



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11)

EP 1 233 113 A2

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:

21.08.2002 Bulletin 2002/34

(51) Int Cl.7: **E04B 2/74**

(21) Application number: **02075530.2**

(22) Date of filing: **07.02.2002**

(84) Designated Contracting States:

**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE TR**

Designated Extension States:

AL LT LV MK RO SI

(30) Priority: **15.02.2001 SE 0100486**

(71) Applicant: **Swed Style AB**

567 24 Vaggeryd (SE)

(72) Inventor: **Wadsell, Per**

567 32 Vaggeryd (SE)

(74) Representative: **Wallengren, Yngvar**

Patentbyran Y Wallengren AB

Box 116

331 01 Värnamo (SE)

(54) Partition system

(57) A composite partition system includes a number of partition elements (3) with vertical side edge portions (8, 9) where each side edge portion has two flanges (23) which lie in a common plane and which extend along the side edge portion (8, 9). For joining together two partition elements (3), use is made of a joint rail (16) with a longitudinal groove in which two abutting, flanges (23) on adjacent partition elements (3) may be accommodated. The joint rail (16) has catches (27) which may be passed through apertures in a "hat profile rail", which displays the flanges (23). Tnteriorly in the "hat profile rail", there is a locking rail which is displaceable in its longitudinal direction and which, in an open position, permits the insertion and removal of the catches (27) through the apertures of the hat profile rail and which, in a locking position, fixedly locks the catches (27).

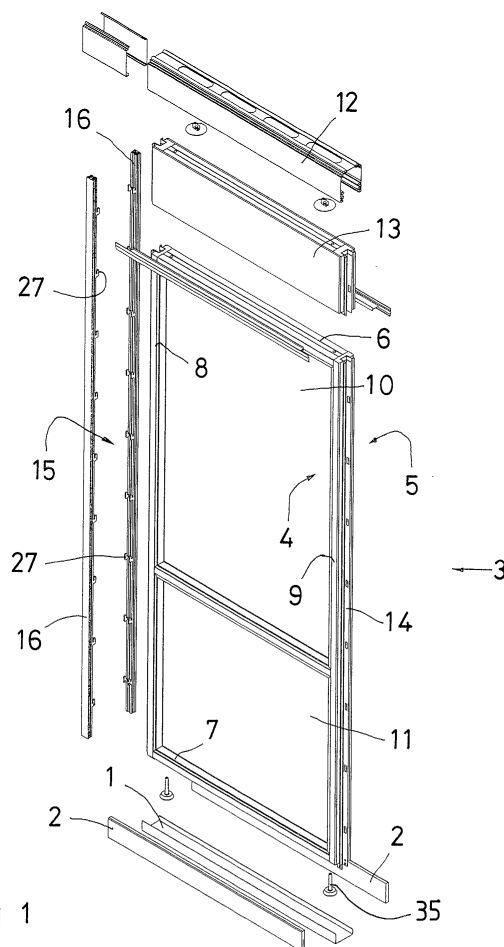


Fig 1

EP 1 233 113 A2

Description

TECHNICAL FIELD

[0001] The present invention relates to a partition system for dividing up a premises into a number of subunits and includes a number of rectangular partition elements with a first and a second side, the partition elements each having at least one upper and one lower edge portion which, in opposing side edges of the elements, are united via vertical side edge portions, there being disposed, between adjacent elements at the side edges of the elements, connection devices for interconnecting adjacent elements.

BACKGROUND ART

[0002] Partition systems of the type outlined by way of introduction are known in a multiplicity of variations and are employed, for example, for dividing up larger premises into a number of small rooms or subunits. Such partition systems may be intended for more or less permanent assembly.

[0003] In such cases where a more permanent assembly of the partition system is to be put into effect, quite extensive physical intervention and alteration in the floor, walls and ceiling of the premises can quite often be acceptable.

[0004] As regards partition systems which are intended for only temporary division of larger premises into smaller subunits, there have hitherto not been available any reliably and smoothly functioning solutions, since, in such situations, it is hardly acceptable to carry out extensive physical alteration in the floor, walls and ceiling of the premises. As a result, the joining together of adjacent partition sections or partition elements has proved to be critical and has hardly given satisfactory results. It has proved particularly difficult to include doors in such a partition system, since doors create dynamic loadings that can hardly be absorbed by the joints between adjacent partition elements without the need for the partition elements to be further reinforced, i.e. some physical alteration to the premises is required.

PROBLEM STRUCTURE

[0005] The present invention has for its object to design the partition system intimated by way of introduction so that it may simply and readily be assembled in existing premises without physical intervention, or alteration, or with at least a minimum of such alteration needing to be carried out to the floor, walls and ceiling of the premises. The present invention also has for its object to design the partition system such that the interconnection of adjacent partition elements will be extremely stable so that requirements on securing anchoring in the floor, walls and ceiling of the premises can thereby be correspondingly reduced. Further, the present invention

has for its object to design the partition system so that it will be simple and convenient to assemble and dismantle, and so that it moreover will be of such solid stability that door sections can also be assembled. Finally, the present invention has for its object to design the partition system so that it need not, or only to a limited extent, be reconditioned or repaired before it can be re-used after dismantling.

SOLUTION

[0006] The objects forming the basis of the present invention will be attained if the partition system intimated by way of introduction is characterised in that the connection devices at one side edge of an element include two flanges which a) are connected to the side edge portion located there, which b) extend therealong, which c) have free edges facing away from one another and which, d) are disposed to abut against corresponding flanges on an adjacent element; and a connection member disposed each on the first and second sides of adjacent elements and which has a recess for accommodating and uniting two mutually abutting flanges on adjacent elements.

BRIEF DESCRIPTION OF THE ACCOMPANYING DRAWINGS

[0007] The present invention will now be described in greater detail hereinbelow, with reference to the accompanying Drawings. In the accompanying Drawings:

Fig. 1 shows, in perspective and in the form of an exploded view, one example of components included in the partition system;

Fig. 2 is, in perspective, a partial section of a connection device placed at one side edge portion of a partition element;

Fig. 3 shows the connection device according to Fig. 2 seen in the direction of the arrow A in Fig. 2; and

Fig. 4 is a top plan view of a connection device and side edge portions of two adjacent partition elements interconnected thereby.

DESCRIPTION OF PREFERRED EMBODIMENT

[0008] In Fig. 1, reference numeral 1 relates to a floor rail which is approximately U-shaped in cross section and which is placed on an existing floor surface in the premises which is to be divided into subunits. The floor rail can be laid quite loosely on the floor surface but it may also be prevented from sliding on the floor surface by the use of a friction-increasing material between the under side of the floor rail and the upper side of the floor

surface, for example in the form of double-sided adhesive tape.

[0009] Partition elements 3 included in the partition system are carried on the floor rail 1 with the aid of vertically adjustable feet 35. In this instance, it is assumed only that the floor linings 2 which are employed are sufficiently high. This height adjustment allows for compensation of normal height deviations in the floor.

[0010] In the assembled state, the partition system also includes, as was mentioned above, a floor lining 2 on each side of the floor rail 1, the floor lining being of such vertical extent that it extends up on and seals against a partition element 3 placed in the floor rail. The sealing is important if satisfactory sound damping is to be attained through an assembled partition wall. In addition, the space between the floor linings under the partition element 3 proper are filled with a sound insulating material, e.g. mineral wool, for the same reason.

[0011] The partition element 3 is of rectangular outer configuration and may be more or less covered by panel material, glass panes or the like. The height of the partition elements is often standardised at a single standard dimension, while, on the other hand, the width of the elements may vary within broad limits.

[0012] Each partition element 3 has a first side 4 and a second side 5, an upper edge portion 6 and a lower edge portion 7, as well as two opposing side edge portions 8 and 9. In the illustrated embodiment, the upper portion 10 of the partition element may be covered with glass, while the lower portion 11 may be covered by a panel material.

[0013] The partition elements 3 are secured in the roof of the premises or beneath it in those suspension devices which carry the ceiling of the premises by means of roof rails 12 which are of approximately U-shaped cross section and which, between their shanks, accommodate an upper region of the partition element 3 or possibly an upper region of a filler element 13 placed over the partition element. The roof rails are vertically dimensioned to permit a vertical adjustment in that the partition elements 3 are slid up more or less along between its two side shanks.

[0014] The side shanks of the roof rails 12 have, along their lower edges, one or more anchorages for sealings which sealingly abut against the opposing sides of the partition elements 3 or superjacent filler elements 13, whereby the sound damping through an assembled partition wall is considerably improved.

[0015] For interconnecting two adjacent partition elements 3 and filler elements 13 in those cases where such are employed, use is made of connection devices 14 and 15 which are placed along the vertical side edge portions 8 and 9 of the partition elements and which, on the one hand, include components 14 which are secured on the side edge portions 8 and 9, and, on the other hand, connection members 16 which are in the form of elongate profile rails 24 (see Figs. 2-4).

[0016] Fig. 4 is a view from above of two interconnect-

ed partition elements 3 which meet at their side edge portions 8 and 9. Along these side edge portions, the two partition elements display vertical side posts 17 and 18, respectively, which, in the illustrated embodiment, are of substantially rectangular cross section but which, on their sides turned to face towards one another, have vertically extending, approximately rectangular grooves 19 and 20, respectively. In the bottoms of these grooves, there are secured vertically extending profile rails of so-called hat profile. The profile rails each have a web 21 which is secured against the groove bottom, two mutually substantially parallel shanks 22, as well as flanges 23 which are disposed at the free edges of the shanks and are bent away from them. The flanges 23 are planar and lie in the same partition section in a common plane which is parallel with the vertical side edges of the partition section and at right angles to the plane of extent of the partition section. The flanges have outer, free edges, the distance between these being somewhat less than the thickness of one partition section, i.e. the distance from its first side 4 to its second side 5.

[0017] On opposing sides of the side posts 17 and 18, there is disposed panel material 36 (in Fig. 4 shown only at the side post 18), which, along its vertical edges 37, abuts and seals against profile rails 24 which will be described in greater detail below.

[0018] The profile rails of hat profile are included in the above-mentioned connection devices 14 and 15 and are alike at opposing sides of one partition element.

[0019] For interconnecting adjacent partition elements, use is made of connection members 16 which have recesses 25 in which two mutually abutting flanges 23 on two adjacent partition elements are insertible so that the flanges are thereby held pressed against one another, principally without play, but preferably also with a certain tensioning. The connection members are in the form of vertical profile rails 24 which extend throughout the entire height of one partition element and a filler element 13 which may possibly be disposed thereon. The profile rails also have longitudinal recesses or grooves 25.

[0020] Alternatively, the connection members may be short in the vertical direction and be disposed severally on each side 4 and 5, respectively of mutually meeting partition elements 3. The important feature is however that they, regardless of length in the vertical direction, realise the alignment functions which will be described in greater detail below. Such short connection members are covered on the outside by a covering or decorative artwork strip which gives mutually interconnected partition sections smooth joints.

[0021] The flanges 23 being pairwise accommodated with tight fit, or possibly with a certain pretensioning, in the recesses or grooves 25 of the connection members 16 and profile rails 24, respectively, adjacent partition elements will be held accurately positionally fixed in relation to one another in or parallel with a plane of extent of two mutually meeting partition elements 3.

[0022] The shanks 22 are wider than the depth of the groove 19, for which reason the flanges 23 will be located a certain distance from the mutually facing side edges of the side posts 17 and 18. There will be hereby be formed, between the sides of the flanges facing towards the side posts and the edge surfaces of the side posts facing towards the flanges, an accommodation space in which approximately half of a profile rail 24 may be accommodated. Consequently, a profile rail 24 will bridge over the distance between the vertical side edges of two adjacent side posts 17 and 18. The fit for the profile rail in this space is such that sealing beads or strips placed in longitudinal channels 26 in the profile rails afford a good seal, whereby sound transmission through a partition wall constructed from several partition elements is greatly reduced.

[0023] The profile rails 24 are designed to be slid in over adjacent flanges 23 in a direction which is parallel with the common plane of extent of the flanges on a partition element. In order to prevent the profile rails 24 from being removed in the same direction, the profile rails have, on their mutually facing sides in Fig. 4, projecting catches 27 which are insertible through corresponding apertures 28 in the shanks 22. As is clearly apparent from Fig. 1, the catches 27 are turned to face upwards.

[0024] For locking the catches 27 in the "hat profiles", there are disposed locking devices interiorly in these profiles, which are movable in a direction up and down, and which, in an open position, keep the apertures 28 of the shanks 22 free but which, in a locking position, block the upper regions of the apertures 28 so that the upwardly directed projections 29 of the catches can no longer be withdrawn back out through the apertures of the "hat profiles". In the locking position, the locking devices are displaced in a downward direction.

[0025] In the embodiment with vertically short connection members 16, each such connection member has at least one pair of catches 27.

[0026] In the blocked positions for the catches 27, these are retracted without clearance or with a certain pretensioning into the interior of the "hat profiles". This implies that the surfaces of the connection members 16 and the shanks 22 of the profile rails 24 facing towards the outsides of the "hat profiles", respectively, are held urged against the "hat profiles", whereby two mutually interconnected partition elements 3 are held reliably positionally fixed in relation to one another transversely of the plane of extent of the partition elements 3.

[0027] In one practical embodiment, the locking members consist of a profile rail of U-shaped cross section which has a bottom 30 and two mutually substantially parallel side walls 31. The side walls 31 follow the insides of the two shanks 22 and are displaceable in the vertical direction in relation thereto. Further, the side walls 31 have apertures 32 which are of approximately the same size and configuration as the apertures 28 in the shanks 22. In the upwardly shifted position of the U-shaped profile rail, the apertures 28 and 32 are in reg-

ister with and cover one another so that the catches 27 may freely be moved into and out of these apertures. With the U-profile rails displaced downwardly, the apertures no longer cover or are in register with one another, but the material of the side walls 31 blocks upper regions of the apertures 28 of the shanks 22 so that the upwardly directed projections 29 on the catches 27 are thereby urged inwards towards one another and are prevented from being withdrawn, whereby the connection members 24 are locked in position.

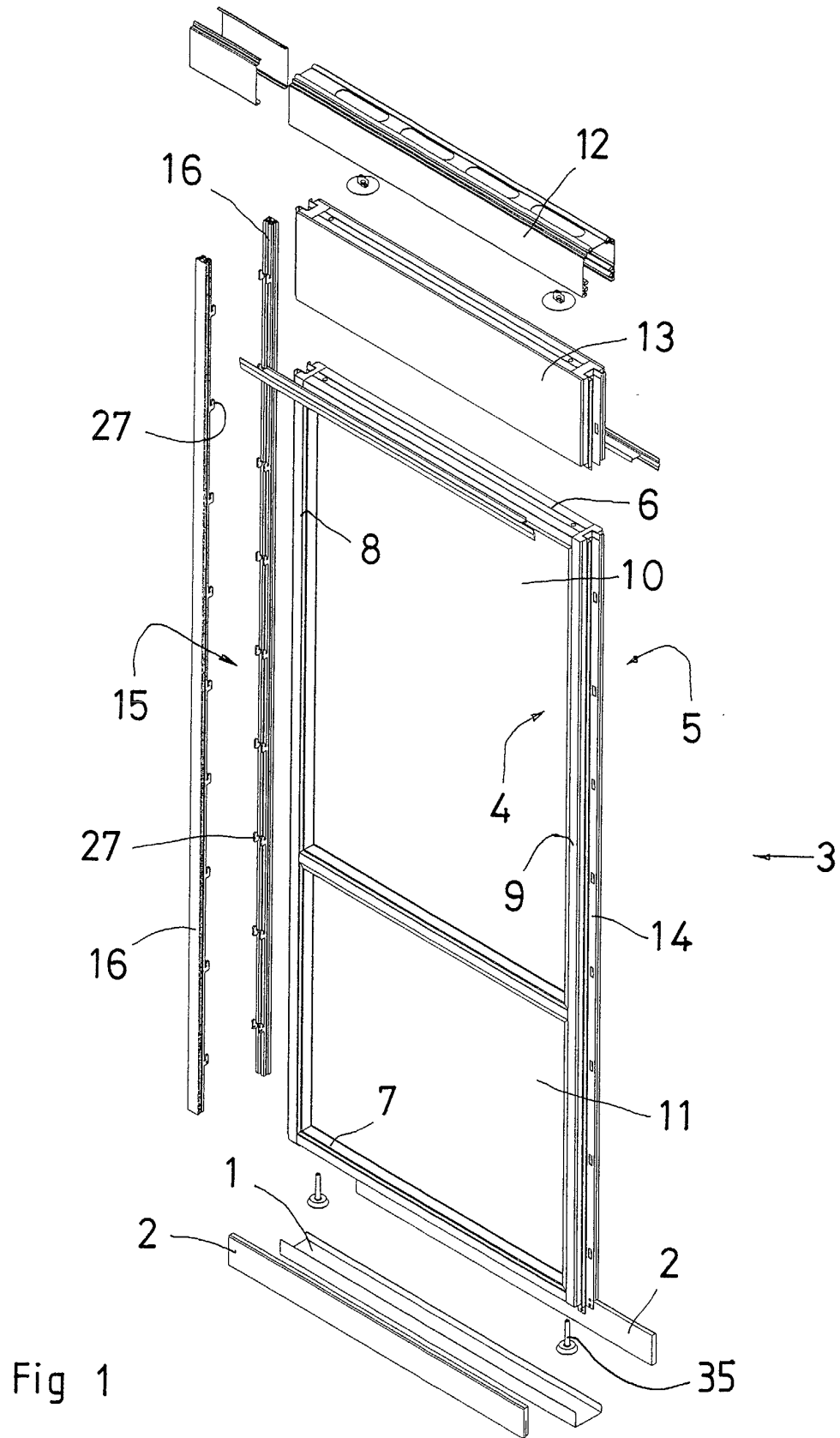
[0028] As has been mentioned above, the locking rails are shiftable in the vertical direction and are lockable interiorly in the profile rails of "hat profile". In order to make for such shiftable capability, the U-profile rails have elongate grooves through which extend corresponding pins with heads. In order to limit the stroke length of the profile rails, these have elongate recesses 33 in which an arrest member 34 is placed.

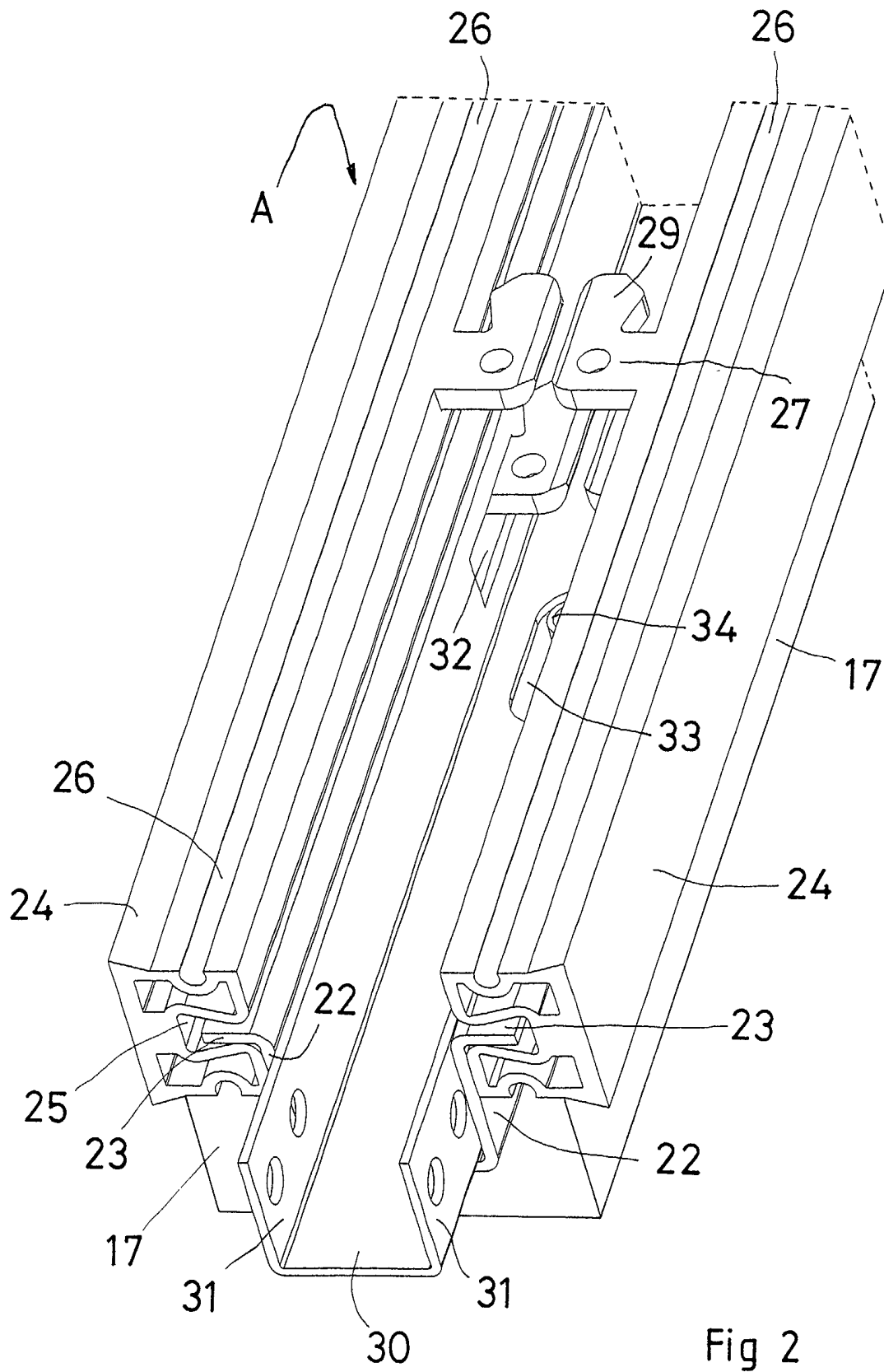
Claims

1. A partition system for dividing up a premises into a number of subunits and including a number of rectangular partition elements (3) with a first (4) and a second (5) side, the partition elements each having at least one upper and one lower edge portion (6, 7, respectively), which, in opposing side edges of the elements, are united via vertical side edge portions (8 and 9), there being disposed, between adjacent elements at the side edges of the elements, connection devices (14, 15, 16) for interconnecting adjacent elements, **characterised in that** the connection devices, at one side edge portion (8, 9) of one element (3) include two flanges (23), which a) are connected to the side edge portion (17, 18) located there, which b) extend therealong, which c) have free edges facing away from one another and which, d) are disposed to abut against corresponding flanges on an adjacent element; and a connection member (16) disposed each on the first and second sides (4, 5, respectively) of adjacent elements (3), and having a recess (25) for accommodating and uniting two mutually abutting flanges (23) on adjacent elements.
2. The partition system as claimed in Claim 1, **characterised in that** the flanges (23) along their edges facing towards one another, are each united with their shank (22) which extends towards an adjacent side post (17, 18) at said side edge portions (8, 9) and are secured therein, and that the spaces, one on each side (4, 5) of the element (3), between the side of the side post facing towards the flanges and the side of the flanges facing towards the side post are groove shaped and formed for accommodating each one of a side portion of a connection device (16) when this, accommodates the flanges (23) in

its recess (25), the connection device being in the form of an elongate profile bar (24).

3. The partition system as claimed in Claim 2, **characterised in that** the shanks have apertures (28) for passage of catch-shaped projections (27) on the profile bars (24); and that there are disposed, on the mutually facing sides of the shanks, movable locking devices which, in an open position, permit insertion of the projections, and which, in a locking position, prevent withdrawal of the projections. 5 10
4. The partition system as claimed in Claim 3, **characterised in that** the locking devices are disposed on an elongate locking rail with two side walls (31) disposed in association with the insides of the shanks (22) and which have apertures (32) which, in the open position, cover the apertures (28) of the shanks (22) and which, in the locking position, are located partly over or under them so that they are partly covered by the locking rail. 15 20
5. The partition system as claimed in Claim 4, **characterised in that** the flanges (23) and the shanks (22) constitute a part of a profile bar (21, 22, 23) of so-called hat profile where its web (21) interconnecting the shanks is secured in the side post (17, 18). 25
6. The partition system as claimed in Claim 5, **characterised in that** the profile bar (21, 22, 23) with the "hat profile" is partly countersunk in a groove (19, 20) in the side post (17, 18, respectively) so that the web (21) of the profile bar abuts against the bottom of the groove. 30 35
7. The partition system as claimed in any of Claims 4 to 6, **characterised in that** the locking rail (30, 31) is approximately U-shaped in cross section and is disposed with the bottom (30) of the U facing towards the side post (17, 18), the side walls (31) of the locking rail being narrower than the shanks (22). 40
8. The partition system as claimed in any of Claims 2 to 7, **characterised in that** the recess (25) of the connection bar (24) is elongate and groove shaped, its depth being greater than the width of the flanges (23). 45
9. The partition system as claimed in any of Claims 1 to 8, **characterised in that** the flanges (23), at one side edge of an element (3), lie in a common plane. 50
10. The partition system as claimed in any of Claims 1 to 9, **characterised in that** the flanges (23) are planar and at right angles to the plane of extent of a partition element (3). 55
11. The partition system as claimed in any of Claims 1 to 10, **characterised in that** the distance between free edges of the flanges (23) facing away from one another at one side post (17, 18) is less than the thickness thereof at right angles to the plane of extent.





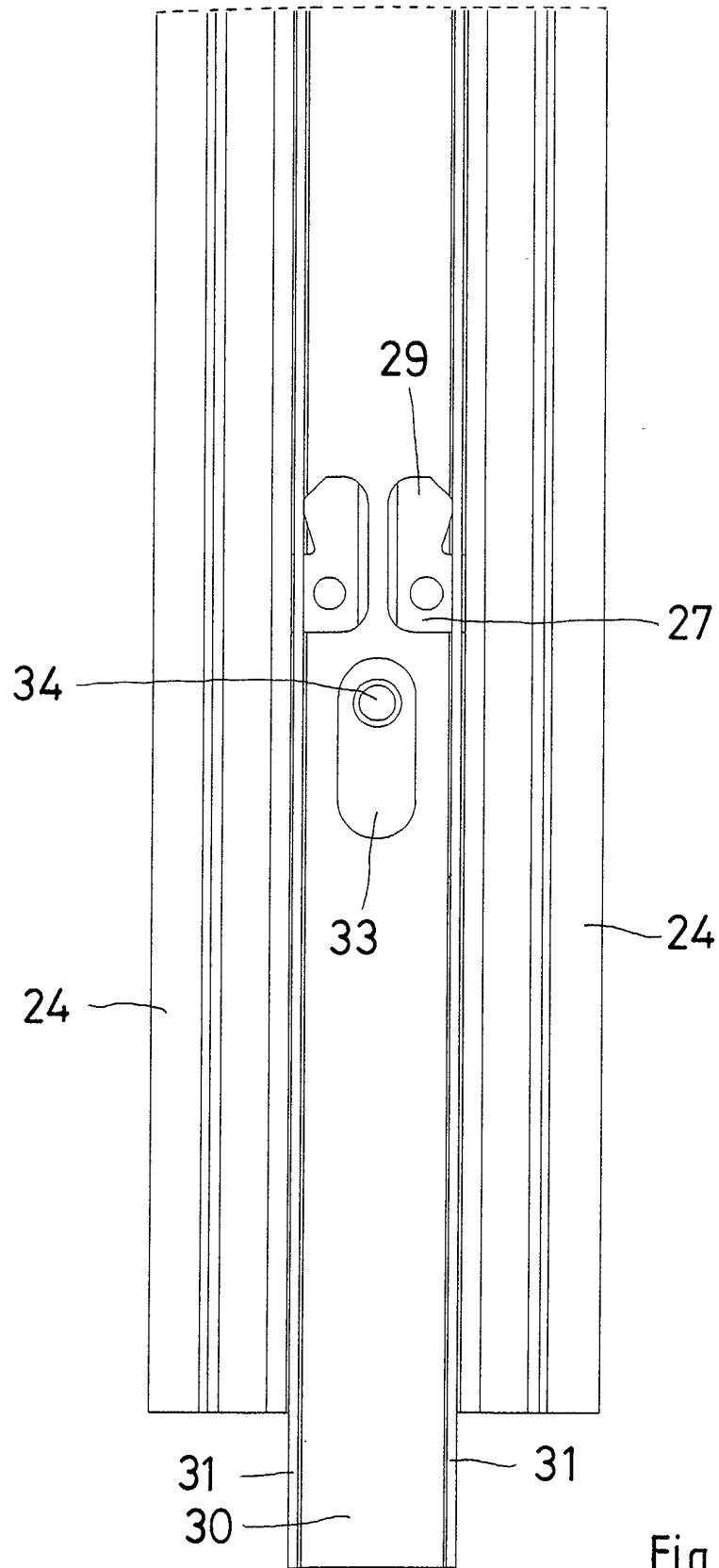


Fig 3

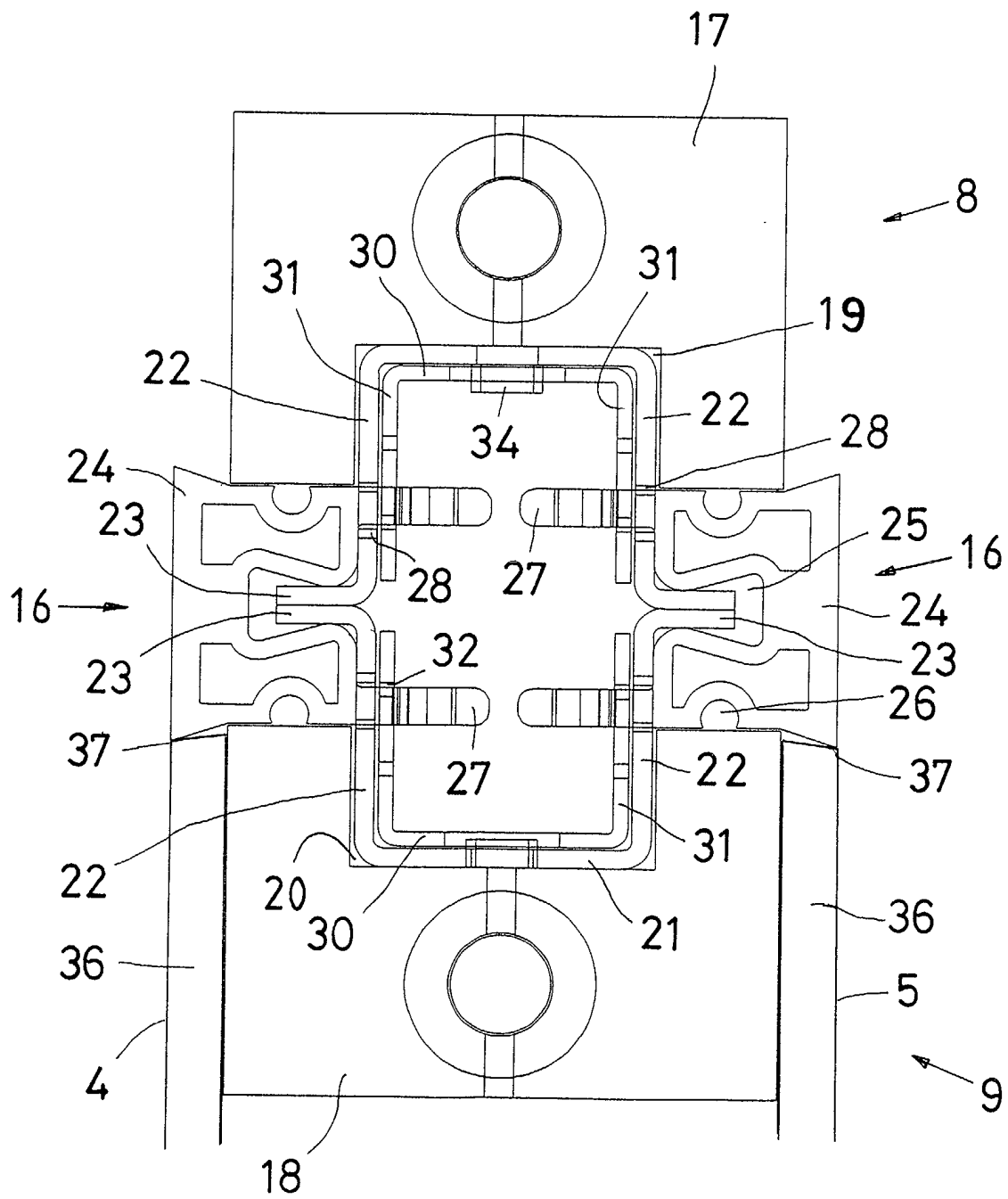


Fig 4