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(12) # EUROPEAN PATENT SPECIFICATION

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(73) Proprietor: **NORTON ENGINEERING ALLOYS COMPANY LIMITED**
Norton Grove Industrial Estate
Norton Malton Yorkshire YO17 9HQ (GB)

(72) Inventor: **Parsons, Jack**
4 Westfield Park
Elloughton Brough Hull (GB)

(74) Representative: **Houghton, David et al**
Hulse & Co. Cavendish Buildings West Street
Sheffield, S1 1ZZ (GB)

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Description

This invention relates to floor coverings of the type suitable for installation in entrances, hallways, lobbies, etc. of hotels, public buildings, office blocks, shops and other places likely to have a large volume of pedestrian traffic.

In any building likely to have a large volume of pedestrian traffic, it is advantageous to provide in the entrance a mat or grille across which the pedestrian must walk such that any dirt or debris adhering to the shoes of the pedestrian is substantially removed before the pedestrian reaches the interior of the building itself. This can reduce considerably the amount of dirt and the like deposited on the floor of the building itself. However with a conventional rubber or carpet-like mat, heavy wear takes place requiring the frequent replacement of the mat. In an attempt to avoid frequent replacement of all of a carpet-like mat, constructions are known comprising interconnected members each of which receive a strip or insert of carpet or rubber. Thus, for example in DE—C—668656, a number of channel-shaped members are provided in which a carpet strip is inserted, with adjacent members secured together by a metal clip, and in DE—U—6930293 again a number of channel shaped members are provided in which a carpet strip is inserted, with adjacent members being located in spaced relationship in a profiled support bar. There are other constructions such as in DE—A—2811408 where a number of tread bars are provided, interconnected by connecting members of varying degree of complexity of cross-section, to provide adequate strength. Such constructions frequently have the disadvantage of cost not only of the members themselves but also by using carpet strips of non-standard depths. In addition they feature sometimes the same disadvantage as a conventional metal grille in that they cannot readily compensate for any unevenness in the floor on which they are laid, and any unevenness in the floor surface on which they are placed leads to the floor covering moving as a pedestrian walks across it, causing noise and wear on both the covering and the floor.

The object of the present invention is to provide a floor covering that can serve as a mat or grille and which avoids the known disadvantages of both mats and grilles.

According to the present invention a floor covering comprises a number of rigid longitudinal members with adjacent members held in spaced relationship by a longitudinal linking member and is characterised in that each longitudinal linking member is separately formed from the rigid members and fit into a groove formed in the longitudinal edge of a respective rigid member, the flexible linking member being formed from a generally rectangular length of flexible rubber with a series of spaces or through slots for the passage of debris or formed as a generally L-shaped member, the long side of which constitutes a rib to engage in the recess in one rigid member and the short side of which acts as an interconnecting flange and has a short rib to engage in the recess of the adjacent member to create a space for the passage of debris, being such as to allow one rigid member to lie at a higher or lower plane with respect to an adjacent rigid member and thereby compensate for any unevenness over the floor area on which the covering is laid. Thus the longitudinal members may be formed from a suitable metal such as aluminium alloy and when the floor covering of the invention has the durability of known metal grilles. With the rigid longitudinal members being held together by flexible members, the floor covering has sufficient flexibility to allow it to accommodate any unevenness on the floor on which the floor covering is laid and when the floor covering of the invention retains the advantage of conventional rubber and the like matting.

Preferably each rigid longitudinal member is formed as an extrusion and has an upper profiled surface to enable it to accept one or more tread inserts of, e.g., rubber or standard carpet material, or profiled to form a scraper bar it being further preferred that the lower surface of that member is also profiled to accept one or more inserts to act as a foot or cushion between the underside of the floor covering of the invention and the floor on which it rests.

By utilising a number of the rectangular or L-shaped flexible members, not only are adjacent rigid members flexibly held in correct spaced relationship but also gaps are provided between adjacent members through which dirt, debris and the like can fall. When the longitudinal members are formed to receive more than one tread insert, through-slots may be formed between the profiled sections adapted to receive the tread inserts.

There are various further possible alternatives and modifications within the invention. Thus, instead of utilising rubber or carpet tread inserts across the full width of the floor covering of the invention it is possible to provide some of the members with rubber inserts and the remainder with carpet inserts such that the part of the floor covering adjacent the street is utilised to remove the worst of the wet or dirt before the pedestrian steps on to the carpet tread insert section to give a final cleaning to the shoes. It would be further possible to provide in place of some of the rubber or the like inserts, a metal insert having a profiled top surface designed to act as a boot or shoe scraper.

Normally a floor covering of the invention will be placed within a conventional mat or grille well and when the plane of the upper surface of the floor covering would coincide with that of the interior of the floor of the building. If however no such well is provided, then the floor covering of the invention can at one or both ends be provided with a lead-in/lead-out ramp formed from, e.g., rubber or the like connected by a flange extending from the ramp terminating in a rib engaging in the uppermost recess in the longitudinal members.

Several embodiments of the invention will now

be described with reference to the accompanying drawings, in which:—

Figure 1 is a plan view of part of a floor covering longitudinal member according to the invention;

Figure 2 is a section on the line II—II of Figure 1, showing in addition the flexible connection to an adjacent longitudinal member;

Figure 3 is a sectional perspective view of part of the flexible connecting member of Figure 2;

Figure 4 is a perspective view of part of an alternative floor covering according to the invention;

Figure 5 is a perspective view of an alternative form of flexible connecting member; and

Figure 6 is a perspective view of part of a lead-in/lead-out section for use in conjunction with the floor covering of the invention.

In Figures 1 to 3, floor covering to serve as a mat or grille for use at, e.g., the entrance to a building has a number of longitudinal members 1 formed as an extrusion from a suitable aluminium alloy. Each longitudinal section is formed with an upper profiled surface having pairs of channel forming members 2 to receive tread inserts 3. The longitudinal sections, between the adjacent members 2 of adjacent pairs are formed with longitudinal, spaced, through holes 4 for the passage of water and/or dirt. On the undersurface, each longitudinal member is formed with a number of feet 5, and to each side with outwardly facing recess-forming members 6.

Adjacent longitudinal sections 1 are connected by flexible connecting members 7, which, as is shown particularly by Figure 3 are generally rectangular and formed with longitudinal ribs 8 for engagement in the recesses of adjacent members 6.

The tread inserts 3 can be formed from a hard wearing rubber or rubber-like compound, or they can be formed from carpet material. Yet again, selected channel forming members can be provided with metal inserts with a profiled top surface designed to act as a boot or shoe scraper. Thus, a hybrid structure can usefully be provided, where a number of longitudinal sections 1 can be provided, flexibly connected by the members 7, the channels immediately adjacent the door opening having metal scraper inserts, followed by rubber inserts to remove further dirt and moisture, and terminating in sections with carpet inserts to match adjacent carpeting and to effect a final cleaning of the soles of boots or shoes.

When the floor covering is in a well adjacent a door opening, the feet 5 hold the operative surface of the floor covering at approximately the height of the adjacent floor. If, however, no well is present, it is preferred to provide a lead-in/lead-out section such as shown in Figure 6. Thus, a tapered member 9 is provided having a longitudinal rib 10 to fit the recess of the outermost recess forming member 6.

In the alternative construction shown in Figures 4 and 5, a number of longitudinal sections 11 are provided, each having a profiled upper surface to receive a single tread insert 12, adjacent sections 11 being flexibly secured together by a flexible member 13. Each flexible member may be of the form shown in Figure 3, but to provide gaps to allow the passage of water and/or dirt, adjacent longitudinal sections 11 can be secured together by a number of flexible members 13, each of which is, as is shown by Figure 5, formed as a generally L-shaped piece the longside forming a rib 14 to fit a recess 15 formed on the underside of the member and the short side forming a connecting section 16 and terminating in a rib 17 to fit a recess 18 formed on the adjacent longitudinal section.

Whether provided in a well, or free standing, the floor covering of the invention can be cushioned to reduce noise and wear. Thus, as is shown in Figure 4, the underside of the member can be formed with recesses 19 to receive rubber or rubber-like inserts 20 by which the longitudinal sections 11 rest on the floor. Obviously, the longitudinal sections 1 of Figures 1 to 3 can have such recess and rubber or rubber-like inserts formed in the feet 5. Alternatively, the feet 5 can be surrounded by a rubber or rubber-like material.

As a still further alternative, not shown, an individual longitudinal section 11 or part of the longitudinal section 1 can be formed with an integral scraper bar.

Claims

1. A floor covering comprising a number of rigid longitudinal members with adjacent members held in spaced relationship by a longitudinal linking member, characterised in that each longitudinal linking member (7, 16) is separately formed from the rigid members (1) and fits into a groove formed in the longitudinal edge of a respective rigid member (1), the flexible linking member (7) being formed from a generally rectangular length of flexible rubber with a series of spaces or through slots for the passage of debris, or formed as a generally L-shaped member (13), the long side (14) of which constitutes a rib to engage in the recess in one rigid member and the short side (16) of which acts as an interconnecting flange and has a short rib to engage in the recess of the adjacent member to create a space for the passage of debris being such as to allow one rigid member to lie at a higher or lower plane with respect to an adjacent rigid member and thereby compensate for any unevenness over the floor area on which the covering is laid.

2. A floor covering as in Claim 1, characterised in that each longitudinal member (1) has an upper (in use) profiled surface (2) for the acceptance of at least two tread inserts (3) formed from standard carpet material, the space between adjacent profiled sections being provided with a series of through-slots (4) for the passage of debris.

Patentansprüche

1. Fußboden-Abdeckung mit einer Mehrzahl von starren Längselementen, wobei benachbarte

Längselemente durch einen Längsverbinder auf Abstand voneinander gehalten sind, dadurch gekennzeichnet, daß jeder Längsverbinder (7, 16) als von den starren Längselementen (1) getrenntes Bauteil ausgebildet ist, welches in eine am Längsrand des jeweiligen starren Längselementes (1) ausgebildete Nut einfaßt, und daß der flexible Längsverbinder (7) entweder von einem im allgemeinen rechtwinkligen Längsabschnitt aus flexiblem Gummi mit einer Reihe von Durchbrechungen oder Durchlaßschlitzen für den Schmutzdurchgang oder von einem im allgemeinen L-förmigen Teil (13) geformt ist, dessen langer Abschnitt (14) eine Rippe zum Einfassen in die Vertiefung im einen starren Längselement bildet und dessen kurzer Abschnitt als Verbindungsflansch wirkt sowie eine kurze Rippe zum Einfassen in die Vertiefung des benachbarten Längselementes aufweist, um einen Durchlaß für den Schmutzdurchgang zu schaffen, so daß ein starres Längselement bezogen auf ein benachbartes starres Längselement in einer höheren oder niedrigeren Ebene liegen und dadurch jegliche Unebenheit in der mit der Abdeckung belegten Fußbodenfläche ausgleichen kann.

2. Fußboden-Abdeckung nach Anspruch 1, dadurch gekennzeichnet, daß jedes Längselement (1) eine obere (bei Gebrauch) profilierte Fläche (2) für die Aufnahme wenigstens zweier Tritteinsätze (3) aus Standard-Teppichmaterial aufweist und der Zwischenraum zwischen benachbarten profilierten Bereichen mit einer Reihe von Durchlaßschlitzen für den Schmutzdurchgang versehen ist.

Revendications

1. Revêtement de sol comprenant un certain nombre d'éléments longitudinaux rigides avec des éléments adjacents maintenus dans un rapport spacial par un élément de liaison longitudinal, caractérisé en ce que chaque élément de liaison longitudinal (7, 16) est construit séparément des éléments rigides (1) et s'ajuste dans une gorge (15) formée sur le côté longitudinal de l'élément rigide (1) correspondant, l'élément de liaison souple (7) étant formé d'une longueur de forme générale rectangulaire de caout-chouc souple avec une série d'espaces ou de trous traversants (4) pour le passage des débris, ou étant constitué par un élément ayant la forme générale d'un L (13), dont le côté allongé (14) constitue un renflement qui s'engage dans l'évidement (15) d'un élément rigide et dont le côté court (16) fonctionne comme une barrette de liaison et présente une petit renflement (17) pour s'engager dans l'encoche du membre adjacent et créer un espace pour le passage des débris, et étant tel qu'il permette à un élément rigide de s'étendre sur un niveau plus haut ou plus bas par rapport à un membre rigide adjacent et de compenser ainsi les inégalités éventuelles du sol sur lequel est posé le revêtement.

2. Revêtement de sol selon la revendication 1, caractérisé en ce que chaque élément longitudinal (1) a une surface supérieure (en service) profilée (2) pour recevoir au moins deux garnitures (3) formées à partir d'un matériau de revêtement standard, l'espace entre les parties profilées adjacentes étant pourvu d'une série de fentes traversantes (4) pour le passage des débris.

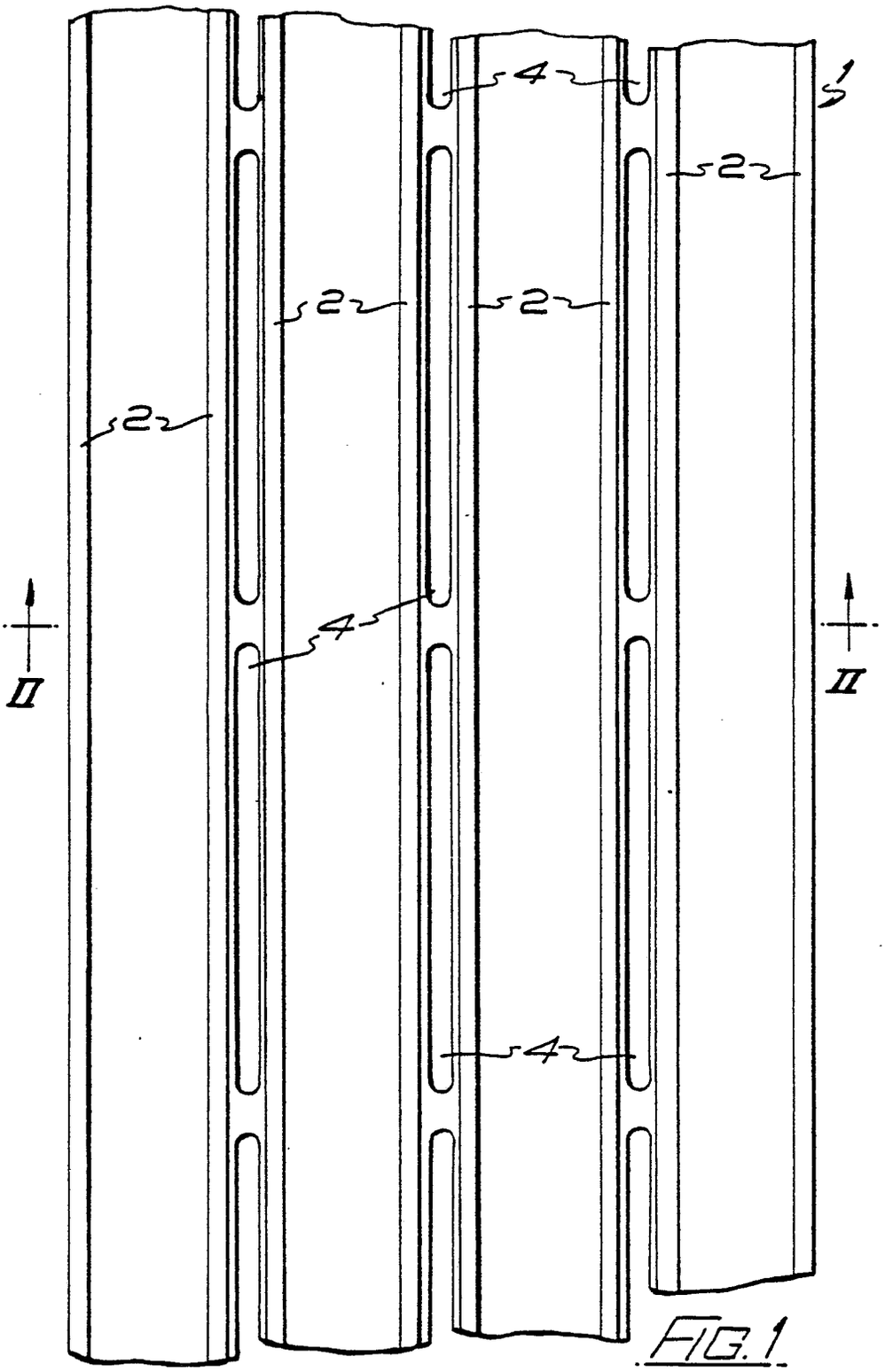

FIG. 1

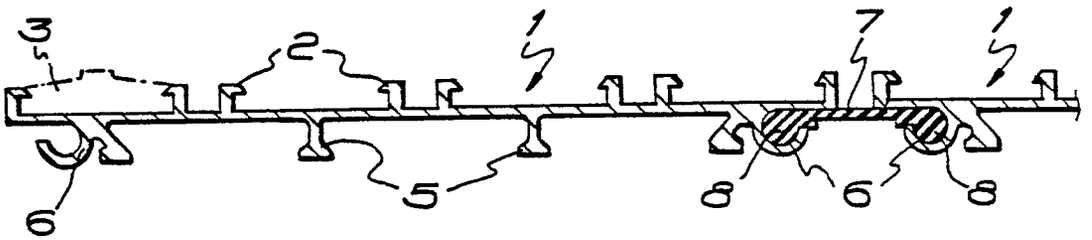

FIG. 2

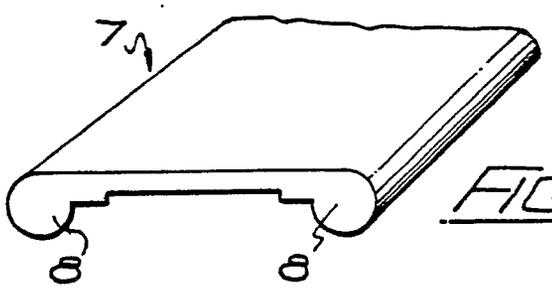

FIG. 3

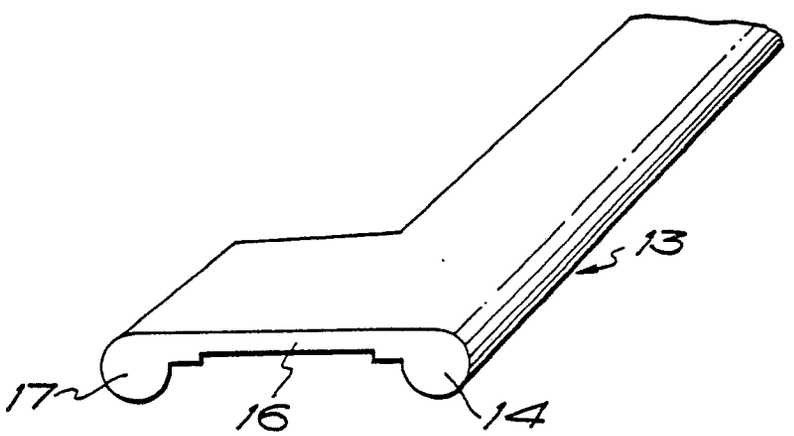

FIG. 5

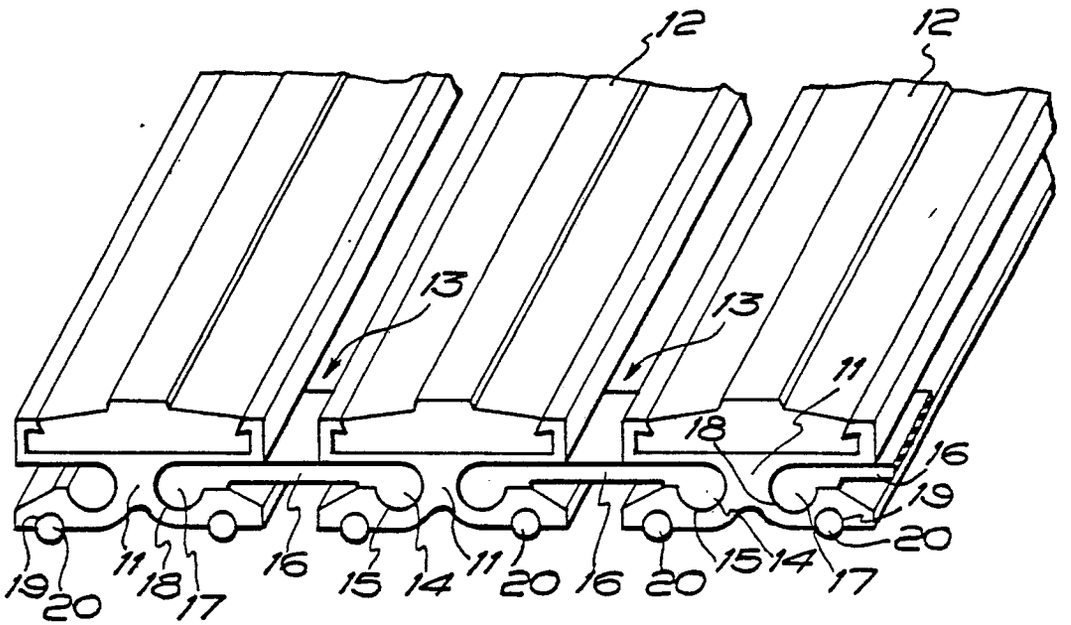
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FIG. 4

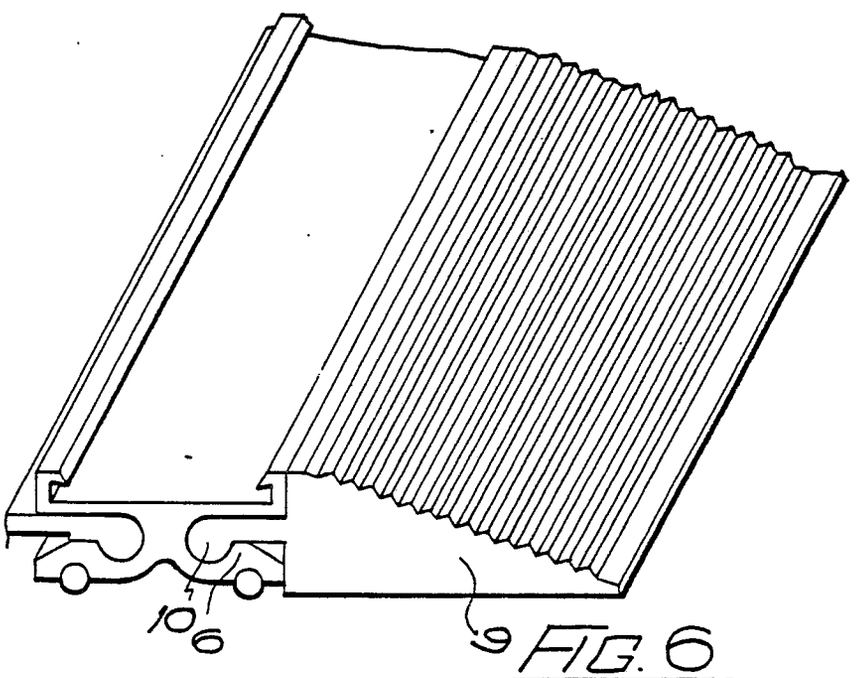
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FIG. 6