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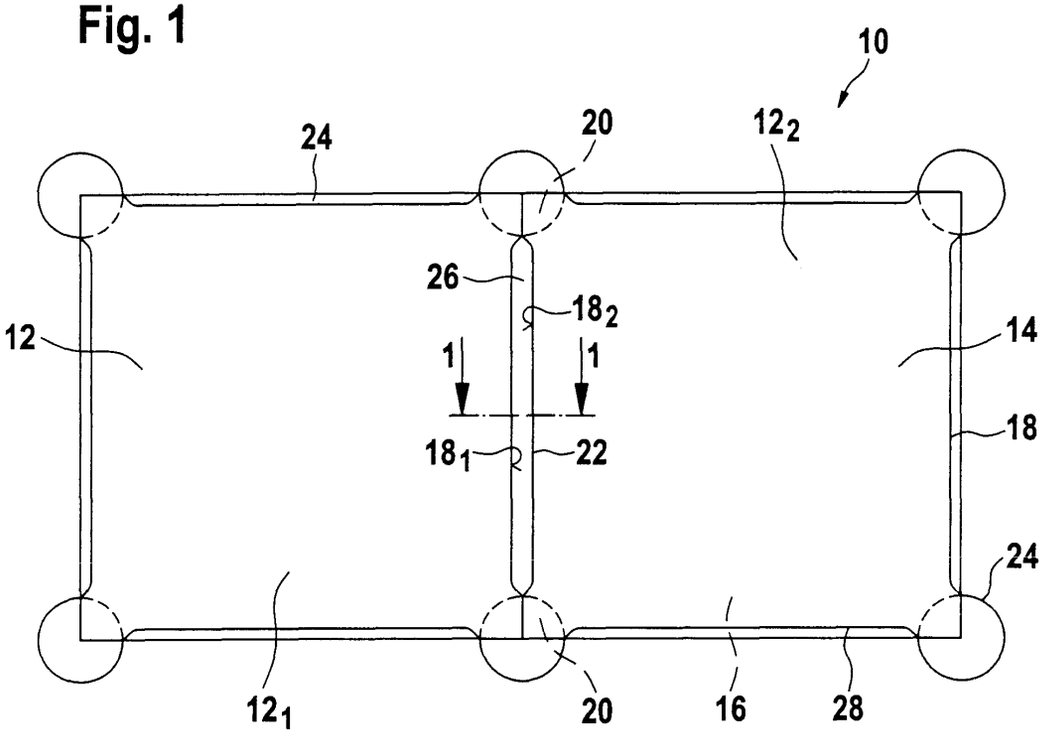
(54) Elevated floor assembly

(57) The invention proposes an elevated floor assembly (10) comprising floor panels (12) having a thickness, an upper surface (14), an opposite lower surface (16) and side faces (18). These side faces (18) have two corner portions (20) and a central portion (22) lying in-between the two corner portions (20). In order to support the floor panels (12) above a base floor, the elevated floor assembly (10) further includes pedestals, which provide support at the corner portions (20). In accordance with the invention, two adjacent side faces (18_1, 18_2) of two adjacent floor panels (12_1, 12_2) are designed so that their corner portions (20) are in abutment, whereas a slot (26) extending over the whole thickness of the two floor panels (12_1, 12_2) is formed, separating the central portions (22) of the two adjacent side faces (18_1, 18_2). This slot (26) ensures the avoidance of floor squeaking, which can be rather disturbing especially in commercial and office buildings.

Fig. 1



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Description

Field of the invention

[0001] The present invention relates to an elevated floor assembly.

Background of the invention

[0002] Elevated floor assemblies are commonly used in commercial and office buildings, where substantial numbers of cables, pipes and ducts are required and where it is desirable to maintain accessibility to the latter for ease of installation, change or removal. An elevated floor assembly basically consists of floor panels supported above the base floor by pedestals. The pedestals are normally located so as to provide support at panel corners. Cables, pipes or even air conditioning services are thus installed in a chamber formed between the base floor and the elevated floor and are easily accessible by removing floor panels where needed.

[0003] Elevated floor assemblies have adjacent floor panels firmly in contact with each other. Supporting the floor panels by pedestals at panel corners allows for some relative movement of the floor panels due to the placement and removal of weight onto the floor panels. This relative movement results in floor squeaking, which can be rather disturbing. Indeed, it is a common experience to walk across such an elevated floor assembly and hear a floor squeak in response to placement and removal of weight of a person crossing the floor.

[0004] Providing better support for the floor panels can reduce this squeaking. Hence, the pedestals can be supplemented by horizontal stringer members. Such stringer members form a grid to provide support along the panel sides. Due to the extra material, elevated floor assemblies with such stringer members are more expensive and take longer to assemble. Furthermore, the squeak reduction is insufficient.

Object of the invention

[0005] Due to the disturbing and damaging effect of this floor squeaking especially in commercial and office buildings, it is an object of this invention to provide an elevated floor assembly which does not give rise to such floor squeaking. This problem is solved by an elevated floor assembly as claimed in claim 1.

Summary of the invention

[0006] The invention proposes an elevated floor assembly comprising floor panels having a thickness, an upper surface, an opposite lower surface and side faces. These side faces have two corner portions and a central portion lying in-between the two corner portions. In order to support the floor panels above a base floor, the elevated floor assembly further includes pedestals, which provide support at the corner portions. In accordance with an important aspect of the present invention, two adjacent side faces of two adjacent floor panels are designed so that their corner portions are in abutment, whereas a slot extending over the whole thickness of the two adjacent floor panels is formed, separating the central portions of the two adjacent side faces over at least part of the length of the respective central portions. This thin slot ensures the avoidance of floor squeaking, which is caused by the relative movement between adjacent floor panels in response for example to a load application and removal when a person walks from one panel to the adjacent panel of an elevated floor assembly, or, in fact, any other object moving across adjacent panels. It will be appreciated that the present invention proposes a very simple and inexpensive contribution to provide an elevated floor assembly, which does not give rise to such floor squeaking.

[0007] Advantageously, two adjacent side faces of two adjacent floor panels are chamfered so that the slot widens in the direction of the lower surfaces of the two adjacent floor panels.

[0008] To achieve such a slot, a longitudinal cut is extended over at least part of the length of the central portions of the two adjacent side faces, whereby only that part of the thickness of the panel is removed that has contact with the adjacent panel. Except where the edging is of vertical type, i.e. where the side faces of the floor panels are not chamfered, it will not be necessary for the slot to be cut through the full thickness of the panel. Preferably, however, the longitudinal cut extends over the whole length of the respective central portions, thereby warranting that two adjacent floor panels touch only at their corner portions.

[0009] The width of the longitudinal cut is preferably in the range of a few tenths of 1 mm. This is sufficient to avoid floor squeaking, while at the same time not allowing too much dirt to accumulate in the longitudinal cuts.

[0010] It shall be appreciated that it is not excluded to provide horizontal stringer members in order to further support the floor panels.

[0011] In a preferred embodiment of the invention, the floor panels have a rectangular shape. It is however not excluded to provide the elevated floor assembly with floor panels having any other polygonal shape.

Brief description of the drawings

[0012] The present invention will now be described, by way of example, with reference to the accompanying drawings, in which:

Figure 1: is a top view of an elevated floor assembly in accordance with the present invention;

Figure 2: is a section along line 1-1 in FIG. 1.

Detailed description of a a preferred embodiment

[0013] An elevated floor assembly 10 in accordance with the present invention is shown in FIG. 1. Such an elevated floor assembly 10 consists of individual floor panels 12_1, 12_2 supported above a base floor by means of pedestals (not shown) so as to define a chamber therebetween in which cables, pipes or even air conditioning services may be installed. The floor panels 12_1, 12_2 shown in FIG.1 are of rectangular shape and have an upper surface 14, an opposite lower surface 16 and side faces 18, the latter comprising two corner portions 20 and a central portion 22 lying therebetween. Panel supporting heads of the pedestals, which are schematically indicated by circles 24, are designed to provide support to the floor panels 12_1, 12_2 at their corner portions 20.

[0014] Elevated floor assemblies 10 commonly have adjacent floor panels 12 firmly in contact with each other. Supporting the floor panels 12 by means of pedestals at their corner portions 20 allows for some relative movement of the central portions 22 of the floor panels 12 due to the placement and removal of weight onto these central portions 22. This relative movement results in floor squeaking, which can be rather disturbing and needs to be avoided.

[0015] According to the invention this floor squeaking is avoided in that only the corner portions 20 of two adjacent panels 12_1, 12_2 are in abutment, whereas a slot 26 separates the central portions 22 of the two adjacent side faces 18_1, 18_2.

[0016] The two adjacent floor panels 12_1, 12_2 have chamfered side faces 18_1, 18_2 and comprise a longitudinal cut 28 on their upper surface, extending over the whole length of the central portions 22. The chamfered adjacent side faces 18_1, 18_2 and the two adjacent longitudinal cuts 28 co-operate to define the slot 26, which separates the central portions 22 of the two adjacent floor panels 12_1, 12_2. Hence, the adjacent side faces 18_1, 18_2 are only in abutment at their corner portions 20, between which relative movement is excluded due to the secure support provided by the panel supporting heads 24 of the pedestals. It follows that although some relative movement remains between the central portions 22 of the panel side faces 18_1, 18_2, the slot 26 separating the latter avoids floor squeaking in the elevated floor assembly 10.

[0017] In the embodiment shown in FIG. 1, each side face 18 of each floor panel 12 of the elevated floor assembly 10 comprises a longitudinal cut 28 in its central portion 22.

[0018] Preferably, the cut 28 has a width in the range of 1 to 2 mm, which is sufficient to avoid floor squeaking, while at the same time not allowing too much dirt to accumulate in the latter. It will be noted that as a floor panel 12 is commonly a panel of 60 cm $\times$ 60 cm, both FIG.1 and 2 are not to scale, particularly with regard to the width of the longitudinal cuts 28, which is greatly exaggerated. The chamfering of the panel side faces 18 is advantageously of about 1° to 2° and is also exaggerated in FIG. 2.

[0019] It remains to be noted that, as shown in FIG. 1, a floor panel 12 for an elevated floor assembly 10 commonly a rectangular shape, i.e. four panel sides 18. However it is not excluded and still within the scope of the present invention to design the elevated floor assembly 10 with floor panels 12 having any other polygonal shape.

[0020] Although not shown in the accompanying drawings, it is not excluded to provide horizontal stringer members in order to further support the floor panels 12 of the elevated floor assembly 10.

Claims

1. An elevated floor assembly (10) comprising:

floor panels (12) having a thickness, an upper surface (14), an opposite lower surface (16) and side faces (18), wherein each of said side faces (18) has two corner portions (20) and a central portion (22) lying inbetween said two corner portions (20); and

pedestals for supporting said floor panels (12) above a base floor, wherein said pedestals provide support at said corner portions (20);

characterised in that
two adjacent side faces (18_1, 18_2) of two adjacent floor panels (12_1, 12_2) are designed so that their corner portions (20) are in abutment, whereas a slot (26) extending over the whole thickness of said two adjacent floor panels (12_1, 12_2) is formed, thereby separating the central portions (22) of said two adjacent side faces (18_1, 18_2) over at least part of the length of the central portions (22).

2. The elevated floor assembly (10) as claimed in claim 1, **characterised in that** said two adjacent side faces (18_1, 18_2) of said two adjacent floor panels (12_1, 12_2) are chamfered.

3. The elevated floor assembly (10) as claimed in claim 1 or 2, **characterised by** a longitudinal cut (28) extending over at least part of the length of the central portions (22) of said two adjacent side faces (18_1, 18_2) of said two adjacent floor panels (12_1, 12_2).

4. The elevated floor assembly (10) as claimed in claim 1 or 2, **characterised by** a longitudinal cut (28) extending over the whole length of the central portions (22) of said two adjacent side faces (18_1, 18_2) of said two adjacent floor panels (12_1, 12_2).

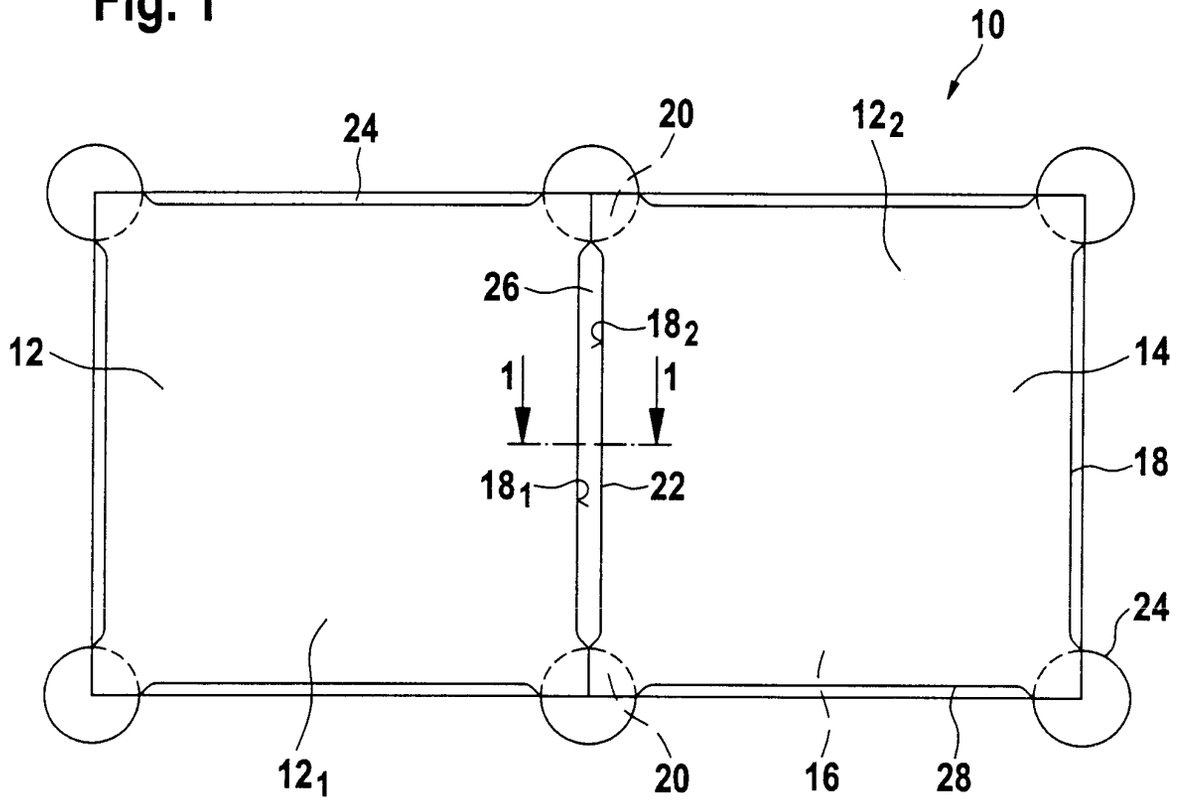
5. The elevated floor assembly (10) as claimed in any one of claims 1 to 4, **characterised in that** said longitudinal cut (28) has a width in the range of a few tenths of 1 mm.

6. The elevated floor assembly (10) as claimed in any one of claims 1 to 5, **characterised by** horizontal stringer members, which form a grid to provide support to said floor panels (12) along said side faces (18).

7. The elevated floor assembly (10) as claimed in any one of claims 1 to 6, **characterised in that** said floor panels (12) have a rectangular shape.

8. The elevated floor assembly (10) as claimed in any one of claims 1 to 6, **characterised in that** said floor panels (12) have a polygonal shape.

Fig. 1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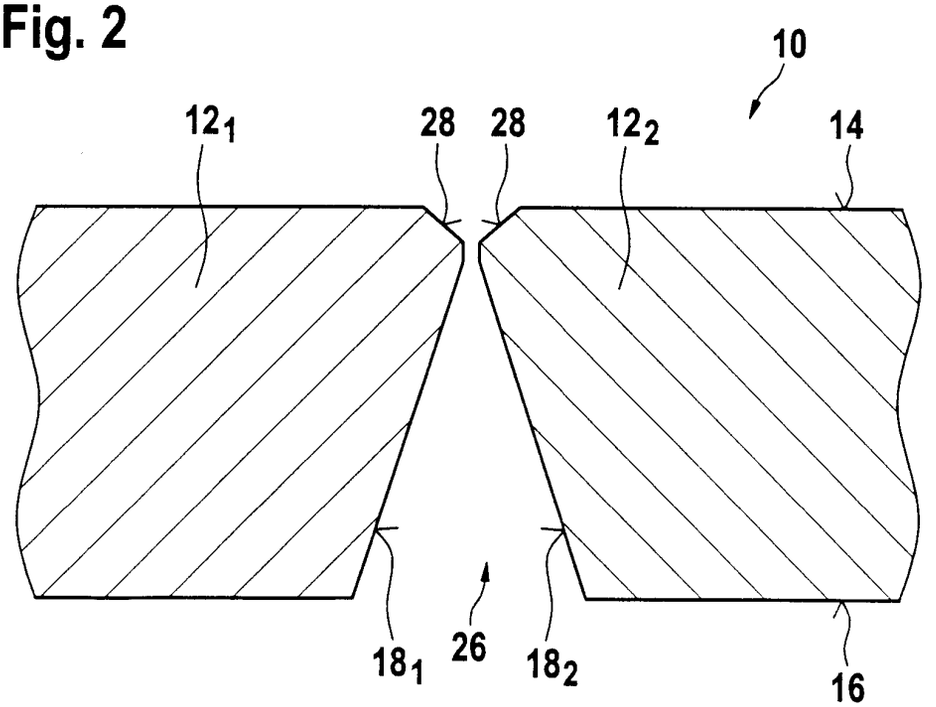
28

Fig. 2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EUROPEAN SEARCH REPORT

Application Number
EP 03 10 1958

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
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A	FR 1 547 666 A (TENAILLE EDOUARD) 29 November 1968 (1968-11-29) * page 2, left-hand column, line 26 - page 3, left-hand column, line 22; figures 1-6 *	1-3,6,7	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			E04F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	9 October 2003	Ayiter, J

CATEGORY OF CITED DOCUMENTS

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 03 10 1958

This annex lists the patent family membersrelating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82