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EUROPEAN PATENT APPLICATION

21 Application number: 89500016.4

51 Int. Cl.4: E 04 F 15/024

22 Date of filing: 17.02.89

30 Priority: 18.02.88 ES 8800477

43 Date of publication of application:
13.09.89 Bulletin 89/37

84 Designated Contracting States:
AT BE CH DE FR GB GR IT LI LU NL SE

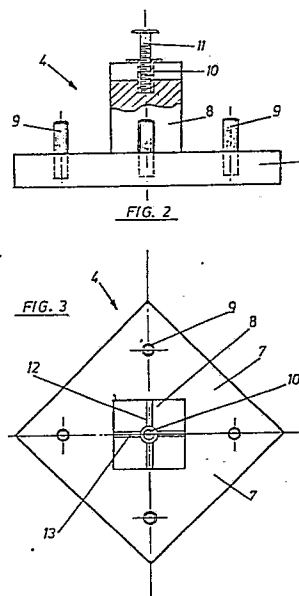
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54 Framework for the assembly of raised flooring and similar constructions.

57 Framework for the assembly of raised floors and similar constructions, built by a series of supports (4, 5, 6) which give a determined shape depending on the site the flooring is to occupy within the whole floor area, these supports having a support plate (7, 14 and 17) which is provided with two, three or four pegs (9, 16 and 21) which allow for the end of each beam (1, 2 and 3) to be assembled, and for which reason they are provided with drill holes near to their free ends; a nucleus (8, 14 and 18) which emerges from the central part of each plate and is provided with two, three or four notches (12 and 13) which allow for the strips (22 and 26) on the upper part of beams (1, 2 and 3) to be connected and which project from these forming a surround for the floor area which will be fixed on by headed screws (11), screwing into the upper part of the nucleus (8, 14 and 18) of each support.



Description

FRAMEWORK FOR THE ASSEMBLY OF RAISED FLOORING AND SIMILAR CONSTRUCTIONS

This invention refers to a framework for the assembly of raised flooring and similar constructions, and more specifically to a framework for the assembly of temporary raised flooring which can be easily assembled and disassembled.

On specific occasions it is necessary to have a provisional storey available above existing floors and surfaces, of which the application or use is of limited duration, the storey being subsequently disassembled to leave free the original surface on top of which it was erected. This is the case, for example, with trade fair and exhibition stands which are assembled and disassembled for each event. These stands usually include a storey formed by raised flooring or a similar construction which, together with the rest of the stand, is disassembled when the exhibition of trade fair ends.

This can also be applicable in the case of platforms which are erected on specific occasions and for different purposes within warehouses, public establishments, etc., where the duration of these platforms is normally limited.

The traditional construction system for the raised flooring or storeys used for the purposes mentioned above, consists in forming a framework with wooden beams on the floor or surface where the raised flooring is to be located, the beams being laid out perpendicular to each other. These beams are fixed to the floor and to each other in various ways. Closure panels are placed and fixed on top of this framework, thereby defining the surface span. The various fixings are made by using nails, screws, glue, etc. and this causes difficulties when disassembling the raised flooring, the usual result being that the material cannot be used again. In addition, a high level of specialised manpower is necessary for both the assembly and disassembly processes.

The aim of this invention is to develop a framework consisting of beams running perpendicular to each other, made up in such a way that assembly and disassembly are rapid and simple processes and that it is not necessary to use joining mechanisms which could cause the deterioration of the framework's components.

Another aim of the invention is to develop a framework onto which the panels which define the closed surface or storey can be easily laid down, these panels also being easily disassembled.

Construction of the raised flooring using the framework defined in this invention is a rapid process and, moreover, one which can be carried out without the necessity for specialised manpower.

Another advantage of the invention is that the different components of the raised flooring do not deteriorate during assembly and disassembly, meaning that they can be used on successive occasions.

In accordance with the invention, supportive segments are located at the intersection points of the framework's beams, and these segments consist of a plate on which the beam ends are

supported. A nucleus projects perpendicular to these plates from the upper surface and the ends of the beams meet at the lateral face of this nucleus. In addition to these plates, there are pegs which project perpendicularly around the above mentioned nucleus and these are situated in such a way that they can be introduced from beneath, through holes made in the end sections of the beams, are being one peg available for each beam supported on it.

The various beams of the framework have longitudinal and vertical partitions on their upper face, these having the same defined layout as the panels to enable them to link up.

These partitions are centred along the intermediate beams of the framework, whilst in the case of the peripheral beams the vertical partition is adjacent to the lateral and longitudinal external surface of these beams.

The support segments differ from each other depending on the position they occupy.

The support segments which are situated at the intermediate cross points where four beams coincide, consist of a square shaped nucleus centred on this plate and four pegs located around the nucleus, aligned two by two with the central line of this nucleus. The lateral surfaces of the nucleus are of the same width as the end transversal sections of the beams. In addition, this nucleus has, commencing from above, a threaded central drill hole which can take a headed retention screw for the panels, and two notches which run in accordance with the central line of the upper face and into which the ends of the beam strips coinciding at these support segments, are introduced.

In the case of the support segments situated at the corners of the layout where two beams coincide, these comprise a plate having at least two consecutive straight and perpendicular sides, a rectangular shaped nucleus with two of its lateral consecutive faces coplanar with the two above mentioned straight edges of the plate. These plates have two pegs centred on the zones to support the beams which are to coincide there.

Lastly, the support segments situated at the points of the layout where three beams coincide, consist of a plate having at least one straight side, the nucleus projecting coplanar with this, with flat lateral faces to support the end transversal sections of the beams, as well as a central notch, commencing from its upper side, which runs perpendicular to the straight side of the plate, which is to receive the end of the intermediate beam strip. These panels have three pegs which are centred on top of the zones to support the beams which are to coincide at the support segment.

The beam strips are of the same height or slightly thinner than the panels of the raised flooring.

The nucleus of the support segments will be of approximately the same height as the beams plus that of the upper strip.

The stated characteristics, together with others of

this invention, will be explained more clearly in the following description, compiled with reference to the attached drawings which show a possible means of implementing the invention. This example is of a non-restrictive nature.

The drawings:

Figure 1 is a partial ground plan viewing a framework for raised flooring constructed in accordance with the invention.

Figure 2 is an elevated view of one of the support segments situated at the intermediate cross points of the framework.

Figure 3 is a ground plan of the segment shown in figure 2.

Figure 4 is an elevated view of one of the support segments situated at the corners of the layout of the framework shown in figure 1.

Figure 5 is a ground plan of the segment shown in figure 4.

Figure 6 is an elevated view of one of the support segments located at the intermediate points of the layout where three beams coincide.

Figure 7 is a ground plan of the segment shown in figure 6.

Figures 8 and 9 show an elevated view and a ground plan of the intermediate beams of the framework shown in figure 1.

Figures 10 and 11 show an elevated view and a ground plan of the beams which define the layout of the framework shown in figure 1.

As can be seen in figure 1, the framework for the raised flooring is formed by beams which run perpendicular to each other, the intermediate beams having the reference 1 and the peripheral beams references 2 and 3.

At the intersection point of these beams, support segments (references 4, 5 and 6) are located. Segments 4 are located below the intermediate cross points, where four beams coincide, whilst support segments 5 and 6 are situated at the cross points of the layout of the framework, segments 5 being at the corners where two beams (2 and 3) coincide and segments 6 at the intermediate cross points of the layout where three beams coincide.

the configuration of support segments 4 is shown in figures 2 and 3. As can be seen, these segments consist of a plate (7) which has a square layout as detailed in the written example, and a central nucleus (8) which projects from the upper surface, together with a series of pegs (9). The nucleus (8) has a straight square prismatic shape, its lateral faces having the same width as the end transversal sections of the beams which coincide on top of this support segment. The nucleus (8) has a threaded orifice (10) in its upper side to take a headed screw (11) which will retain the panels which form the floor. In addition, the nucleus (8) has, commencing from its upper side, two notches (12 and 13), perpendicular to each other and situated in accordance with the central lines of the upper face of the nucleus.

The pegs (9) are situated around the nucleus, each pair of them located at opposite points in alignment with the central lines of the faces of the nucleus (8).

The support segments are laid out in such a way that the under sides of the beams are supported by the plate (7), whilst the transversal sections join with the lateral faces of the nucleus (8). On the under side of the beams there is an orifice which can take the corresponding peg (9). The plate (7) of these segments can have a layout which is different to that described.

Figures 4 and 5 show one of the support segments (5) situated at the corners of the layout. This segment includes a plate (14) of the same thickness as plate 7 of support segments 4. A nucleus (15) projects from the plate (14), this being of a straight rectangular prismatic shape. The plate (14) has at least two straight edges which are perpendicular to each other, with which two of the consecutive lateral surfaces of the nucleus (5) will be coplanar. On top of the plate (14) the end portions of beams 2 and 3 are supported, these beams having, on the under side and at the support zone, orifices to take the pegs (16). The plate (14) can have a different layout to that shown in figures 4 and 5, but will maintain the two straight perpendicular edges with which two of the lateral faces of the nucleus (15) are coplanar. This nucleus is of the same height as nucleus 8 of segments 4.

Lastly, figures 6 and 7 show one of the segments (6) which includes, as in the previous cases, a plate (17) of the same thickness as panels 7 and 14 of segments 4 and 5. From the upper face of plate 17 a nucleus (18) projects, this being of a straight rectangular prismatic shape. The plate (17) has at least one straight edge (19) which makes it coplanar with one of the greater lateral faces of the nucleus (18). This nucleus is of the same height as nuclei 8 and 15 of segments 4 and 5 and, commencing from above, it has a transversal notch (20). In addition, three pegs (21) project from the plate (17) and these are situated in a central position on top of the zone to support the beams which coincide on this support segment (6).

Intermediate beams 1, as shown in figures 8 and 9, are of a rectangular transversal section and have fixed, from above and in a longitudinal direction, a vertical strip (22), which projects from the end sections of these beams, from the portions which are to be introduced into notches 12 and 13 of support segments 4 and in notch 20 of support segment 6.

Beams 2 are shown in figures 10 and 11 and are of the same dimension as beams 1, however, they have an angle bar (23) fixed to their upper side, and one of the branches (24) of this angle bar meets and is fixed to this upper side, for example by screws (25). The other branch (26) projects perpendicularly and coplanar with one of the longitudinal lateral faces of the beams. The angle bar (23) projects slightly from the end sections of the beams (2), in sloping portions, as shown in figure 11.

Beams 3 have the same characteristics as beams 2, the only difference being that the angle bar (23) extends further from one of their ends, to achieve the corner connection shown in figure 1.

The strips (22) and the vertical branch (26) of the angle bars (23) define layouts which are the same as

those of the covering panels, these being retained by the head of the screw (11) fixed on top of the support segments (4).

By means of the construction described, a framework is achieved which can be assembled easily and rapidly, given that it is possible to use the necessary number of support segments together with the corresponding beams. Once the entire framework has been assembled, the panels are placed in accordance with the layouts defined by the strips (22) and the branch (26) of the angle bars (23), these panels being secured by the screws (11).

It is considered that the nature of the invention has been described in sufficient detail together with the manner of implementing it in practise, and it must be mentioned that the above clauses (also shown in the attached drawings) are subject to detail changes whenever this does not affect the main principal.

Claims

1.-Framework for the assembly of raised flooring and similar constructions, which consists of a series of equidistant square section beams, running in two perpendicular directions, on top of which the panels of the raised flooring are assembled; distinguished by the fact that at the intersection points of the beams there are support segments, made up of plates on top of which the end portions of the beams are supported, and from the upper surfaces of these plates a nucleus projects perpendicularly, the ends of the beams meeting at the lateral faces of this; and pegs which are introduced, from beneath, through holes made in the end portions of these beams, each plate having a peg for each beam coinciding there; it is also distinguished by the fact that in the upper face of the beams there is a vertical longitudinal partition, each one having the same layout as that of the panels.

2.-Framework as in patent claim 1, distinguished by the fact that the support segments situated at the intermediate cross points where four beams coincide, consist of a nucleus with a square layout, centred on the plate, and four pegs situated around the nucleus, aligned two by two with the central line of the mentioned nucleus, the lateral surfaces of the nucleus being of the same width as that of the end transversal section of the beams; the nucleus having, moreover, commencing at its upper face, a threaded central drill hole, to take a headed retention screw, and two notches which run in accordance with the central line of this face.

3.-Framework as in patent claims 1 and 2, distinguished by the fact that the intermediate beams have a perpendicular longitudinal strip fixed at the upper face, which projects slightly from the end sections of the beams in portions to be positioned in the mentioned notches of the nucleus of the support segments situated at the intermediate cross points.

4.-Framework as in patent claim 1, distinguished by the fact that the support segments situated at the corners of the layout where two beams coincide, consist of a plate which has at least two straight consecutive edges perpendicular to each other, the nucleus being of a straight rectangular prismatic shape, with two of the consecutive lateral faces coplanar to the mentioned straight edges of the plate; in addition, two pegs centred on top of the zone to support the beams which coincide on top of these support segments, project from the panel.

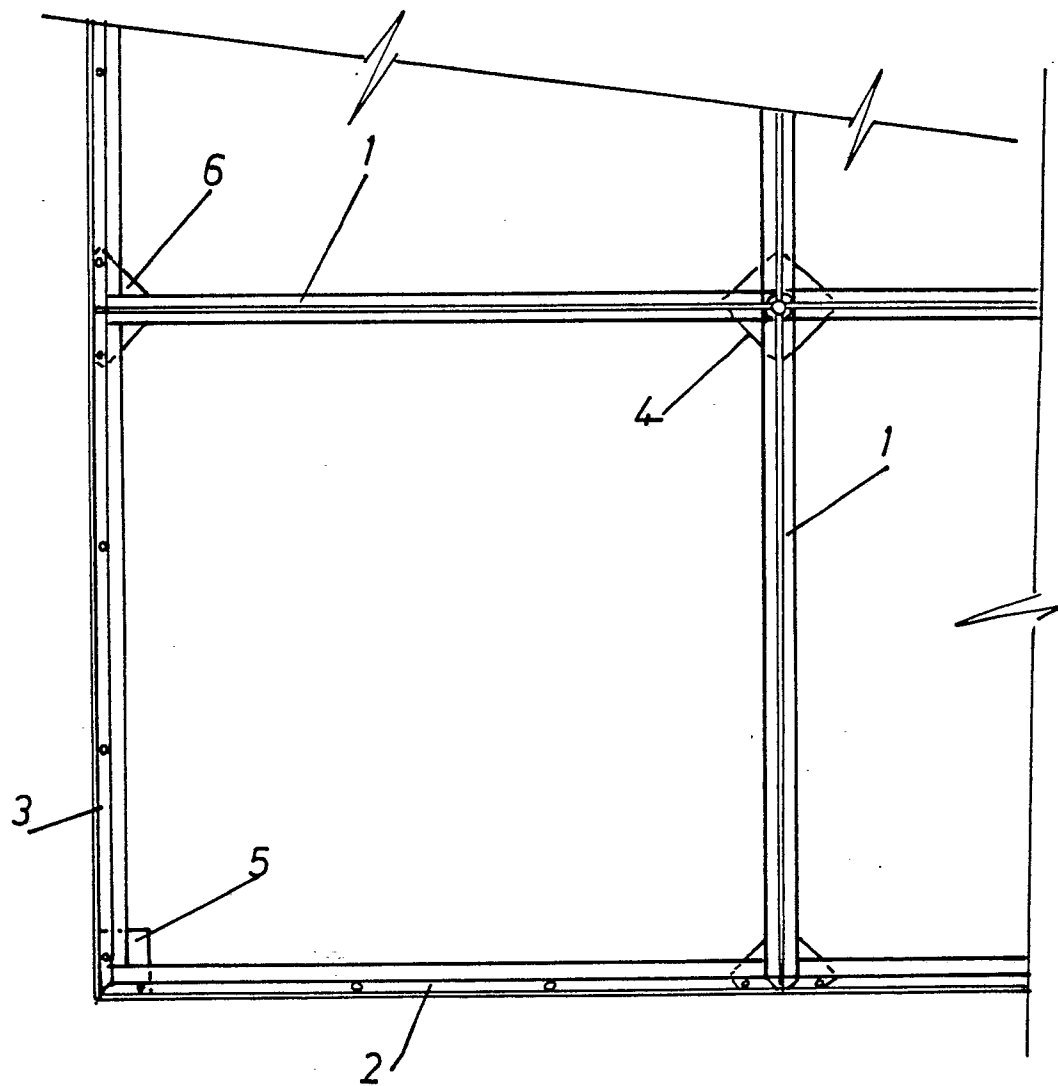
5.-Framework as in patent claims 1 and 4, distinguished by the fact that the beams which run along the sides of the the layout of the framework have an angle bar fixed to their upper face, one of the branches of which runs embedded along this upper face, whilst the other branch rises coplanar with one of the adjacent longitudinal surfaces of the beams, this angle bar projecting slightly from the end transversal sections of the beams, in oblique horizontal edge portions.

6.- Framework as in patent claim 1, distinguished by the fact that the support segments situated at the points of the layouts where three beams coincide, consist of a plate which has at least one straight edge, coplanar with which the mentioned nucleus projects, this having flat lateral faces to support the end transversal sections of the beams, together with a transversal central notch commencing at its upper side, which runs perpendicular to the mentioned straight edge of the plate; in addition this plate includes three pegs centred on the zone to support the three beams which coincide at this mentioned support segment.

7.- Framework as in patent claims 4 and 7, distinguished by the fact that the strip of the intermediate beams and the branch projecting from the angle bar are of the same height and slightly thinner than the panels of the raised flooring.

8.-Framework as in the previous patent claims, distinguished by the fact that the nucleus of the support segments is of approximately the same height as that of the beams plus that of the strip or angle bar.

FIG. 1



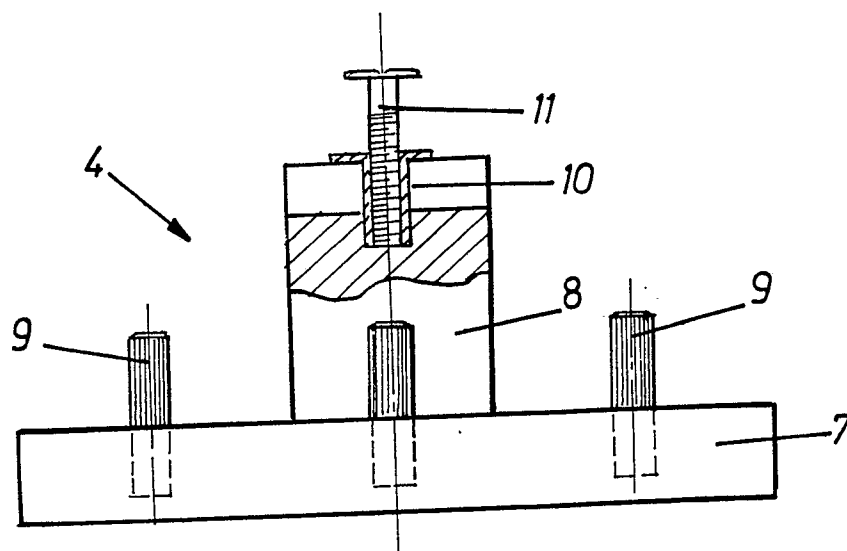


FIG. 2

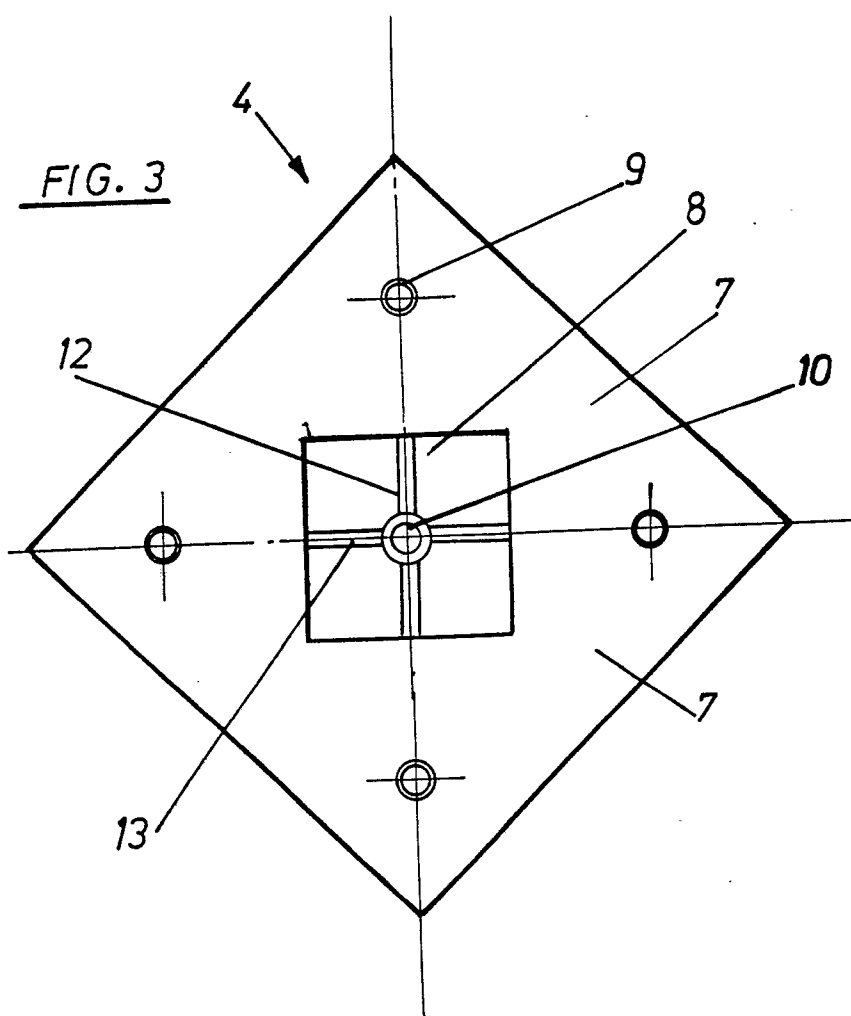
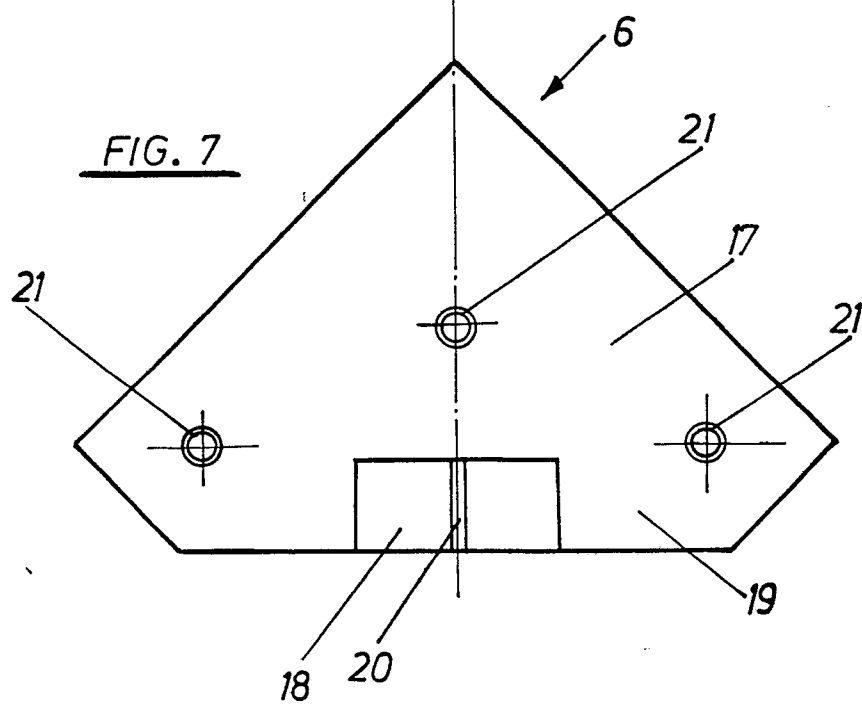
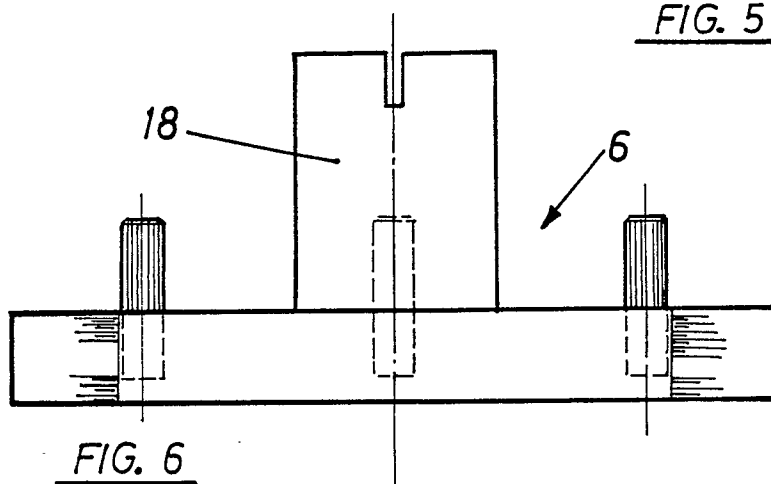
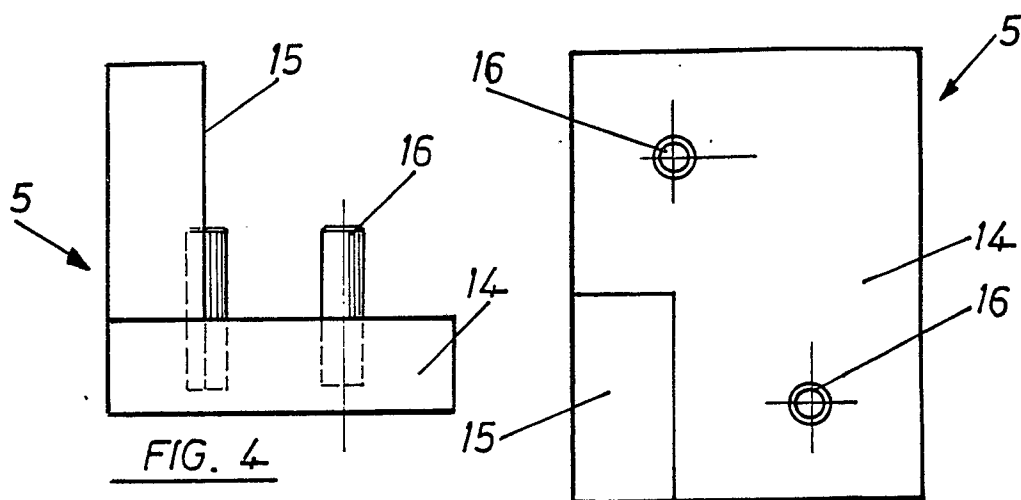
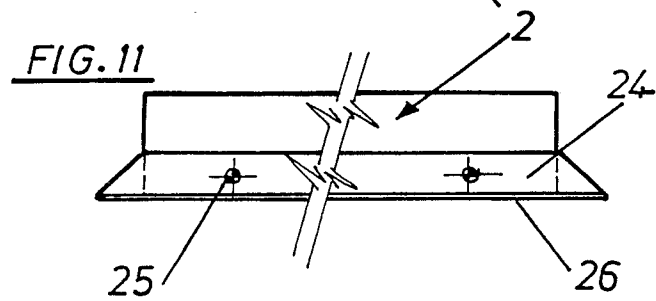
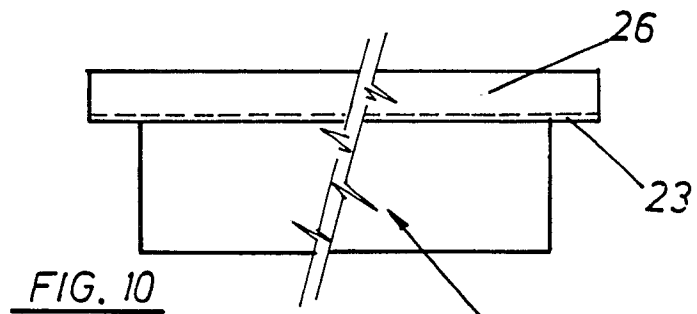
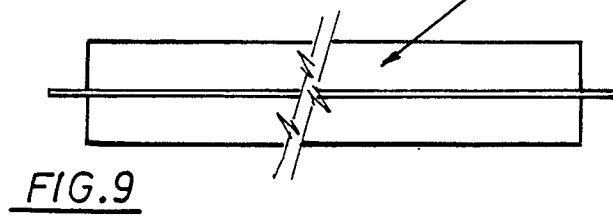
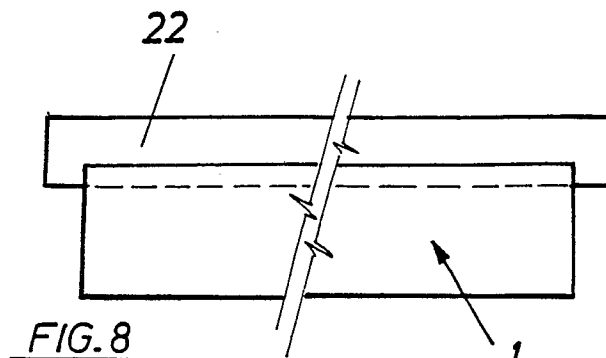


FIG. 3







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. 4)
A	DE-A-3 330 612 (BREITENBACH) * Page 3, line 1 - page 4, line 38; figures 1-5a * ---	1,2,3	E 04 F 15/024
A	GB-A-2 164 073 (THORNHILL) * Page 2, line 5 - page 3, line 83; figures 1-11 * ---	1,2,3,7	
A	FR-A- 946 337 (MACHAVOINE) * Page 1, line 25 - page 2, line 24; figures 1-5 * ---	1,2,8	
A	FR-A-2 567 945 (DI FELICE) * Page 3, line 18 - page 5, line 37; figures 1-20 * ---	1,2,4,6	
A	FR-A-1 359 353 (BUREAU TECHNOR) * Page 1, right-hand column, line 18 - page 2, left-hand column, line 38; figures 1-12 * ---	1,2,4,6	
A	GB-A-1 242 674 (SCOTT) * Page 2, lines 36-66; figures 1-3 * -----	1,2	TECHNICAL FIELDS SEARCHED (Int. Cl.4) E 04 F
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 12-06-1989	Examiner AYITER J.
<div>CATEGORY OF CITED DOCUMENTS</div> <div>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</div> <div>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</div>			