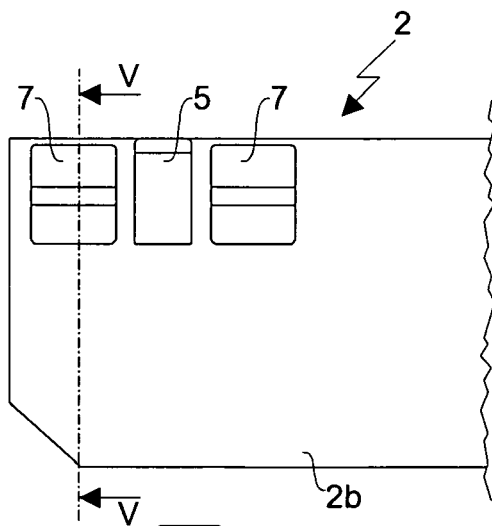


Fig. 3

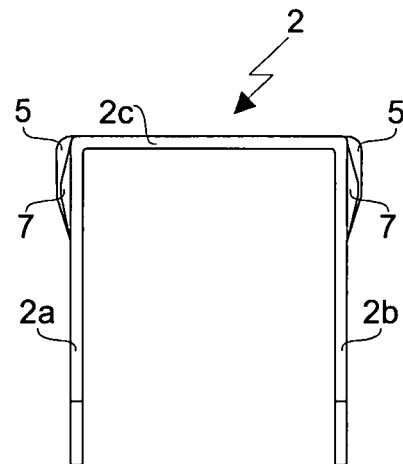


Fig. 4

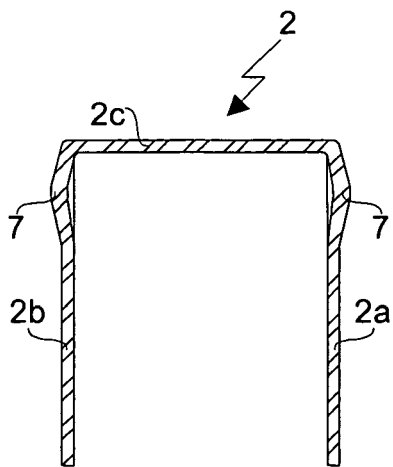


Fig. 5

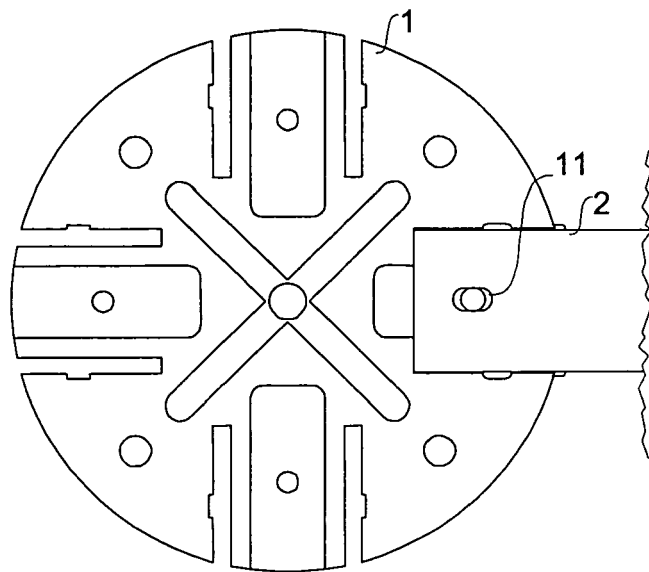


Fig. 6

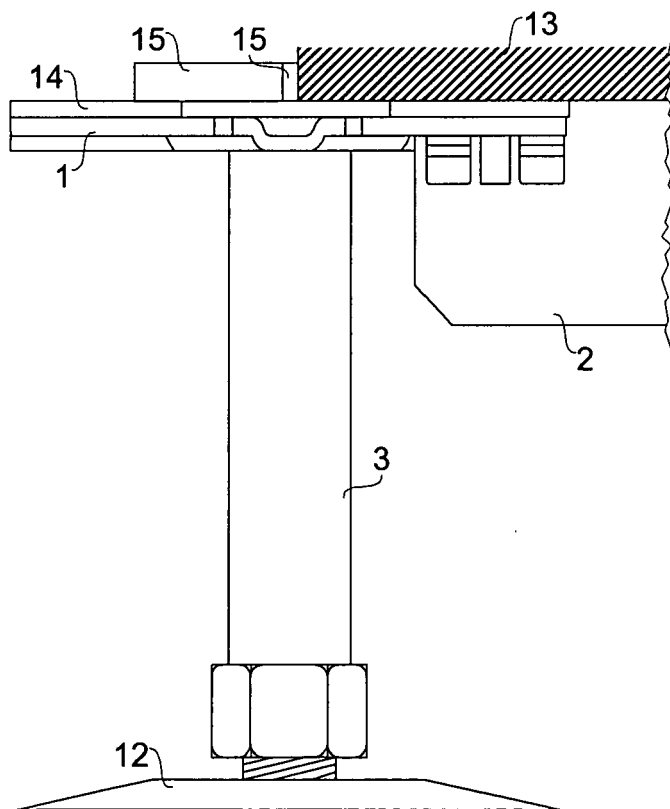


Fig. 7



European Patent
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Application Number
EP 06 42 5646

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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 20 March 2007	Examiner Severens, Gert
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 06 42 5646

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