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(54) **Floor mat**

(57) Rails (1) are arranged side by side and neighbouring rails (1) connected by connecting profiles (7a, 7b) which each comprise two parallel coupling rods (11) accommodated in coupling grooves (10) and connected through narrower coupling slots connecting the coupling grooves (10) to lateral faces of the rails (1). The cross section of a coupling slot is essentially a sector with an opening angle slightly greater than 180°. Its lateral extension is 1.5 times the radius of the sector or less. The cross sections of the coupling rods are also sectors. The opening angle can be essentially the same as the opening angle of the coupling groove (10) and the coupling rods (11) connected to each other directly, the connecting profile (7a) establishing a rigid connection between the neighbouring rails (1) or the opening angle of the cross section of the coupling rods (11) can be smaller than the opening angle of the cross section of the coupling groove (10) and the coupling rods connected by a web, allowing a rotation of the rails (1) with respect to the connecting profile (7b) which makes it possible to roll up the floor mat. The connecting profiles (7a, 7b) can be fixed by fixing clips (12a; 12b) retained in the coupling grooves (10) by friction.

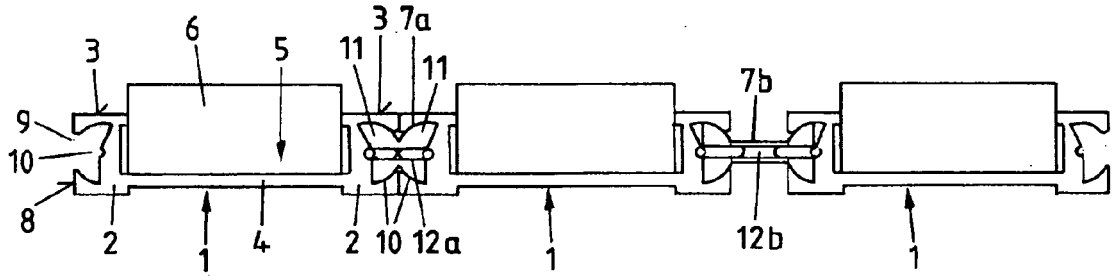

Fig. 2

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Description

Field of the invention

[0001] The invention concerns a floor mat as used, in particular, in entrance areas of department stores, theatres, hotels and other public walking areas. A floor mat of this kind usually covers a rather large area. It must be removable for cleaning purposes.

Prior art

[0002] A floor mat according to the generic clause of claim 1 is known from DE 44 06 093 A1. The connecting profile consists of two coupling rods connected by a web, each coupling rod having essentially cylindrical shape. The end-to-end coupling grooves are also of essentially cylindrical shape, i.e., have circular cross section, each coupling groove of a pair of neighbouring rails accommodating one of the coupling rods of a connecting profile. The connecting profile is in each case to some extent rotatable against the rail such that the floor mat can be rolled up. Due to the coupling rods being full cylinders the coupling grooves take up much space in the lateral direction. As a consequence, the upper surfaces of the rails must either have broad margins which are bare, carrying no wiper material or similar, or they have, as is the case with the prior art floor mat, great overall height because the coupling grooves are arranged under a groove for anchoring a strip of wiper material.

[0003] A similar solution where the rails are rather flat but exhibit broad bare margins is known from US Re. 32 061.

[0004] Another floor mat with coupling rods of essentially cylindrical shape is known from AT 000 009 U1. Every rail has on each side a pair of coupling grooves which are arranged one above the other at different distances from a lateral boundary of the rail. This floor mat has the same drawbacks as the ones described above. It allows a choice between two different distances separating neighbouring rails with a single connecting profile, but this comes at the cost of great overall height of the rails.

[0005] US 5 157 804 A shows a floor mat where metal connecting profiles have coupling grooves for accommodating coupling rods laterally extending from rails which consist of polymeric material. The connecting profiles are of necessity rather broad in this case, such that the strips of wiper material carried by the rails are flanked by broad bare metal strips.

[0006] In DE 31 24 529 A1 a floor mat is disclosed where a connecting profile comprises coupling rods of roughly elliptic cross section whereas the coupling grooves in the rails are somewhat larger with a D-shaped cross-section. This solution allows limited rotation of the connecting profile against the rail but the relative position of these parts is not precisely controllable, as their connection allows some lateral and vertical play in addition to the rotational degree of freedom. As a consequence, the configuration of the floor mat is not precisely fixed and relative motions of its parts which may cause clatter, wear and even damage cannot be excluded.

Summary of the invention

[0007] It is an object of the present invention to provide a floor mat of the generic type whose rails, at moderate overall height, can carry strips of wiper material or similar which cover most of their upper surfaces, leaving only narrow margins where the rail material, usually aluminium, lies bare and is visible.

[0008] This object is achieved by the features in the characterising part of claim 1.

[0009] In the floor mat according to the invention the lateral extension of the coupling groove is little more than half of that of a comparable cylindrical coupling groove. The groove for the wiper material on the upper surface of the rail can therefore extend close to the lateral boundary of the upper surface.

[0010] The rails can be used with different connecting profiles such that different kinds of floor mats can be built from rails of the same type and the characteristics of a single floor mat varied over its extension by the use of different connecting profiles alone. In particular, a lower limit angle limiting the angle between the upper surfaces of neighbouring rails can be determined by an appropriate choice of connecting profile, allowing a stiff connection, i.e., a lower limit angle of 180°, as well as a variety of smaller lower limit angles of, e.g., between 170° and 120° which makes it possible to roll up the floor mat into a coil of larger or smaller diameter for easier removal, transport and storage with upper surfaces of the rails, which usually carry wiper material, on the inside.

[0011] Both the rails and the connecting profiles can be produced in a simple and cost-effective way, preferably by extrusion.

Brief description of the drawings

[0012] In the following the invention will be explained in more detail with reference to the following figures which show only an embodiment.

Fig. 1 shows part of a top view of a floor mat according to the invention,

Fig. 2 shows a front view of the part of the floor mat shown in Fig. 1,

Fig. 3 shows enlarged a section cutting through parts of two neighbouring rails and a first connecting profile, along III-III in Fig. 1,

Fig. 3a shows part of the connecting profile of Fig. 3,

Fig. 3b shows the part of one of the rails shown in Fig.

3,

Fig. 4 shows enlarged a section cutting through parts of two neighbouring rails and a second connecting profile, along IV-IV in Fig. 1,

Fig. 4a shows part of the connecting profile of Fig. 4,

Fig. 5 shows the parts of the neighbouring rails and the connecting profile of Fig. 4, with the neighbouring rails rotated against the connecting profile,

Fig. 6 shows a first fixing clip of the floor mat of Fig. 1 and Fig. 2, and

Fig: 7 shows a second fixing clip of the floor mat of Fig. 1 and Fig. 2.

Description of the preferred embodiments

[0013] The floor mat shown in the figures, in particular, in Fig. 1 and Fig. 2, comprises a plurality of parallel rigid rails 1 arranged side by side, where each rail is a metal profile of constant cross section produced by extrusion. Preferably, the metal is aluminium. Each rail provides a rectangular upper surface extending in a longitudinal direction and a lateral direction perpendicular thereto. The length of a rail 1 is usually between 0.5 and 2 meters, its breadth a few centimetres, normally between 2cm and 10cm. Each rail 1 comprises two side bars 2 of roughly rectangular cross section with upper surfaces forming margin strips 3 which in use are essentially horizontally oriented, facing upwards. They are connected by a recessed web 4 which forms the bottom of a groove 5 laterally bounded by the side bars 2. In the groove 5 a strip of wiper material 6 or similar, e.g., some friction-reducing material like rubber, is anchored which covers the greater part of an upper surface of the rail 1 and is flanked by the narrower margin strips 3 of the rail 1 where the material of the latter lies bare and is visible.

[0014] Two neighbouring rails 1 are in each case connected by a longitudinal connecting profile 7a or 7b. Each of the connecting profiles 7a, 7b has essentially constant cross section and usually consists of plastic material, preferably a polymer or a mixture of polymers, and has also preferably been produced by extrusion, possibly followed by additional production steps. Figs. 1, 2 show only part of a floor mat with rails 1 and connecting profiles 7a, 7b. Whereas the rails 1 are of the same design the connecting profiles 7a, 7b belong to different types. Usually a single connecting profile 7a, 7b which is only slightly shorter than the rails 1 is used in each case but a sequence of shorter connecting profiles which follow, separated or not by gaps, upon each other in the longitudinal direction may be employed as well.

[0015] Each side bar 2 is laterally bounded on an outside by a plane lateral face 8 which is perpendicular to the upper surface, i.e., vertical during use, and is interrupted by a coupling slot 9 which widens into a broader coupling groove 10 provided in the interior of the side bar 2. The connecting profile 7a or 7b comprises two coupling rods 11, 11' (Figs. 3, 4) of corresponding cross sections each of which is accommodated in one of the coupling grooves 10, 10' of two neighbouring rails 1, 1' and which are connected through the coupling slot 9 of rail 1 and the opposite coupling slot of rail 1'.

[0016] The connecting profiles 7a, 7b are (Figs. 1, 2) fixed in the coupling grooves 10 by fixing clips 12a, 12b which have been inserted into them and are arranged, e.g., between first ends of the coupling grooves 10 and an end of the connecting profile 7a; 7b, preventing the latter from escaping from the coupling grooves 10 at the first ends thereof. Such fixing clips can also be used in other sections of the coupling grooves 10 for fixing shorter connecting profiles of, e.g., a length of 5cm, at desired positions, preventing them from being displaced in the longitudinal direction. For instance, the connecting profiles can be arranged in such a way that they are separated by gaps in the longitudinal direction and that the profiles and gaps are aligned in the lateral direction and kept in their positions by fixing clips.

[0017] In the connecting profile 7a which exemplifies a first type of connecting profile the coupling rods 11, 11' (Figs. 3, 3a, 3b) are directly connected. The coupling rod 11 exhibits, on the side facing the coupling slot 9, a cylindrical convex circumferential surface 13 which is interrupted by a strip where the coupling rod 11 is joined to the other coupling rod 11'. Opposite the said strip is a concave rear surface comprising a first stop surface 14 which is plane and extends from an upper edge of the convex circumferential surface to a cylinder axis 15 and an equally plane second stop surface 16 which extends from a lower edge of the convex circumferential surface 13 to the cylinder axis 15. The first stop surface 14 and the second stop surface 16 include a stop surface angle α which is greater than 180°, in the example close to 195°. The coupling rod 11 has essentially the shape of a cylinder sector with an opening angle equal to the stop surface angle α. The second coupling rod 11' is of the same shape, its cross section being a mirror image of the cross section of the first coupling rod 11.

[0018] The coupling rod 11 is accommodated in a coupling groove 10 of the rail 1 and the coupling rod 11' in a coupling groove 10' of the neighbouring rail 1'. The coupling groove 10 is bounded, on the side of the lateral face 8, by a cylindrical concave circumferential surface 17 which is interrupted by the coupling slot 9. On the opposite side it is bounded by a bottom surface which comprises a first limit surface 18 which extends from an upper edge of the convex circumferential surface 17 almost to the cylinder axis 15 and a second limit surface 19 which extends from a lower edge of the convex circumferential surface 17 almost to the cylinder axis 15. The second limit surface 19 is parallel to the lateral face 8 of the side bar 2 whereas the first limit surface is inclined

with respect to the same, the first limit surface 18 and the second limit surface 19 including a limit surface angle β of 195°. The first limit surface 18 and the second limit surface 19 are separated by a narrow flute 20.

[0019] The concave circumferential surface 17 bounding the coupling groove 9 and the convex circumferential surface 13 of the coupling rod 11 are coaxial, with the common axis being the cylinder axis 15. The radius of the convex circumferential surface 17 is only slightly smaller than the radius of the concave circumferential surface 13 such that it abuts on the latter.

[0020] As in this case the stop surface angle α is equal to the limit surface angle β or nearly so, the coupling rod 11 fills the coupling groove 10 virtually completely, the first stop surface 14 abutting on the first limit surface 18 and the second stop surface 16 equally abutting on the second limit surface 19. The position of the connecting profile 7a with respect to each of the rails 1, 1' is therefore fixed with no rotation about the cylinder axes 15, 15' and practically no play in other directions being possible. The side bars 2, 2' of the neighbouring rails 1, 1' are fixed in a relative position where their upper surfaces are coplanar, i.e., include an angle of 180°. Forces acting between the connecting profile 7a and the rail 1 or the rail 1' are distributed over rather large surfaces and mechanical strain remains modest. This is aided by the lateral face 8 of the side bar 2 abutting on the opposite lateral face of the side bar 2'. The connecting profile 7a is very robust and the connection between the neighbouring rails 1, 1' can therefore withstand large forces and momenta.

[0021] The second connecting profile 7b is (s. Figs. 4, 4a) similar to the first connecting profile 7a, comprising coupling rods 11, 11' which, however, are at a distance from each other, connected by a web 21. The web 21 is joined to the coupling rod 11 along a strip which interrupts the concave circumferential surface 13 and to the coupling rod 11' in the same manner, the cross section of coupling rod 11' again being a mirror image of the cross section of coupling rod 11. A sequence of oval openings 22 is spaced along the web 21 in the longitudinal direction which openings connect an upper surface of the same with a lower surface, allowing dirt to fall through which is thereby removed from the surface of the floor mat. Connecting profiles with webs of different breadths can, of course, be used, depending on preferences.

[0022] Another difference lies in the fact that the rear surface is plane, with the first stop surface 14 of the connecting profile 7b being coplanar with the second stop surface 16, i.e., the stop surface angle α is 180°, that is, smaller than the limit surface angle β of 195°. This allows a rotation of the coupling rod 10 with respect to the rail 1 by 15° between a first position (Fig. 4) where the second stop surface 16 abuts on the second limit surface 19 of the rail 1, the said surfaces forming a first stop which defines a lower limit of 180° for the angle between the upper surface of the rail 1 and the web 21, and a second position (Fig. 5) where the first stop surface 14 abuts on the first limit surface 18, the surfaces forming a stop which defines a lower limit for the angle between the upper surface of the rail 1 and the web 21.

[0023] The connecting profile 7b is therefore, with respect to each of the neighbouring rails 1, 1' it connects, rotatable about the respective cylinder axis 15; 15' by the difference between the limit surface angle β and the stop surface angle α without allowing other relative motion apart from very limited play. If both rails 1, 1' assume the first position with respect to the connecting profile 7b the angle between the upper surfaces of the neighbouring rails 1, 1' equals an upper limit angle of 180°. Larger angles are not possible. This position is normally assumed when the floor mat is in use. Due to this limitation of the angle between the upper surfaces of the neighbouring rails 1, 1' buckling of the floor mat is not possible. In the second position the angle between the upper surfaces of the neighbouring rails 1, 1' equals a lower limit angle of γ=180° - 2 (β-α). Angles which are smaller than 180° allow the floor mat to be rolled up into a coil, with the upper surfaces of the rails, which carry the wiper material, on the inside, for removal, transport and storage. The coupling slot 9 has a width sufficient to allow a corresponding motion of the web 21.

[0024] The lower limit angle γ can be varied according to the specific needs by an appropriate choice of the inclination of the first stop surface. A preferred range is 120° to 170°. The upper limit angle can differ from 180°, in particular, can be slightly larger, or can remain undefined where buckling of the floor mat is not to be apprehended.

[0025] Even with a large limit surface angle of 210° which, if used with the connecting profile 7b, would in principle allow a lower limit angle of 120°, the lateral extension of the groove would still be rather small, in the example about 1.5 times the distance between the cylinder axis 15 and the concave circumferential surface 17, i.e., the radius of the latter, even where the second limit surface is parallel to the lateral face. With a symmetrical coupling groove the lateral extension of the same could be even smaller. In any case, the lateral extension of the side bars 2 can be kept small and the margin strips 3 correspondingly narrow as is usually desired.

[0026] It is entirely possible to assemble a floor mat which can be rolled up from different types of rails and connecting profiles where some of the connections between neighbouring rails allow a lower limit angle γ of less than 180° - as the connection by connecting profile 7b in the example of Fig. 4 and Fig. 5 - and some do not - as the connection by connecting profile 7a in the example of Fig. 3. Depending on the cross sections of the connecting profile and of the neighbouring rails which are connected by it it is possible that the angle between the upper surfaces of two neighbouring rails is not limited from below by the lower limit angle γ, i.e., by the stop formed by the first stop surfaces 14 and the first limit surfaces 18 but by contact between the lateral faces of the rails instead.

[0027] The breadth of the fixing clip depends on that

of the connecting profile used. A fixing clip 12a for use with the first connecting profile 7a is shown in Fig. 6. Preferably it consists of an elastic wire, e.g., a steel wire, and has a first straight leg 23 and a second straight leg 24 which enclose an acute angle and are connected by an arcuate section 25. In a relaxed position the distance between the ends of the legs 23, 24 is somewhat larger than the distance between the cylinder axes 15, 15'. When the fixing clip 12a is inserted into the coupling grooves 10 it is compressed in that the angle between the legs 23, 24 is reduced due to elastic deformation of the fixing clip 12a, in particular, of its arcuate section 25. The ends of the legs 23, 24 are accommodated in the flutes 20 provided in the bottom surfaces of the coupling grooves 10 such that their positions are essentially fixed. The arcuate section 25 may also extend into the flutes 20 whereby rotation of the fixing clip 12a is reliably prevented.

[0028] A fixing clip 12b for use with the second connecting profile 7b is shown in Fig. 7. Apart from a broader arcuate section 25 which includes a straight portion it has the same constitution as the fixing clip 12a.

[0029] A floor mat consisting of rails, connecting profiles and fixing clips as described can easily be assembled on the spot with no special tools being required by longitudinally inserting the coupling rods of connecting profiles into the coupling grooves of neighbouring rails and fixing them against longitudinal displacement by inserting fixing clips. Disassembling the floor mat is just as easy and does not require special tools either.

List of reference symbols

[0030]

1, 1'	rail
2	bar
3	margin strip
4	web
5	groove
6	wiper material
7a,b	connecting profile
8	lateral face
9	coupling slot
10, 10'	coupling groove
11, 11'	coupling rod
12a,b	fixing clip
13	convex circumferential surface
14	first stop surface
15, 15'	cylinder axis
16	second stop surface
17	concave circumferential surface
18	first limit surface
19	second limit surface
20	flute
21	web
22	opening
23	first leg
24	second leg
25	arcuate section

Claims

1. Floor mat comprising

- a plurality of parallel rigid rails (1, 1') arranged side by side, each having an upper surface extending in a longitudinal direction and in a lateral direction perpendicular thereto, and lateral faces (8), each of them interrupted by a longitudinal coupling slot (9) connecting the lateral face (8) with a wider coupling groove (10, 10') extending with a constant cross section from a first end of the rail (1, 1') in the longitudinal direction,
- between two neighbouring rails (1, 1') in each case a rigid connecting profile (7a, 7b) with two parallel laterally connected coupling rods (11, 11'), where each coupling rod (11, 11') is accommodated in one of the coupling grooves (10; 10') of one of the neighbouring rails (1; 1') and the coupling rods (11, 11') are connected through the coupling slots (9), **characterised in that**
- each coupling rod (11) exhibits a cylindrical convex circumferential surface (13) and a rear surface facing away from the convex circumferential surface (13),
- the coupling groove (10) is in each case, at the side of the lateral face (8), bounded by a cylindrical concave circumferential surface (17) interrupted by the coupling slot (9) and coaxial about a common cylinder axis (15) with the con-

vex circumferential surface (13) and on which the latter abuts, and, opposite to the concave circumferential surface (17), by a bottom surface such that the lateral extension of the coupling groove (10) does not exceed 1.5 times the distance between the cylinder axis (15) and the concave circumferential surface (17).

2. Floor mat according to claim 1, **characterised in that**

- the rear surface of each coupling rod (11) comprises a first stop (14) surface and a second stop surface (16),
the bottom surface of each coupling groove (10) comprises a first limit surface (18) capable of interacting with the first stop surface (14) so as to define a lower limit to the angle between the upper surface of the rail (1, 1') and the connecting profile (7a, 7b) in such a way that the angle between the upper surfaces of the neighbouring rails (1, 1') connected by the connecting profile (7a; 7b) is bounded from below by a lower limit angle (γ) which is 180° or smaller, and
- the bottom surface of each coupling groove (10) further comprises a second limit surface (19) capable of interacting with the second stop surface (16) so as to define an upper limit to the angle between the upper surface of the rail (1, 1') and the connecting profile (7a, 7b) in such a way that the angle between the upper surfaces of neighbouring rails (1, 1') connected by the connecting profile (7a, 7b) is bounded from above by an upper limit angle of 180°.

3. Floor mat according to claim 1 or 2, **characterised in that** for at least part of the coupling profiles (7a) the lower limit angle (γ) is 180°.

4. Floor mat according to one of claims 1 to 3, **characterised in that** for at least part of the coupling profiles (7b) the lower limit angle (γ) is smaller than 180°.

5. Floor mat according to claims 4, **characterised in that** for at least part of the coupling profiles (7b) the lower limit angle (γ) is not greater than 170°.

6. Floor mat according to one of claims 2 to 5, **characterised in that** the first limit surface (18) extends from the concave circumferential surface (17) inward toward the cylinder axis (15).

7. Floor mat according to one of claims 2 to 6, **characterised in that** the second limit surface (18) extends from the concave circumferential surface (17) inward toward the cylinder axis (15).

8. Floor mat according to claims 6 and 7, **characterised in that**

- each coupling rod (10) has the shape of a cylinder sector, delimited by the the convex circumferential surface (13) and the first stop surface (14) and the second stop surface (16), each a plane surface radially extending from the convex circumferential surface (13) towards the cylinder axis (15), the first stop surface (14) and the second stop surface (16) enclosing a stop surface angle (α) and
- each coupling groove (10) has the shape of a cylinder sector, delimited by the the concave circumferential surface (17) and the first limit surface (18) and the second limit surface (19), each a plane surface radially extending from the concave circumferential surface (17) towards the cylinder axis (15), the first limit surface (18) and the second limit surface (19) enclosing a limit surface angle (β).

9. Floor mat according to claim 8, **characterised in that** the limit surface angle (β) is between 180° and 210°.

10. Floor mat according to claim 3 and claim 8 or 9, **characterised in that** in at least part of the coupling profiles (7a) the stop surface angle (α) is equal to the limit surface angle (β), the coupling rod (11) filling the coupling groove (10) essentially completely in each case.

11. Floor mat according to claim 4 or 5 and one of claims 8 to 10, **characterised in that** in at least part of the coupling profiles (7b) the stop surface angle (α) is smaller than the limit surface angle (β) and the coupling rods (11, 11') are connected by a web (21) extending through the coupling slots (9) of the neighbouring rails (1, 1') in such a way that the web (21) has sufficient lateral play in the coupling slots (9) of the neighbouring rails (1, 1') to allow the first stop surface (14) to contact the first limit surface (18) and the second stop surface (16) to contact the second limit surface (19) in each case.

12. Floor mat according to claim 11, **characterised in that** the web (21) exhibits a sequence of openings (22) each connecting a top surface of the web (21) situated between the upper surfaces of the neighbouring rails (1, 1') with a bottom surface of the web (21).

13. Floor mat according to one of claims 1 to 12, **characterised in that** each coupling groove (10) and each coupling rod (11) has constant cross section.

14. Floor mat according to one of claims 1 to 13, **characterised in that** each coupling groove (10) extends

from the first end of the rail (1) to an opposite second end of the rail (1).

15. Floor mat according to one of claims 1 to 14, **characterised in that** the rails (1) consist of aluminium and the connecting profiles (7a, 7b) consist of plastic.

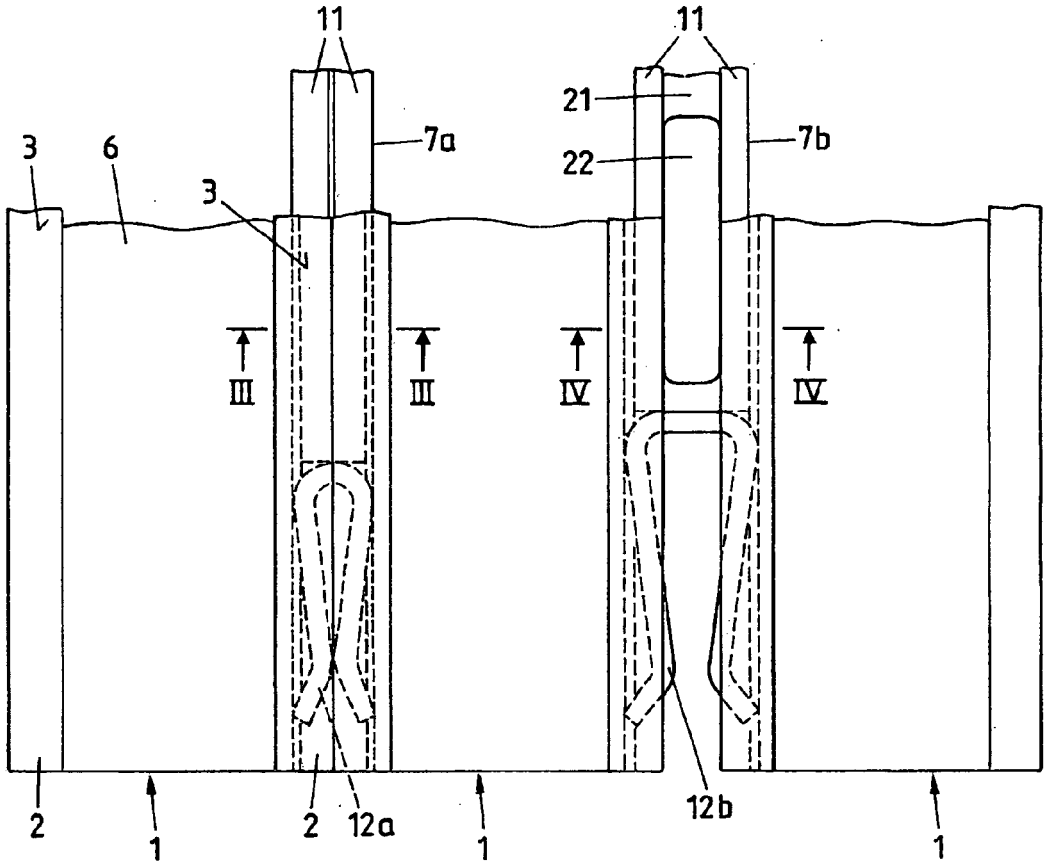
16. Floor mat according to one of claims 1 to 15, **characterised in that** with at least part of the rails (1) the upper surface carries a strip of wiper material (6) or of friction-enhancing material.

17. Floor mat according to one of claims 1 to 16, **characterised in that** it comprises at least one elastic fixing clip (12a, 12b) frictionally fixed to at least one rail (1, 1') and extending through a coupling groove (10, 10') of the said rail between the first end of the rail (1, 1') and a coupling rod (11, 11') of a connecting profile which is accommodated in the coupling groove (10; 10'), the fixing clip (12a, 12b) blocking the coupling rod (11, 11') in the coupling groove (10; 10') at the side of the first end.

18. Floor mat according to claim 17, **characterised in that** the fixing clip (12a, 12b) extends through the coupling slots (9) of two neighbouring rails (1, 1') into coupling grooves (10; 10') of the same, pressing against the opposite bottom surfaces of the coupling grooves (10, 10').

19. Floor mat according to claim 18, **characterised in that** the fixing clip (12a, 12b) extends in each case into flutes (20) provided in the bottom surfaces.

20. Floor mat according to one of claims 17 to 19, **characterised in that** the fixing clip (12a, 12b) consists of metal and comprises a first leg (23) and a second leg (24) which press against the bottom surfaces, the first leg (23) and the second leg (24) being connected by an arcuate section (25) and enclosing an acute angle which can be reduced by elastic deformation of the said arcuate section (25).


11
11
21
22
7a
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III
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Fig. 1

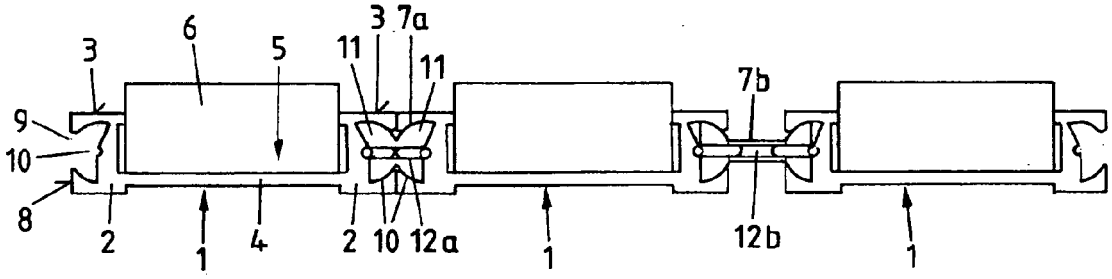
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Fig. 2

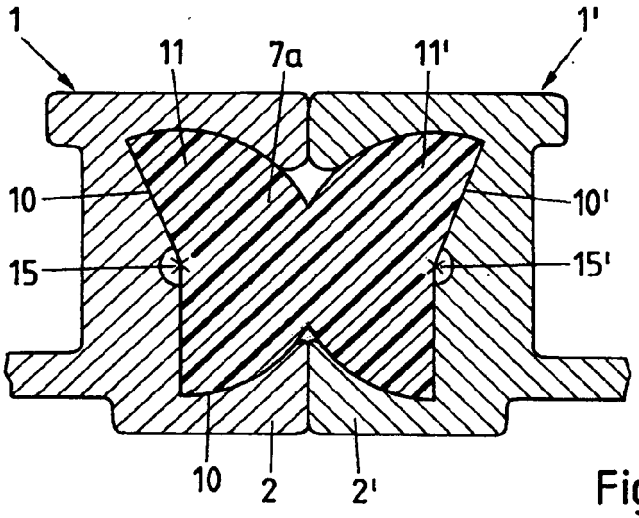

Fig. 3

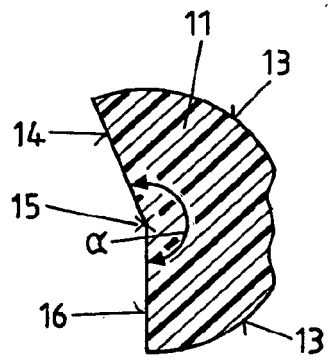

Fig. 3a

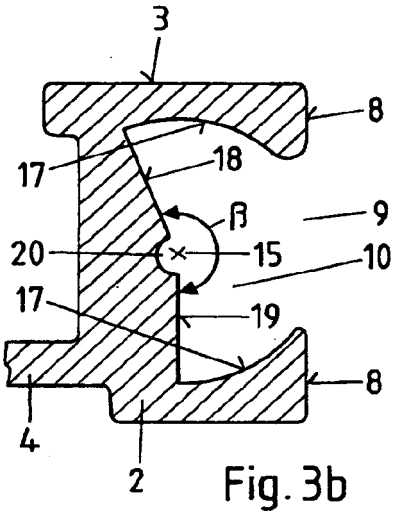

Fig. 3b

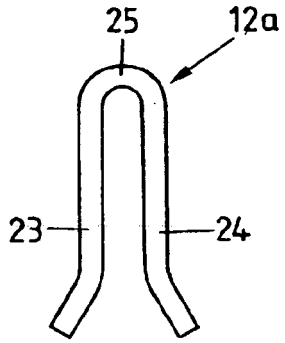

Fig. 6

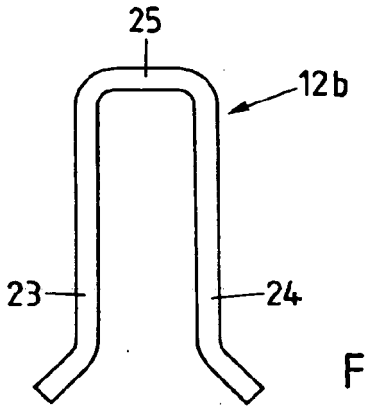

Fig. 7

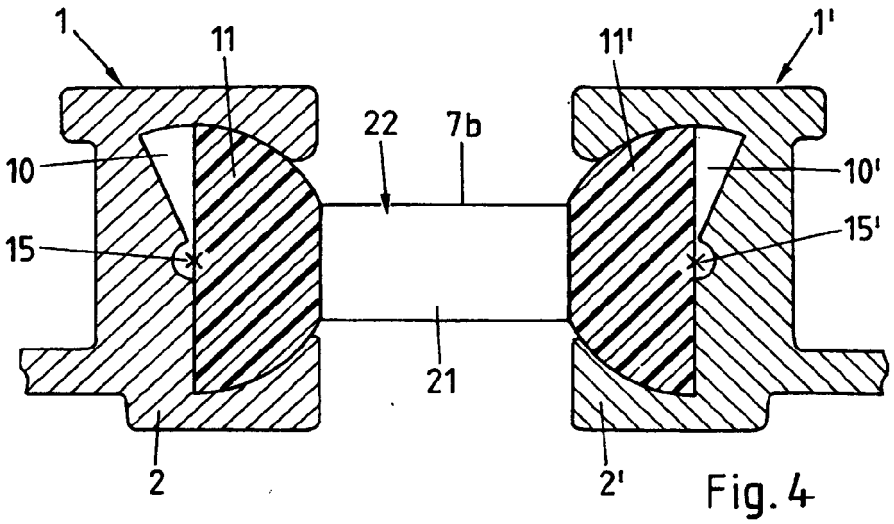

Fig. 4

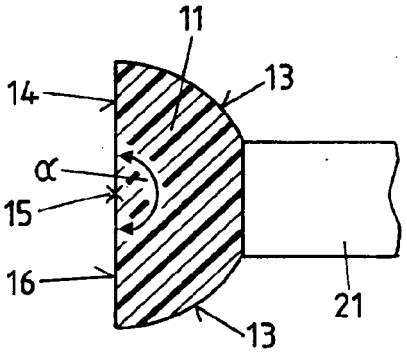

Fig. 4a

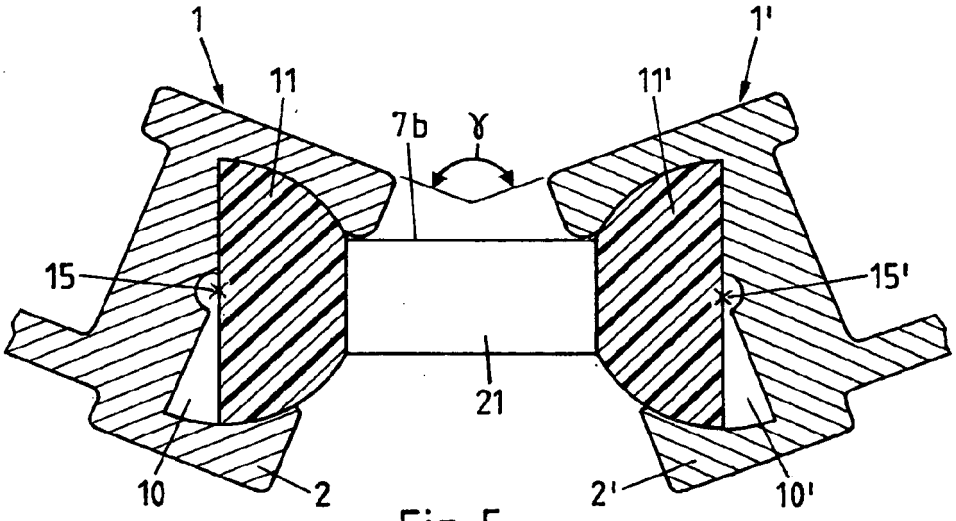

Fig. 5

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EUROPEAN SEARCH REPORT

Application Number
EP 11 40 5369

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	10 May 2012	Masset, Markus

CATEGORY OF CITED DOCUMENTS

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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