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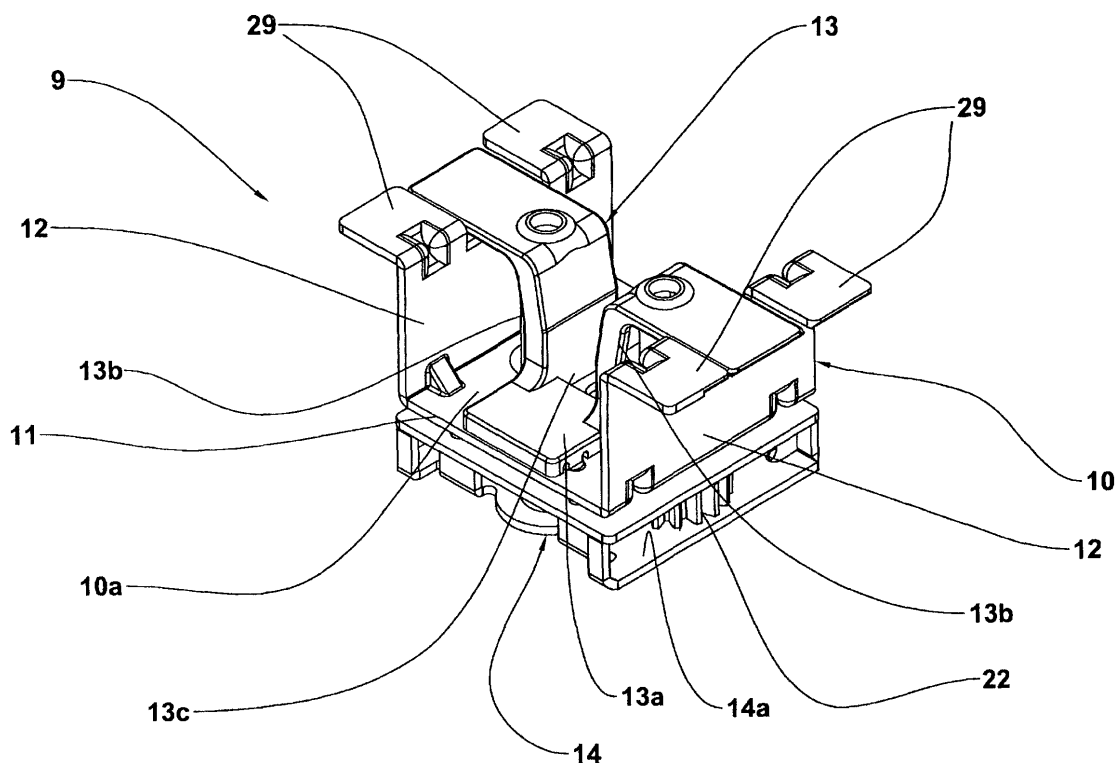
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(54) **Support device for partitions and partition comprising such a device**

(57) A support device (9) for partitions (1) to carry out height adjustment of the partition associated with such a device (9). The device (9) comprises a base (14) adapted to abut on the ground or floor and a support element (10) with which a lower portion (B) of the partition (1) is associated. A movement means (17) set to

raise the support element (10) is disposed between the base (14) and the support element (10). This movement means (17) consists of two raising elements (18) to be simultaneously operated at the support element (10) and disposed in such a manner that the partition (1) is placed on the support element (10) between the raising elements (18).

FIG.2



Description

[0001] The present invention relates to a support device for partitions and to a partition comprising such a device.

[0002] It is known that in the building field and in that of interior decorations partitions are often used that are intended to separate interior environments such as bedrooms, halls, lounges, office premises, cooking corners or open spaces, from each other.

[0003] Generally these partitions are used for the purpose of dividing rooms into different areas to differentiate utilisation of same or isolate them from each other from an acoustic or visual point of view. In particular, partitions are used in office premises to divide big environments where arrangement of spaces is to be varied depending on fortuitous working requirements. In addition, in many cases, taking into account the presently widespread fashions in the furnishing field, these partitions are used as an object to create modern interior architectures. This is due to the valuable aesthetic result that said partitions can reach since they are often made of glass or materials of a particularly agreeable visual appearance.

[0004] In detail, partitions can be made of one or more glass sheets or panels of wood or plastic material having the desired sizes for the intended purposes. These sheets are held in an appropriate framework extending along the peripheral extension of each sheet.

[0005] A partition may also consist of several portions that can be modulated with respect to each other. In this case the framework consists of vertical posts mutually associated by means of horizontal crosspieces so as to form substantially rectangular sectors. Panels made of glass or other material are fastened within these sectors.

[0006] In the known art, partitions rest on the ground and are adjusted in height by means of craftmade skirting boards or supports holding the partition in position. In more detail, known supports, commonly known as "feet", consist of a base secured to the ground and an upper portion having an engagement element adapted to be associated with a lower portion of the partition. The engagement element may consist, in the case of a partition made of sheets of glass, of a surface having a groove in which the sheet base is housed.

[0007] Alternatively, these supports are disposed at the base of the vertical posts.

[0008] The feet, as well as the craftmade skirting boards can be of different sizes and heights based on the characteristics of the ground or floor on which they rest. In fact, if the partition is to be disposed on an uneven surface, supports of different height are arranged to keep the partition base as much as possible horizontal. This leads to a great disadvantage due to the fact that a great amount of supports of different sizes are to be arranged which will result in waste of money and in bulkiness of the supports themselves.

[0009] In addition, a further disadvantage is due to the inconveniences and difficulties encountered by the operator who must prepare the partition. In fact, first the distance between the floor and the partition base is to be measured in order to be able to subsequently provide a support of appropriate size. This step leads to slowing-down in the installing operations, and to lack of precision in measurements due to the fact that they are done in a rough and sometimes wrong way.

[0010] Also known are adjustable support feet by which the distance between the foot base and the support element to be engaged with the lower portion of the partition can be varied. This type of adjustable support is equipped with a screw rigidly secured to the foot base and passing through a hole formed in the support element of the foot itself. In this way, by rotating the base relative to the support element, the foot can alter its sizes, and the distance between the base and the support element can be adjusted based on the distance between the floor and the partition base.

[0011] However, this type of adjustable support has an important drawback too.

[0012] Said drawback consists in that the support must be adjusted before being positioned under the partition. This gives rise to slowing down when the partitions are installed. In addition, a great accuracy by the operator is required during this step since the foot must be adjusted in an exact manner to be subsequently positioned to the partition base.

[0013] Under this situation the technical task underlying the present invention is to conceive a support device for partitions capable of obviating the mentioned drawbacks.

[0014] In particular, it is an aim of the present invention to conceive a support device for partitions capable of being adjusted in height even when it is supporting the partition. In detail, it is an object of the present invention to provide a support device for partitions capable of raising or lowering the partition to dispose it to the desired position, irrespective of the features of the ground or floor on which it weighs.

[0015] It is a further aim of the present invention to provide a support for partitions that can be easily adjusted from every side of the partition. In particular it is an aim of the invention to provide appropriate adjusting elements that are easily accessible to the operator.

[0016] Description of a preferred but not exclusive embodiment of a support device for partitions in accordance with the invention is now given with the aid of the accompanying drawings, in which:

- Fig. 1 is a diagrammatic perspective view of a partition equipped with a plurality of support devices in accordance with the present invention;
- Fig. 2 is a perspective view of the concerned support device with some parts removed for a better view of others;
- Figs. 3a, 3b and 3c show a sequence of respective

mounting steps in perspective of the support device shown in Fig. 2, in which some elements have been removed for a better view of others;

- Fig. 4 is an elevation view partly in section of the support device shown in Fig. 2, in a first operating position;
- Fig. 5 is an elevation view partly in section of the support device shown in Fig. 2, in a second operating position.

[0017] With reference to the drawings, a partition has been generally identified by reference numeral 1.

[0018] Partition 1 consists of a support grid structure 2 substantially extending in one plane and formed of a plurality of beams 3, made of an aluminium-alloy for example, to which panels 4 consisting of sheets of glass 4a and/or covering panels 4b made of wood or other appropriate material are fastened, depending on the function to be performed by partition 1.

[0019] In particular, the support structure 2 comprises a first plurality of beams 3a and a second plurality of beams 3b joined to the beams 3 of the first plurality 3a by junction members 5.

[0020] According to the embodiment shown in Fig. 1, the beams 3 of the second plurality 3b, or crosspieces, are disposed horizontally between the beams 3 of the first plurality 3a, referred to as posts, which extend vertically without interruption over the whole height of partition 1.

[0021] Each crosspiece 3b is connected, at its opposite ends 6a, 6b, to the two posts 3a disposed in side by side relationship therewith.

[0022] The support structure 2 further comprises an upper load-bearing beam 7 connecting the ends 8 of several posts 3a, and support devices 9 resting on the ground, to ensure the necessary steadiness to the whole partition 1.

[0023] Each support device 9 comprises a support element 10 of a substantially plate-like conformation, in which two faces are defined, i.e. an upper face 10a which is set to support a lower portion B of partition 1, and a lower face 10b opposite to the upper face 10a. It is to be noted that, for the sake of clarity, in Figs. 4 and 5 the lower portion B is shown in the form of a sheet of glass 4a; this form is illustrated by way of example only and not for purposes of limitation.

[0024] Alternatively, according to an embodiment not shown, the lower portion B may be the lower end part of a post 3a.

[0025] Advantageously, as viewed from the drawings, the support element 10 has a substantially U-shaped conformation seen in cross-section, in which a horizontal portion 11 and two side walls 12 parallel to each other and extending upwardly from the upper face 10a are defined. In particular, the horizontal portion 11 has a substantially rectangular peripheral extension and the two side walls 12 extend at respective opposite sides of said horizontal portion 11.

[0026] Secured to the upper face 10a of the support element 10 is an engagement element 13 of the lower portion B of partition 1 disposed at a central area of said upper face 10a. As shown by way of non-limiting example in the drawings, the engagement element 13 can have a U-shaped extension wherein there is defined a horizontal element 13a in abutment against the upper surface 10a of the support element 10, and two vertical elements 13b extending in planes parallel to the two side walls 12. The horizontal element 13a and the two vertical elements 13b define a housing space 13c for the lower portion B.

[0027] The horizontal element 13a has a substantially rectangular peripheral extension, with the respective major sides disposed parallel to the planar extension of the side walls 12.

[0028] The support device 9 further comprises a base 14 of a substantially plate-like conformation having an upper surface 14a facing the lower face 10b of the support element 10 and a lower surface 14b opposite to the upper surface and adapted to abut on the ground.

[0029] Advantageously, as shown in Figs. 4 and 5, base 14 may have a U-shaped extension, seen in cross-section, like the conformation of the support element 10. Under this situation, base 14 has a horizontal portion 15 parallel to the horizontal portion 11 of the support element 10 and two parallel side walls 16, each of which is placed close to a side wall of the support element 10. In detail, the support element 10 appears to be containable within base 14 and the side walls 12 of the support element 10 are internal to, and face the side walls 16 of base 14.

[0030] A movement means 17 for the support element 10 is disposed on the upper surface of base 14.

[0031] The movement means 17 comprises at least two raising elements 18 to be simultaneously operated to vertically move the support element 10 between a first position at which the lower face 10b is close to the upper surface 14a of base 14 (see Fig. 4), and a second position at which the lower face 14b is spaced apart from said upper surface 10a (see Fig. 5).

[0032] The raising elements 18 are in engagement with the upper surface 14a of the base and are operatively associated with the support element 10. In detail, each raising element 18 is disposed between a side wall 12 of the support element 10 and the engagement element 13. Under this situation, it will be understood that the engagement element 13 is disposed between two said raising elements 18.

[0033] In more detail, each raising element 18 comprises a worm screw 19 inserted in a corresponding threaded hole 20 formed in said support element 10. As above specified, each threaded hole 20 is placed between the side wall 12 of the support element 10 and the engagement element 13.

[0034] Each screw 19 comprises an upper end 19a emerging from the upper face 10a of the support element 10, and a lower end 19b. The lower ends 19b of

screws 19 are rotatably engaged on the upper surface 14a of base 14. In this way screws 19 can be rotated about respective longitudinal axes 19c which are parallel and substantially vertical.

[0035] The movement means 17 further comprises a movement-transmitting member 21 operatively associated with screws 19 to transmit the rotatory motion between one screw 19 and the other. In particular, the movement-transmitting member 21 comprises two primary cogwheels 22, each of which is in engagement in coaxial relationship with the lower end 19b of a respective one of said screws 19. The primary cogwheels 22 are both in mesh with a secondary cogwheel 23 interposed between said primary cogwheels 22. As better shown in Fig. 3a, the primary 22 and secondary 23 cogwheels abut on the upper surface 14a of base 14 and the longitudinal axes 19c of screws 19 are parallel to the rotation axis of the secondary cogwheel 23. In this way, the rotatory motion of one of the two screws 19 is transmitted to the other screw 19 by means of cogwheels 22 and 23 that are in mesh with each other.

[0036] The rotatory motion of screws 19 is imposed from the outside by means of an adjusting element 24 formed at the upper end 19a of each screw 19. In more detail, the adjusting element 24 may consist of an adjusting seating 24a formed in an upper surface 25 of each screw 19 the extension of which is transverse to the longitudinal axis 19c (see Fig. 3a in detail). The shape of this seating 24a advantageously matches that of an outer adjusting member insertable in the adjusting seating 24a, such as a screwdriver or a setscrew wrench for example, to rotate one of the two screws 19.

[0037] In a second alternative embodiment not shown in the drawings, the adjusting element 24 may consist of a projection extending from said upper face 10a of the support element 10, in such a manner that it is manually accessible to an external operator to rotate at least one of the screws 19.

[0038] Preferably, as better shown in Figs. 4 and 5, the support element 10 is associated with at least one covering element 26 set to cover the support element 10 itself. In particular, two covering elements 26 are disposed, each of which is close to a relative side wall 12 of the support element 10.

[0039] Each covering element 26 has an L-shaped transverse profile in which there is defined a horizontal portion 27 parallel to the horizontal portion 11 of the support element 10, and a vertical portion 28 extending transversely of said horizontal portion 27 and parallel to the respective side wall 12.

[0040] At a junction corner 28a defined between the horizontal portion 27 and vertical portion 28, an undercut 27a is present which is designed to receive a horizontal projection 29 extending transversely of each side wall 12 of the support element 10.

[0041] Under this situation, each vertical portion 28 of the covering element 26 is parallel to a corresponding side wall 16 of base 14, and externally in abutment ther-

eon.

[0042] The support device 10 therefore can be associated with the partition 1 and subsequently adjusted in height. In fact, by acting from the outside on screws 19, the support element 10 holding the lower portion B of the partition 1 in position by means of the engagement means 13, is lifted/lowered. Consequently, the distance between base 14 and support element 10 can be easily adapted even when the support device 9 has already been associated with the partition.

[0043] The invention achieves important advantages.

[0044] It should be pointed out first of all that the support device 9 can become adapted to any type of requirement (distance between partition and floor), due exactly to the possibility of adjusting its height. In addition, since the support device can be adjusted also when it is already supporting partition 1, the installation operations of the partition are speeded up. In fact, in this case the operations for measuring the distance between the floor and the partition that in the known art were carried out before mounting the partition itself for the purpose of selecting supports of appropriate sizes, are no longer necessary.

[0045] It should be also appreciated that the adjusting operations are now very quick and easy. In fact, the partition can be raised/lowered by merely acting on one of the screws 19 that, in the absence of the covering element 26, are readily accessible.

[0046] In addition, the presence of the two screws 19 on the opposite sides from partition 1 allows the adjusting operations to be carried out from both faces of the partition 1 itself. In fact, since the movement-transmitting member 21 connects the two screws 19 to move them simultaneously, the operator can act on either screw 19 without distinction obtaining the same effect.

[0047] Furthermore, adjustment of the support devices 9 at the same time ensures a correct alignment of the covering elements 26 because the latter are directly fastened to the support elements 10.

[0048] It should be also recognized that the covering element 26 not only gives the device an appreciable aesthetic appearance because it covers all mechanical members of the support device 9 itself, but it can also be easily separated from the support element 10 for carrying out the adjusting operations.

[0049] A further advantage due to the presence of screws 19 disposed at the sides of partition 1 is that the partition itself is given a greater steadiness because the partition weight is borne by two side support points (screws 19).

Claims

1. A support device for partitions comprising:
 - a support element (10) having an upper face (10a) associated with a lower portion (B) of the

partition (1) and a lower face (10b) opposite to said upper face (10a); and

- a base (14) having a lower surface (14b) adapted to abut on the ground or floor and an upper surface (14a) opposite to the lower surface (14b) and facing the lower face (10b) of the support element (10);
- movement means (17) for the support element (10) disposed on the upper surface (14a) of the base (14) and designed to be operatively engaged at the lower face (10b) of the support element (10);

characterized in that said movement means (17) comprises at least two raising elements (18) to be simultaneously operated to vertically move the support element (10) between a first position at which the lower face (10b) is close to the upper surface (14a) of the base (14), and a second position at which the lower face (10b) is spaced apart from said upper surface (14a).

2. A support device as claimed in claim 1, **characterized in that** it further comprises an engagement element (13) for the lower portion (B) of said partition (1), said engagement element (13) being associated with the upper face (10a) of the support element (10) and interposed between said raising elements (18).
3. A support device as claimed in claim 2, **characterized in that** said engagement element (13) comprises a horizontal element (13a) in abutment on the upper face (10a) of the support element (10) and having a substantially rectangular peripheral extension; said raising elements (18) being disposed at the major sides of the peripheral extension of the horizontal element (13a).
4. A support device as claimed in anyone of claims 1 to 3, **characterized in that** each raising element (18) comprises a worm screw (19) inserted in a corresponding threaded hole (20) formed in said support element (10).
5. A support device as claimed in claim 4, **characterized in that** said worm screws (19) comprise respective lower ends (19b) rotatably in engagement with the upper surface (14a) of the base (14), said screws (19) being susceptible of rotation about respective longitudinal axes that are parallel and substantially vertical.
6. A support device as claimed in claim 5, **characterized in that** said movement means (17) further comprises a movement-transmitting member (21) operatively associated with said screws (19) to transmit the rotatory motion between one screw

(19) and the other.

7. A support device as claimed in claim 6, **characterized in that** said movement-transmitting member (21) comprises: two primary cogwheels (22), each of which is in engagement in coaxial relationship with a respective screw (19) at the lower end (19b) of the screw (19) itself; and a secondary cogwheel (21) in mesh with the primary cogwheels (22).
8. A device as claimed in the preceding claim, **characterized in that** said primary cogwheels (22) and secondary cogwheel (23) are in abutment on the upper surface (14a) of the base (14), said secondary cogwheel (23) having a rotation axis parallel to the longitudinal axes of the screws (19).
9. A device as claimed in claim 5, **characterized in that** each screw (19) comprises an upper end (19a) opposite to said lower end (19b) and emerging from the respective threaded hole (20); said upper end (19a) of each screw (19) having an adjusting element (24) for the screw itself (19) to make it rotate.
10. A device as claimed in claim 9, **characterized in that** said adjusting element (24) of each screw (19) comprises an adjusting seating (24a) formed on an upper surface (25) thereof which has an extension transverse to the longitudinal axis of the screw (19); the shape of said adjusting seating (24a) matching that of an appropriate external adjusting member to give the screw (19) the rotatory motion.
11. A device as claimed in claim 9, **characterized in that** said adjusting element (24) for each screw (19) comprises an adjusting projection extending from said upper face (10a) of the support element (10), which adjusting projection can be rotated by an external operator to give the screw (19) the rotatory motion.
12. A device as claimed in anyone of claims 3 to 11, **characterized in that** it further comprises at least two covering elements (26) having a substantially L-shaped profile seen in cross section, each covering element (26) being associable with one side of said support element (10).
13. A device as claimed in claim 12, **characterized in that** each covering element (26) comprises: a horizontal portion (27) parallel to and facing the upper face (10a) of the support element (10); and a vertical portion (28) extending from the horizontal portion (27) to the base (14), said vertical portion (28) having a planar extension parallel to the major sides of the peripheral extension of said horizontal element (13a).

14. A partition comprising:

- a first plurality (3a) of beams (3);
- a second plurality (3b) of beams (3); each of the beams (3) of said second plurality (3b) being joined to at least one beam (3) of the first plurality (3a), to form a support structure (2);
- a plurality of panels (4) in engagement with said support structure (2);

characterized in that it comprises a plurality of support devices (9) manufactured in accordance with anyone of claims 1 to 13.

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FIG.1

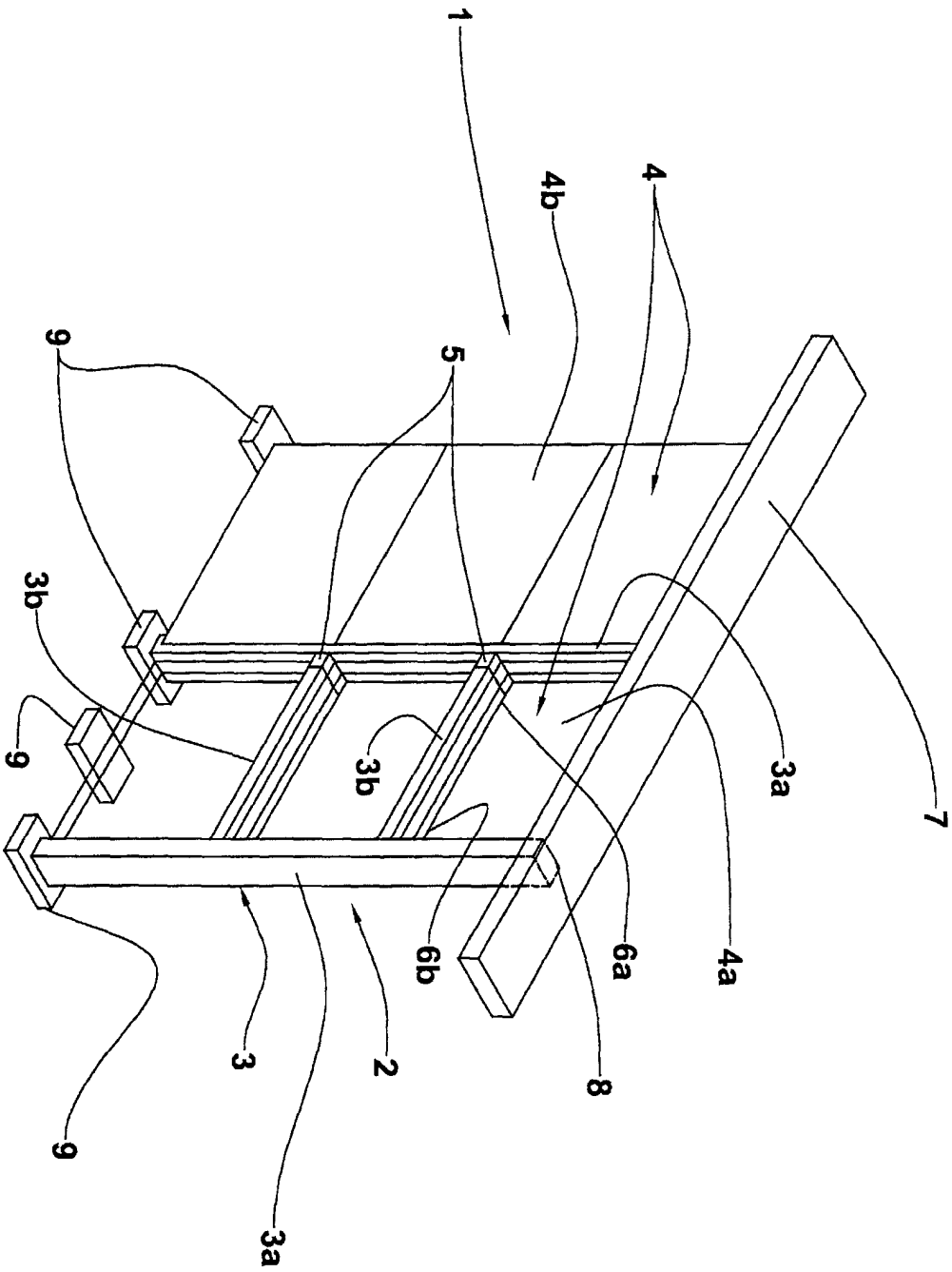


FIG.2

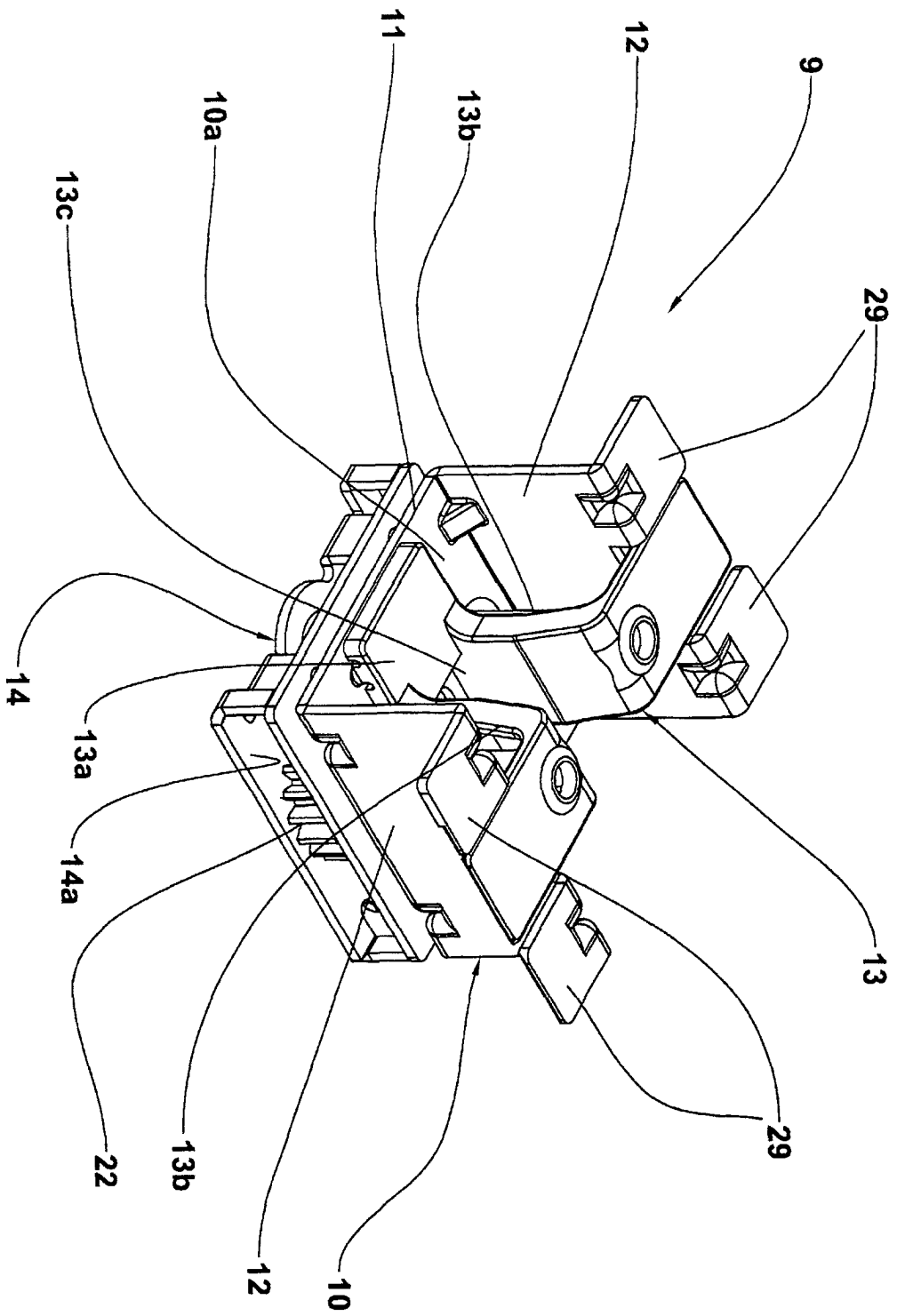


FIG.3c

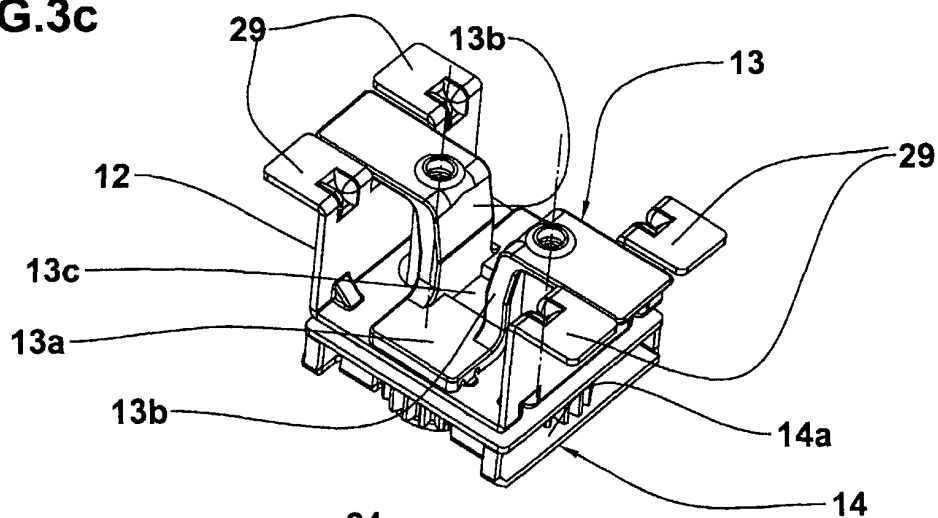


FIG.3b

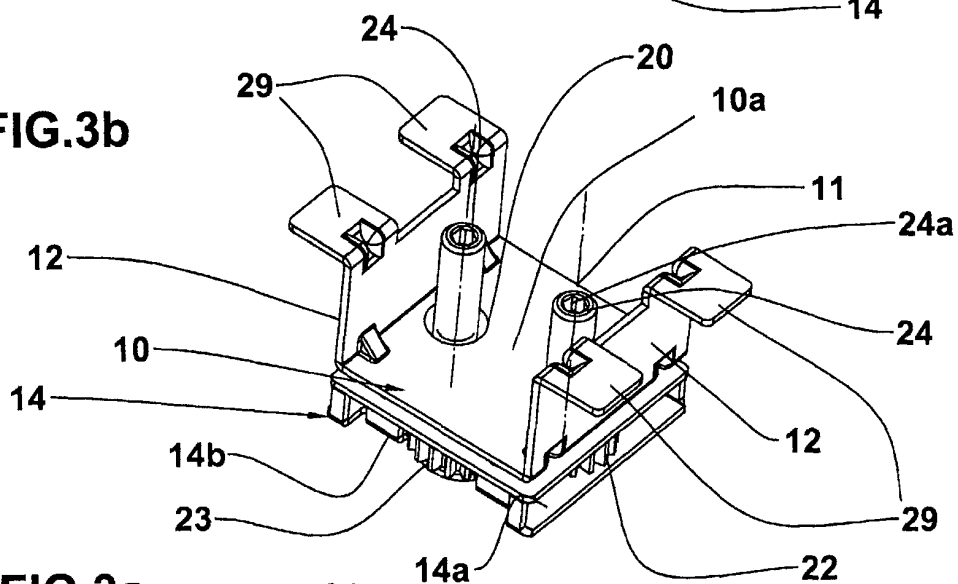


FIG.3a

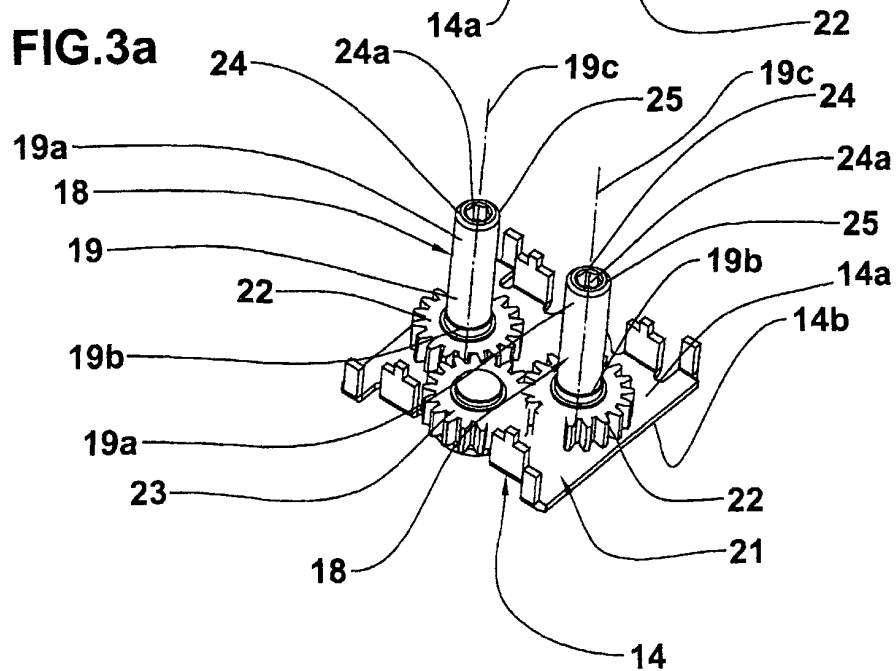


FIG.4

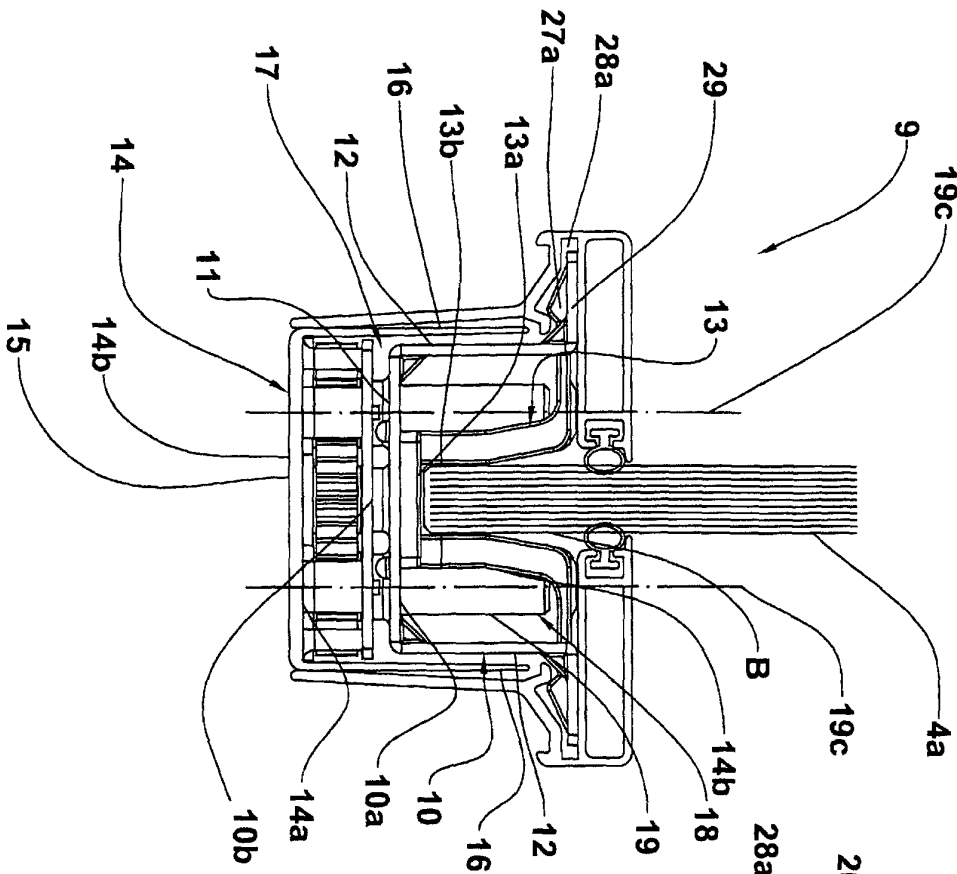
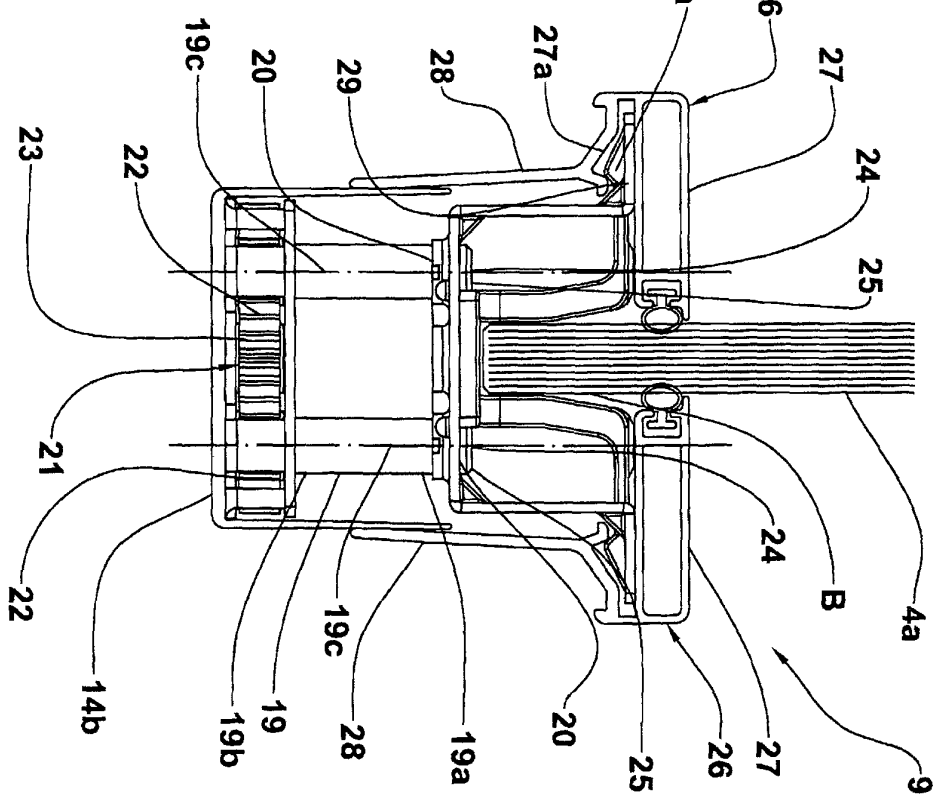


FIG.5





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 02 42 5128

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
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The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 12 July 2002	Examiner Khera, D
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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 02 42 5128

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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