

(19)



(11)

EP 2 090 707 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention
of the grant of the patent:
29.05.2013 Bulletin 2013/22

(51) Int Cl.:
E04B 9/00 ^(2006.01) **E04B 9/04** ^(2006.01)
E04B 9/22 ^(2006.01)

(21) Application number: **08151340.0**

(22) Date of filing: **13.02.2008**

(54) **Ceiling and method of arranging the same**

Zimmerdecke und Verfahren zu deren Anbringung

Plafond et son procédé d'agencement

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT
RO SE SI SK TR**

(43) Date of publication of application:
19.08.2009 Bulletin 2009/34

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Description

FIELD OF THE INVENTION

[0001] The present invention relates to a ceiling comprising a first set of a plurality of tiles and a second set of a plurality of tiles. The invention also relates to a method of arranging such a ceiling.

BACKGROUND ART

[0002] In public buildings such as offices, schools, hospitals etc ceilings are normally used not only to provide an acoustical environment but also to conceal cable arrangement, ventilation equipment, lighting installations and other features. One common type of ceilings is made up by a number of tiles being arranged in profiles, which profiles are mounted in hanging suspensions. By the tiles normally being quadrangular a continuous grid pattern is formed. In order to provide an aesthetical appearance, a symmetry should be strived for. However, since the tiles are provided in a limited number of sizes, this means that the tiles along the walls normally have to be cut to fit. In fact, cutting is in most cases necessary no matter if symmetry is a requirement or not.

[0003] The easiest way to form the symmetry is to make a drawing according to scale and mark a reference point. Depending on the available area, such reference could be a centreline or a point of intersection depending on whether the area is a corridor or a room. Then the continuous grid pattern is adapted to the reference point whereby the perimeter becomes symmetrical, i.e. the width of the tiles along two opposing walls becomes the same. By making such drawing in advance, it is known how to cut the individual tiles along the walls. The tiles along a wall are generally known as a perimeter or a frieze.

[0004] Tiles are provided in a number of dimensions, normally quadrangular. The tiles are provided in a great variety of edge designs, such as geometrical profiles, surface treatments, brackets and trimmings depending on the intended mounting, joint type and visual appearance. Accordingly, two opposing edges may not be identical.

[0005] In order to adapt the individual tiles in the perimeter to the wall the tiles are cut. This means a lot of waste material, and especially in the case when the two opposing edges are not identical, since the cut away tile portion cannot be used to form the perimeter by simply turning the tile.

[0006] Not only is there a lot of waste material, but also a lot of working involved in cutting the individual tiles. Calculations have been made resulting in that about 80 % of the time required to mount a ceiling relates to cutting of tiles, including restoration of cut edges. This number does not only include cutting of tiles along the perimeter but also cutting holes for lamps, ventilation etc. More precisely, in a toilet or a corridor about 80% of the tiles must

be cut, whereas in an office about 40 % of the tiles must be cut. Cutting is not only time consuming as such, it also means the risk of damaging the edges, with the worse case scenario that the entire tile must be rejected. Further, cutting may cause dust formation and that the interior material in the tile is exposed along the cut edge. This means that the cut edge must be restored by providing the cut with a sealing. Restoration may also be required if the cut edge is a visible edge (e.g. for aesthetic reasons). In the latter case a trimming is normally used, either alone or in combination with a sealing.

[0007] GB 683,233 discloses an assemblage of boards for a roof lining and a ceiling wherein the boards are overlapping. The overlapping arrangement allows normal shrinkage of the boards without producing gaps exposing the metal supports of the boards.

OBJECT OF THE PRESENT INVENTION

[0008] Thus, the objects of the present invention are to provide a ceiling structure allowing a substantial reduction of the cutting required, a minimum of waste material and a minimum of required restoration of cut edges in order of reducing the total cost of mounting a ceiling. A further object is to improve the acoustic properties of the ceiling.

SUMMARY OF THE INVENTION

[0009] To achieve at least one of these objects and also other objects that will be evident from the following description, the present invention refers to a ceiling comprising a first set of a plurality of tiles and a second set of a plurality of tiles. The ceiling is characterized in that the tiles in said first set are consecutively arranged, forming along at least one wall in a room a row of tiles having the width of a single tile, said first set forming a perimeter being arranged in a plane different from a plane of the second set, and said perimeter having a free edge facing the room overlapping a free edge of the second set of tiles facing the wall.

[0010] Said perimeter formed of said first set of tiles surrounds the second set of tiles.

[0011] Thus by the present invention a ceiling is achieved that provides a number of advantages over prior art.

[0012] By dividing the ceiling into a first and a second set of tiles in this manner the cutting required may be kept to a minimum. More precisely, by the first set of tiles having a width of a single tile there is no need of cutting each tile adjacent a wall in said first set. Instead the cutting may be limited to adjust the length of one tile per row. In practice this means that in a quadrangular room four tiles must be cut, i.e. one tile per wall (four rows).

[0013] It is generally known that walls are more or less irregular or uneven. Such irregularities form aesthetical defects. One known measure is to arrange a gap between the wall and the edge of the tiles. Normally, with prior art

technology the cutting at each panel means that the cut edge must be provided with a trimming if the gap makes the cut edge visible. Since the present invention to a very large extent reduces cutting, restoration of the tiles can be reduced.

[0014] By having the free edges of the first and second sets of tiles overlapping each other, also the cutting of the tiles of the second set of tiles may in many cases be avoided, simply by choosing the size of the individual tiles in the second set so that an area is formed that is adapted to the area delimited by the inner circumference formed by the free edges of the first set of tiles. By allowing an overlapping between the two set of tiles, which sets are arranged in different planes, the arrangement allows for large tolerances, i.e. the area formed by the tiles of the second set may be considerably larger than the area delimited by the inner circumference formed by the free edges of the first set of tiles.

[0015] The fact that the overlapping area comprises a superfluous amount of tile material is of no problem when it comes to material savings since that material in prior art arrangements would have been cut off forming waste material. Said cutting would not only form waste material, but is also labour intensive and time consuming and thereby expensive in terms of the total cost for a construction site. Also, the superfluous material forms a concealing sector which is used to conceal, for example, lighting and ventilation arrangements.

[0016] In case any tiles in the second set still must be cut, such cut edges may simply be concealed by arranging the second set of tiles above the first set of tiles, or by providing said cut edges with a trimming in the case of the second set of tiles are arranged below the first set.

[0017] Additionally, having an overlap area is advantageous for improving the room acoustic properties of the ceiling, especially in the low frequency range. The irregularity of the ceiling in the overlap area, in combination with the presence of two layers of tiles and the gap formed between the first and second set of tiles improves the acoustic properties of the ceiling.

[0018] Said first set of tiles form a perimeter surrounding the second set of tiles. This arrangement refers to a perimeter wherein the rows form a closed loop.

[0019] The free edges of the lowest set of tiles may be provided with a trimming. Trimmings may be used in order of restoring cut edges or in order of providing a strictly aesthetical impression. Restoration of cut edges are under some circumstances required in order to avoid dust formation. Trimmings may also be used in order to reflect lights or guiding air in case lighting means or ventilation means are arranged and concealed in the area between the two sets of tiles. The term trimming is not only to be restricted to profiles, ledges or the like but should also include any coating or sealing.

[0020] Said second set may be arranged in a horizontal plane.

[0021] The first tile in each row forming the first set of tiles may be a tile having a cut edge, which cut edge is

facing a wall in a corner. In a quadrangular room having a circumferential perimeter, this means that only one tile per row has to be cut in order to adapt the full length of the consecutively arranged tiles in each row to the length of the corresponding wall. In total four tiles have to be cut, i.e. one tile per row. This is a major difference to prior art wherein in most cases each tile adjacent the wall have to be cut in order of adjusting the full width of the grid of tiles forming the ceiling to the actual available area of the room. Thus, the reduced amount of cutting results in enormous time and cost savings, not only due to the reduced cutting but also to the reduced amount of work involved when it comes to restoring the cut edges in order of fulfilling different requirements set on the edges.

[0022] The first and second sets of tiles may be arranged with a vertical gap between the two planes. The vertical gap may be used in order to provide lighting to the room, which lighting may be arranged above at least one of the first and second sets of tiles. The vertical gap may also be used in order to provide inlet and/or outlet air supply for ventilation of the room or strictly as an aesthetical arrangement.

[0023] The first set of tiles may be arranged in a plane angled to the plane formed by the second set of tiles. Having angled tiles in the perimeter improves the acoustic properties of the ceiling. The angled orientation creates a void of varying size and forms an irregularity of the ceiling, which is advantageous for improving the sound-absorption properties of the ceiling, especially in the low frequency range. The angled orientation of the first set of tiles improves the luminous efficiency of lighting arranged in the void between the first set and the second set of tiles. The angled orientation may also be used for controlling the direction of the light.

[0024] According to another aspect of the invention, the invention refers to a method of arranging a ceiling comprising a first set of a plurality of tiles and a second set of a plurality of tiles, the method comprising the steps of mounting a first set of tiles forming a perimeter along at least one wall in a room, said perimeter having the form of one row of consecutively arranged tiles, the row having the width of one single tile, and mounting a second set of tiles in the area delimited by a free edge of the first set of tiles, the second set being arranged in a plane different from a plane of the first set, and said free edges of the first set of tiles facing the room overlapping the free edges of the second set of tiles facing the wall. The method further comprises mounting said first set of tiles forming said perimeter such that said perimeter surrounds the second set of tiles.

[0025] The method may further comprise arranging the first and second set of tiles with a vertical gap between the two planes.

[0026] The method may further comprise the step of providing the free edge of the lowest set of tiles with a trimming.

[0027] The method may further comprise arranging the first tile in each row with a cut edge facing a wall in a

corner.

[0028] In order to form a perimeter having the form of a closed loop, the tiles in the first set may be mounted following the steps of:

- a) arranging in a first row along a second wall, a number of uncut tiles one after the other starting on a distance from a first wall,
- b) arranging a cut tile in a gap formed between the last tile in said first row and the third wall, said gap being smaller than the length of an uncut tile, said cut tile being arranged in the corner between the second and a third wall with its cut edge facing the third wall,
- c) arranging in a second row along a third wall a number of uncut tiles one after the other starting with the first tile adjacent the last tile in the first row,
- d) arranging a cut tile in a gap formed between the last tile in said second row and the fourth wall, said gap being smaller than the length of an uncut tile, said cut tile being arranged in the corner between the third and a fourth wall with its cut edge facing the fourth wall,
- e) arranging in a third row along the fourth wall a number of uncut tiles one after the other starting with the first tile adjacent the last tile in the second row,
- f) arranging a cut tile in a gap formed between the last tile in said third row and the first wall, said gap being smaller than the length of an uncut tile, said cut tile being arranged in the corner between the fourth and the first wall with its cut edge facing the first wall, and
- g) arranging in a fourth row along the first wall a number of uncut tiles one after the other starting with the first tile adjacent the last tile in the third row and the last tile being a cut tile arranged in the corner between the first and second walls with its cut edge facing the second wall.

[0029] In order to form a perimeter in the form of a single row along a wall, the tiles in the first set may be mounted by starting at a first wall by arranging a number of uncut tiles one after the other in a row along a second wall until a gap is formed at a third wall, which gap is smaller than the length of an uncut tile, and arranging a cut tile in said gap with its cut edge facing the third wall. Alternatively the tiles in the first set may be mounted by starting at a first wall by arranging a number of uncut tiles one after the other in a row along a second wall, said row forming a uniform gap between the first wall and the first tile and a third wall and the last tile respectively, which gaps are smaller than the length of an uncut tile, and arranging a cut tile in each of said gaps, said cut tiles being arranged with their cut edges facing the corners formed between the first and the second wall and the second and the third wall respectively.

[0030] The method comprises generally the same features as the inventive ceiling and thereby presents the

same results and advantages as those previously discussed.

DESCRIPTION OF DRAWINGS

[0031] The invention will now be described in more detail by way of example and with reference to the accompanying drawings.

- 10 Figure 1 discloses a typical ceiling according to prior art.
- Figures 2a and 2b disclose a ceiling according to one embodiment of the present invention.
- 15 Figure 3a and 3b disclose two embodiments not forming part of the invention of a ceiling suitable to be used in a corridor.

TECHNICAL DESCRIPTION

- 20 **[0032]** Referring to Figure 1, a typical ceiling according to prior art is disclosed. The room 102 being quadrangular has four walls 101 limiting an area. Further, the room 102 has a ceiling 100, the ceiling being viewed from below. The ceiling 100 comprises a number of tiles 103 being
- 25 arranged side by side in rails 104 forming a continuous grid pattern starting from a centrally arranged reference point P. In order to form a symmetrical grid pattern the reference point P is constituted by the geometrical centre point of the ceiling. The reference point P may by way of
- 30 example be positioned in a tile 103 such as disclosed or in a point of intersection between four tiles in the middle of the ceiling. This means that in most cases all tiles adjacent a wall have to be cut in order of fitting the available area. The row of tiles closest to the walls are generally
- 35 referred to as a perimeter 105 or a frieze.

- [0033]** Cutting a tile 103 means that the cut off portion generally becomes waste material for a number of reasons. In most cases, the cut off portion is simply too small to be re-used in the perimeter 105. Also, in most cases,
- 40 the opposing edges of a tile are not symmetrical, whereby it is not possible to turn the cut off tile portion 180 degrees to fit an adjacent tile. Also, when cutting a tile, the cut must generally be restored, either in the form of a sealing or a trimming. Restoration is required not only for aesthetic reasons but also for a number of technical reasons, such as avoiding formation of dust. Restoration in the form of a trimming may also be required to form a connecting means suitable to fit adjacent tiles or wall fittings. Cutting and restoration is not only very time consuming but also requires the craftsman to be accurate
- 45 and careful. Accordingly, for the reasons given above it is in most cases more economically favourable to simply take a new tile, cut it and handle the cut off portion as waste material. Also, since there is generally a huge time pressure on construction sites there is a constant need of reducing the time required and thus the total labour costs.
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- 55

[0034] Now referring to Figure 2a, the same room 102

is shown having a ceiling 1 in accordance with the invention. The ceiling 1 comprises two sets 2, 3 of tiles 4a-4c. The first set 2 of tiles is arranged one tile 4a, 4b after the other in a continuous row 6 along the walls 101 forming a perimeter 7.

[0035] In the disclosed embodiment the perimeter 7 is divided into four rows 61-64, i.e. one row along each wall 101. The four rows 61-64 are together forming a closed loop. The perimeter 7 has a width W corresponding to the width V of the individual tiles 4a, 4b that are making up the perimeter 7. Further, only one tile per row is cut, i.e. tiles 4b.

[0036] Starting with a first row 61, a number of uncut tiles 4a are consecutively arranged one after the other starting on a distance Y from the first wall 1011. The distance Y corresponds to the width V of a tile 4a, 4b. The uncut tiles 4a are arranged along the second wall 1012 in a first row 61. When a gap 8 is formed between the last tile in the first row 61 and the third wall 1013 which gap is smaller than the length L of an uncut tile 4a, the following tile 4b is cut to a length X corresponding to said gap and arranged to fill the gap. The cut tile 4b is arranged in the corner 9 between the second wall 1012 and the third wall 1013 with its cut edge 10 facing the third wall 1013. This pattern is then repeated, following that in the subsequent, second row 62, the first tile is an uncut tile 4a whereas the last tile in said row is a cut tile 4b having its cut edge 10 arranged in the corner 9 between the third wall 1013 and the fourth wall 1014 with its cut edge 10 facing the fourth wall 1014. This pattern is repeated along all four walls 1011-1014 until a perimeter 7 in the form of a closed loop is formed. In the resulting perimeter 7 only four tiles 4b have to be cut.

[0037] The free edge 11 a of the first set of tiles 2, i.e. the edge facing the room, forms a circumference delimiting an area A, see Figure 2a and 2b. The second set of tiles 3 forms a continuous grid pattern of tiles 4c having an area B. The area B is larger than the area A. The two sets 2, 3 of tiles are arranged extending in different planes. By area B being larger than area A, an overlap C is formed between the two sets 2, 3 of tiles. In the disclosed embodiment the second set 3 of tiles is arranged below the first set 2 of tiles. Alternatively the second set 3 of tiles may be arranged above the first set 2 of tiles.

[0038] By the overlap C, the ceiling 1 allows for large tolerances, i.e. area B may be considerably larger than area A since such overlap is not visible when the ceiling is looked at from below. Thus, there is no need of cutting the peripheral tiles in the second set in order of reducing the overlap to a certain extent due to aesthetical reasons or to provide the edge with a trimming since the edge is not visible from the room if the overlap is large enough. On the contrary, the overlap improves the acoustic properties of the ceiling. Also, the fact that the overlapping area comprises a superfluous amount of tile material is of no problem when it comes to a question of material savings since such cut off material would form waste ma-

terial of no use to the ceiling. It is to be understood that the amount of overlapping may be adjusted by choosing the size of the tiles in the first and second sets of tiles.

[0039] Now turning to Figure 2b specifically, the first set 2 of tiles, i.e. the perimeter 7, is mounted to the wall 101 by using fixing means and rails 12 generally known in the art. The rails 12 are fixed to the walls and the tiles 4a, 4b are supported by the rails 12 along their edges 13. The opposite free edges 11 of the tiles 4a are suspended from the inner ceiling 15 by well known fixing means 14.

[0040] The second set 3 of tiles are suspended in the inner ceiling 15 by using fixing means 14 well known in the art. By way of example wires may be used.

[0041] Along the inner ceiling 15 there is normally arranged features (not shown) such as cable management, ventilation equipment and lighting installations. By arranging the two sets 2, 3 of tiles at a distance from the inner ceiling 15 a space D is formed to accommodate and conceal such features.

[0042] By forming a vertical gap 16 between the two sets 2, 3 of tiles such gap may be used to form a light scattering or to form an air diffusion. Lighting or air supply means may also be arranged in lead-troughs in the tiles. Trimmings 17 may be used to enhance the effect of light scattering or air diffusion.

[0043] Now turning to Figure 3a and 3b, two embodiments of a ceiling 1 in a corridor, not forming part of the invention, will be disclosed. By a corridor having a width that is generally considerably smaller than its length, the corridor may either be provided with a ceiling wherein the tiles in the first set 2 form a closed loop as disclosed above or with a ceiling wherein the tiles in the first set 2 are arranged according to a principle to be disclosed below. In the two embodiments to be disclosed the perimeter 7 is divided into two separate rows 61, 62, one row along each wall of the longer walls 1011, 1013.

[0044] Now referring to the embodiment of Figure 3a. To form the first set 2 of tiles, a number of uncut tiles 4a are arranged consecutively in a row along the walls 1011, 1013 starting at one of the short walls 1012 until a gap 8 results at the opposing short wall 1014, which gap is smaller than the length of an uncut tile 4a. This gap 8 is filled by a cut tile 4b. The cut tile 4b is arranged in the corner 9 with its cut edge 10 facing the short wall 1014. The same procedure is repeated along the opposing wall. For aesthetical reasons the cut tiles 4b could be arranged in the same end of the corridor. In accordance with the previous embodiment the perimeter 7 has a width W corresponding to the width of a single tile V.

[0045] Referring to the embodiment of Figure 3b, the first and the last tiles in each row 61, 62 may be cut tiles 4b in accordance with the principles discussed above with reference to Figure 3a. In this embodiment four tiles in the first set 2 of tiles must be cut. This might be aesthetically favourable depending on the length of the corridor.

[0046] No matter how the tiles are arranged in the ends

of said rows, the area A' between the two rows 61, 62, i.e. the area delimited by the free edges 11 of the rows 61, 62 facing the corridor and the short walls 1012, 1014 of the corridor, is filled with a second set 3 of tiles that is arranged overlapping the first set of tiles 2. The second set 3 of tiles have an area B' being larger than area A'. Depending on the width of the corridor and available size of tiles, such second set of tiles 4c may either be a single row of juxtaposed tiles 4c as disclosed or a number of tiles arranged in a grid pattern along the corridor. According to such principle the only tiles that have to be cut in the second set 3 of tiles are those at the ends of the corridor. Those tiles may be provided with a trimming or similar in a conventional manner.

[0047] The panels are made of compressed fiber material, preferably mineral fibers, such as glass wool or stone wool, or gypsum.

[0048] In the disclosed embodiments all tiles have had the same properties. It is thought to be understood that the tiles in the first and second sets may have different properties such as acoustical properties or visual appearance. Also, the tiles either individually or in the two sets may have different geometries, sizes, colour and/or visual appearance etc.

[0049] Also, in the disclosure the details regarding the fixing elements, suspension means, rails, trimmings and sealings to be used when mounting the tiles have only been described in general terms since it would be obvious to the skilled person what to choose depending on the type of tiles, type of walls, the wanted aesthetical appearance etc.

[0050] Accordingly it will be appreciated that the present invention is not limited to the disclosed embodiment of the inventive ceiling and method. Several modifications and variants are thus conceivable, and consequently the invention is defined by the appended claims.

Claims

1. A ceiling (1) comprising a first set (2) of a plurality of tiles (4a, 4b) and a second set (3) of a plurality of tiles (4c), wherein the tiles (4a, 4b) in said first set (2) being consecutively arranged in the proximity of at least one wall in a room, forming along said at least one wall (1011-1014) a row (61-64) of tiles having the width of a single tile, said first set (2) forming a perimeter (7) being arranged in a plane different from a plane of the second set (3), and said perimeter (7) having a free edge (11 a) facing the room overlapping a free edge (11b) of the second set (3) of tiles facing the wall, **characterised in that** said perimeter (7) formed of said first set (2) of tiles surrounds the second set (3) of tiles.
2. A ceiling according to claim 1, wherein all tiles in the second set (3) are arranged in the same plane.
3. A ceiling according to any of claims 1 or 2, in which the free edges (11a; 11b) of the lowest set (2, 3) of tiles are provided with a trimming (17).
4. A ceiling according to any of the preceding claims, wherein said second set (3) is arranged in a horizontal plane.
5. A ceiling according to any of the preceding claims, in which the first tile (4b) in each row forming the first set of tiles (2) is a tile having a cut edge (10), which cut edge is facing a wall in a corner (9) of the room.
6. A ceiling according to any of the preceding claims, in which the first (2) and second set (3) of tiles are arranged with a vertical gap (16) between the two planes.
7. A ceiling according to any of the preceding claims, wherein the first set of tiles is arranged in a plane angled to the plane formed by the second set of tiles.
8. A ceiling according to any of the preceding claims, wherein lighting means are arranged above at least one of the first and second sets of tiles.
9. A method of arranging a ceiling comprising a first set (2) of a plurality of tiles (4a, 4b) and a second set (3) of a plurality of tiles (4c), the method comprising the steps of mounting a first set (2) of tiles forming a perimeter (7) along at least one wall (1011-1014) in a room, said perimeter having the form of one row (61-64) of consecutively arranged tiles, the row having the width of one single tile, and mounting a second set (3) of tiles in the area delimited by free edges (11a) of the first set (2) of tiles, the second set (3) being arranged in a plane different from a plane of the first set (2), and said free edges (11a) of the first set of tiles facing the room overlapping the free edges (11b) of the second set (3) of tiles facing the wall, the method being **characterised by** mounting said first set (2) of tiles forming said perimeter (7) such that said perimeter (7) surrounds the second set (3) of tiles.
10. A method according to claim 9, wherein the first (2) and second set (3) of tiles are arranged with a vertical gap (16) between the two planes.
11. A method according to any of claims 9-10, further comprising the step of providing the free edges (11a; 11b) of the lowest set of tiles with a trimming (17).

12. A method according to any of claims 9-11, further comprising arranging the first tile (4b) in each row with a cut edge (10) facing a wall in a corner (9) of the room.

13. A method according to any of claims 9-12, wherein the step of mounting the tiles (4a, 4b) in the first set (2) of tiles in order of forming a perimeter (7) having the form of a closed loop involves the steps of

a) arranging in a first row (61) along a second wall (1012), a number of uncut tiles (4a) one after the other starting on a distance from a first wall (1011),

b) arranging a cut tile (4b) in a gap (8) formed between the last tile (4a) in said first row (61) and the third wall (1013), said gap being smaller than the length of an uncut tile (4a), said cut tile being arranged in the corner (9) between the second (1012) and a third wall (1013) with its cut edge (10) facing the third wall (1013),

c) arranging in a second row (62) along a third wall (1013) a number of uncut tiles (4a) one after the other starting with the first tile adjacent the last tile in the first row,

d) arranging a cut tile (4b) in a gap (8) formed between the last tile in said second row (62) and the fourth wall (1014), said gap being smaller than the length of an uncut tile (4a), said cut tile being arranged in the corner (9) between the third (1013) and a fourth wall (1014) with its cut edge (10) facing the fourth wall (1014),

e) arranging in a third row (63) along the fourth wall (1014) a number of uncut tiles (4a) one after the other starting with the first tile adjacent the last tile in the second row (62),

f) arranging a cut tile (4b) in a gap (8) formed between the last tile in said third row (63) and the first wall (1011), said gap being smaller than the length of an uncut tile (4a), said cut tile being arranged in the corner (9) between the fourth (1014) and the first wall (1011) with its cut edge (10) facing the first wall, and

g) arranging in a fourth row (64) along the first wall (1011) a number of uncut tiles (4a) one after the other starting with the first tile adjacent the last tile in the third row (63) and the last tile being a cut tile (4b) arranged in the corner (9) between the first and second walls (1012) with its cut edge (10) facing the second wall.

14. A method according to any of claims 9-12, wherein the step of mounting the tiles in the first set (2) of tiles in order of forming a perimeter (7) in the form of a single row (61, 62) along a wall involves the steps of

starting at a first wall (1012, 1014) by arranging a number of uncut tiles (4a) one after the other in a

row (61, 62) along a second wall (1011, 1013) until a gap (8) is formed at a third wall (1014), which gap is smaller than the length of an uncut tile (4a), and arranging a cut tile (4b) in said gap with its cut edge (10) facing the third wall (1014).

15. A method according to any of claims 9-12, wherein the step of mounting the tiles in the first set (2) of tiles in order of forming a perimeter (7) in the form of a single row (61, 62) along a wall involves the steps of

starting at a first wall (1012, 1014) by arranging a number of uncut tiles (4a) one after the other in a row (61, 62) along a second wall (1011, 1013), said row (61, 62) forming a uniform gap (8) between the first wall (1012) and the first tile and a third wall (1014) and the last tile respectively, which gaps are smaller than the length of an uncut tile, and

arranging a cut tile (4b) in each of said gaps (8), said cut tiles being arranged with their cut edges (10) facing the corners (9) formed between the first and the second wall and the second and the third wall respectively.

Patentansprüche

1. Zimmerdecke (1), umfassend einen ersten Satz (2) von mehreren Platten (4a, 4b) und einen zweiten Satz (3) von mehreren Platten (4c), wobei die Platten (4a, 4b) im ersten Satz (2) aufeinanderfolgend in der Nähe von zumindest einer ersten Wand in einem Zimmer angeordnet sind und entlang der zumindest einen Wand (1011 bis 1014) eine Reihe (61 bis 64) von Platten mit der Breite einer einzelnen Platte ausbilden, der erste Satz (2) einen Umfang (7) ausbildet, der in einer Ebene ausgebildet ist, die von der Ebene des zweiten Satzes (3) abweicht, und der Umfang (7) eine freie Kante (11a) aufweist, die dem Zimmer zugekehrt ist und eine freie Kante (11b) des zweiten Satzes (3) überdeckt, die der Wand zugekehrt ist,

dadurch gekennzeichnet, dass der Umfang (7), der durch den ersten Satz (2) von Platten ausgebildet ist, den zweiten Satz (3) von Platten umgibt.

2. Zimmerdecke nach Anspruch 1, wobei alle Platten im zweiten Satz (3) in derselben Ebene angeordnet sind.

3. Zimmerdecke nach einem der Ansprüche 1 oder 2, wobei die freien Kanten (11a; 11b) des untersten Satzes (2, 3) von Platten mit einem Abgleich (17) versehen sind.

4. Zimmerdecke nach einem der vorhergehenden Ansprüche, wobei der zweite Satz (3) in einer horizon-

talen Ebene angeordnet ist.

5. Zimmerdecke nach einem der vorhergehenden Ansprüche, wobei die erste Platte (4b) in jeder Reihe, die den ersten Satz (2) von Platten ausbildet, eine Platte mit einer beschnittenen Kante (10) ist, wobei die beschnittene Kante einer Wand in einer Ecke (9) des Zimmers zugekehrt ist. 5
6. Zimmerdecke nach einem der vorhergehenden Ansprüche, wobei der erste (2) und zweite (3) Satz von Platten mit einem vertikalen Spalt (16) zwischen den zwei Ebenen angeordnet sind. 10
7. Zimmerdecke nach einem der vorhergehenden Ansprüche, wobei der erste Satz von Platten in einer Ebene angeordnet ist, die winklig zu der Ebene ist, welche durch den zweiten Satz von Platten ausgebildet ist. 15
8. Zimmerdecke nach einem der vorhergehenden Ansprüche, wobei Beleuchtungsmittel über zumindest einem des ersten und zweiten Satzes von Platten angeordnet sind. 20
9. Verfahren zum Anordnen einer Zimmerdecke, umfassend einen ersten Satz (2) von mehreren Platten (4a, 4b) und einen zweiten Satz (3) von mehreren Platten (4c), das Verfahren umfassend die Schritte des 25
Anbringens eines ersten Satzes (2) von Platten zum Ausbilden eines Umfangs (7) entlang zumindest einer Wand (1011 bis 1014) in einem Zimmer, wobei der Umfang die Form einer Reihe (61 bis 64) von aufeinanderfolgend angeordneten Platten aufweist, wobei die Reihe die Breite einer einzelnen Platte aufweist, und 30
Anbringens eines zweiten Satzes (3) von Platten in dem Bereich, der durch freie Kanten (11a) des ersten Satzes (2) von Platten eingegrenzt ist, wobei der zweite Satz (3) von Platten in einer Ebene angeordnet wird, die von einer Ebene des ersten Satzes (2) abweicht, und wobei die freien Kanten (11a) des ersten Satzes von Platten, die dem Zimmer zugekehrt sind, die freien Kanten (11 b) des zweiten Satzes (3) von Platten überdecken, die der Wand zugekehrt sind, 35
wobei das Verfahren durch derartiges Anbringen des ersten Satzes (2) von Platten, die den Umfang (7) ausbilden, dass der Umfang (7) den zweiten Satz (3) von Platten umgibt, gekennzeichnet ist. 40
10. Verfahren nach Anspruch 9, wobei der erste (2) und zweite (3) Satz von Platten mit einem vertikalen Spalt (16) zwischen den zwei Ebenen angeordnet sind. 45
11. Verfahren nach einem der Ansprüche 9 bis 10, ferner umfassend den Schritt des Versehens der freien 50

Kanten (11 a; 11 b) des untersten Satzes von Platten mit einem Abgleich (17).

12. Verfahren nach einem der Ansprüche 9 bis 11, ferner umfassend das Anordnen der ersten Platte (4b) in jeder Reihe mit einer beschnittenen Kante (10), die einer Wand in einer Ecke (9) des Zimmers zugekehrt ist. 5
13. Verfahren nach einem der Ansprüche 9 bis 12, wobei der Schritt des Anbringens der Platten (4a, 4b) im ersten Satz (2) von Platten zum Ausbilden eines Umfangs (7) mit der Form einer geschlossenen Schleife folgende Schritte beinhaltet: 10
 - a) Anordnen in einer ersten Reihe (61) entlang einer zweiten Wand (1012) einer Anzahl von unbeschnittenen Platten (4a) eine nach der anderen, beginnend in einem Abstand zu einer ersten Wand (1011),
 - b) Anordnen einer beschnittenen Platte (4b) in einem Spalt (8), der zwischen der letzten Platte (4a) in der ersten Reihe (61) und der dritten Wand (1013) ausgebildet ist, wobei der Spalt kleiner als die Länge einer unbeschnittenen Platte (4a) ist, wobei die beschnittene Platte in der Ecke (9) zwischen der zweiten (1012) und einer dritten Wand (1013) angeordnet wird, wobei ihre beschnittene Kante (10) der dritten Wand (1013) zugekehrt ist,
 - c) Anordnen in einer zweiten Reihe (62) entlang einer dritten Wand (1013) einer Anzahl von unbeschnittenen Platten (4a) eine nach der anderen, beginnend mit der ersten Platte angrenzend an die letzte Platte in der ersten Reihe,
 - d) Anordnen einer beschnittenen Platte (4b) in einem Spalt (8), der zwischen der letzten Platte in der zweiten Reihe (62) und der vierten Wand (1014) ausgebildet ist, wobei der Spalt kleiner als die Länge einer unbeschnittenen Platte (4a) ist, wobei die beschnittene Platte in der Ecke (9) zwischen der dritten (1013) und einer vierten Wand (1014) angeordnet wird, wobei ihre beschnittene Kante (10) der vierten Wand (1014) zugekehrt ist,
 - e) Anordnen in einer dritten Reihe (63) entlang einer vierten Wand (1014) einer Anzahl von unbeschnittenen Platten (4a) eine nach der anderen, beginnend mit der ersten Platte angrenzend an die letzte Platte in der zweiten Reihe (62),
 - f) Anordnen einer beschnittenen Platte (4b) in einem Spalt (8), der zwischen der letzten Platte in der dritten Reihe (63) und der ersten Wand (1011) ausgebildet ist, wobei der Spalt kleiner als die Länge einer unbeschnittenen Platte (4a) ist, wobei die beschnittene Platte in der Ecke (9) zwischen der vierten (1014) und der ersten Wand (1011) angeordnet wird, wobei ihre be-

schnittene Kante (101) der ersten Wand zugekehrt ist, und

g) Anordnen in einer vierten Reihe (64) entlang der ersten Wand (1011) einer Anzahl von unbeschnittenen Platten (4a) eine nach der anderen, beginnend mit der ersten Platte angrenzend an die letzte Platte in der dritten Reihe (63), und wobei die letzte Platte eine beschnittene Platte (4b) ist, die in der Ecke (9) zwischen der ersten und zweiten Wand (1012) angeordnet wird, wobei ihre beschnittene Kante (101) der zweiten Wand zugekehrt ist.

14. Verfahren nach einem der Ansprüche 9 bis 12, wobei der Schritt des Anbringens der Platten im ersten Satz (2) von Platten zum Ausbilden eines Umfangs (7) in der Form einer einzelnen Reihe (61, 62) entlang einer Wand folgende Schritte beinhaltet:

Beginnen an einer ersten Wand (1012, 1014) durch Anordnen einer Anzahl von unbeschnittenen Platten (4a) eine nach der anderen in einer Reihe (61, 62) entlang einer zweiten Wand (1011, 1013), bis ein Spalt (8) an einer dritten Wand (1014) ausgebildet wird, wobei der Spalt kleiner als die Länge einer unbeschnittenen Platte (4a) ist, und

Anordnen einer beschnittenen Platte (4b) in dem Spalt, wobei ihre beschnittene Kante (10) der dritten Wand (1014) zugekehrt ist.

15. Verfahren nach einem der Ansprüche 9 bis 12, wobei der Schritt des Anbringens der Platten im ersten Satz (2) von Platten zum Ausbilden eines Umfangs (7) in der Form einer einzelnen Reihe (61, 62) entlang einer Wand folgende Schritte beinhaltet:

Beginnen an einer ersten Wand (1012, 1014) durch Anordnen einer Anzahl von unbeschnittenen Platten (4a) eine nach der anderen in einer Reihe (61, 62) entlang einer zweiten Wand (1011, 1013),

wodurch ein einheitlicher Spalt (8) zwischen der ersten Wand (1012) und der ersten Platte bzw. einer dritten Wand (1014) und der letzten Platte ausgebildet wird, wobei die Spalte kleiner als die Länge einer unbeschnittenen Platte sind, und

Anordnen einer beschnittenen Platte (4b) in jedem der Spalte (8),

wobei die beschnittenen Platten derart angeordnet werden, dass ihre beschnittenen Kanten (10) den Ecken (9) zugekehrt sind, die zwischen der ersten und der zweiten Wand bzw. der zweiten und der dritten Wand ausgebildet sind.

Revendications

1. Plafond (1) comprenant un premier ensemble (2) de plusieurs tuiles (4a, 4b) et un deuxième ensemble (3) de plusieurs tuiles (4c), dans lequel les tuiles (4a, 4b) dans ledit premier ensemble (2) sont agencées consécutivement à proximité d'au moins un mur dans une pièce, formant le long dudit au moins un mur (1011-1014) une rangée (61-64) de tuiles présentant la largeur d'une seule tuile, ledit premier ensemble (2) forme un périmètre (7) agencé dans un plan différent d'un plan du deuxième ensemble (3), et ledit périmètre (7) présente un bord libre (11a) tourné vers la pièce et chevauchant un bord libre (11 b) du deuxième ensemble (3) de tuiles tourné vers le mur, **caractérisé en ce que** ledit périmètre (7) formé par ledit premier ensemble (2) de tuiles entoure le deuxième ensemble (3) de tuiles.
2. Plafond selon la revendication 1, dans lequel toutes les tuiles dans le deuxième ensemble (3) sont agencées dans le même plan.
3. Plafond selon l'une quelconque des revendications 1 ou 2, dans lequel les bords libres (11 a ; 11 b) de l'ensemble inférieur (2, 3) de tuiles sont pourvues d'une découpe (17).
4. Plafond selon l'une quelconque des revendications précédentes, dans lequel ledit deuxième ensemble (3) est agencé dans un plan horizontal.
5. Plafond selon l'une quelconque des revendications précédentes, dans lequel la première tuile (4b) dans chaque rangée formant le premier ensemble de tuiles (2) est une tuile possédant un bord coupé (10), ledit bord coupé étant tourné vers un mur dans un coin (9) de la pièce.
6. Plafond selon l'une quelconque des revendications précédentes, dans lequel le premier (2) et le deuxième ensemble (3) de tuiles sont agencés avec un espacement vertical (16) entre les deux plans.
7. Plafond selon l'une quelconque des revendications précédentes, dans lequel le premier ensemble de tuiles est agencé dans un plan incliné par rapport au plan formé par le deuxième ensemble de tuiles.
8. Plafond selon l'une quelconque des revendications précédentes, dans lequel des moyens d'éclairage sont agencés au-dessus d'au moins l'un parmi les premier et deuxième ensembles de tuiles.
9. Procédé pour l'agencement d'un plafond comprenant un premier ensemble (2) de plusieurs tuiles (4a, 4b) et un deuxième ensemble (3) de plusieurs tuiles

- (4c), le procédé comprenant les étapes de montage d'un premier ensemble (2) de tuiles formant un périmètre (7) le long d'au moins un mur (1011-1014) dans une pièce, ledit périmètre présentant la forme d'une rangée (61-64) de tuiles agencées consécutivement, la rangée présentant la largeur d'une seule tuile, et
- montage d'un deuxième ensemble (3) de tuiles dans une zone délimitée par des bords libres (11a) du premier ensemble (2) de tuiles, le deuxième ensemble (3) étant agencé dans un plan différent d'un plan du premier ensemble (2), et lesdits bords libres (11a) du premier ensemble de tuiles tournés vers la pièce chevauchant les bords libres (11 b) du deuxième ensemble (3) de tuiles tournés vers le mur, le procédé étant **caractérisé par** le montage dudit premier ensemble (2) de tuiles formant ledit périmètre (7) de manière à ce que ledit périmètre (7) entoure le deuxième ensemble (3) de tuiles.
10. Procédé selon la revendication 9, dans lequel le premier (2) et le deuxième ensemble (3) de tuiles sont agencés avec un espacement vertical (16) entre les deux plans.
11. Procédé selon l'une quelconque des revendications 9 à 10, comprenant en outre l'étape de réalisation d'une découpe (17) sur les bords libres (11 a ; 11 b) de l'ensemble de tuiles inférieur.
12. Procédé selon l'une quelconque des revendications 9 à 11, comprenant en outre l'agencement de la première tuile (4b) dans chaque rangée avec un bord coupé (10) tourné vers un mur dans un coin (9) de la pièce.
13. Procédé selon l'une quelconque des revendications 9 à 12, dans lequel l'étape de montage des tuiles (4a, 4b) dans le premier ensemble (2) de tuiles de manière à former un périmètre (7) présentant la forme d'une boucle fermée comprend les étapes de
- a) agencement en une première rangée (61), le long d'un deuxième mur (1012), d'un certain nombre de tuiles non coupées (4a) l'une à la suite de l'autre, en commençant à une certaine distance d'un premier mur (1011),
- b) agencement d'une tuile coupée (4b) dans un espacement (8) formé entre la dernière tuile (4a) dans la première rangée (61) et le troisième mur (1013), ledit espacement étant inférieur à la longueur d'une tuile non coupée (4a), ladite tuile coupée étant agencée dans le coin (9) entre le deuxième (1012) et le troisième mur (1013), avec son bord coupé (10) tourné vers le troisième mur (1013),
- c) agencement en une deuxième rangée (62), le long d'un troisième mur (1013), d'un certain nombre de tuiles non coupées (4a) les unes à la suite des autres, en commençant par la première tuile adjacente à la dernière tuile dans la deuxième rangée (62),
- d) agencement d'une tuile coupée (4b) dans un espacement (8) formé entre la dernière tuile dans ladite deuxième rangée (62) et le quatrième mur (1014), ledit espacement étant inférieur à la longueur d'une tuile non coupée (4a), ladite tuile coupée étant agencée dans le coin (9) entre le troisième (1013) et un quatrième mur (1014) avec son bord coupé (10) tourné vers le quatrième mur (1014),
- e) agencement en une troisième rangée (63), le long du quatrième mur (1014), d'un certain nombre de tuiles non coupées (4a) les unes à la suite des autres, en commençant par la première tuile adjacente à la dernière tuile dans la deuxième rangée (62),
- f) agencement d'une tuile coupée (4b) dans un espacement (8) formé entre la dernière tuile dans ladite troisième rangée (63) et le premier mur (1011), ledit espacement étant inférieur à la longueur d'une tuile non coupée (4a), ladite tuile coupée étant agencée dans le coin (9) entre le quatrième (1014) et le premier mur (1011) avec son bord coupé (10) tourné vers le premier mur, et
- g) agencement en une quatrième rangée (64), le long du premier mur (1011), d'un certain nombre de tuiles non coupées (4a) les unes à la suite des autres, en commençant par la première tuile adjacente à la dernière tuile dans la troisième rangée (63), et la dernière tuile étant une tuile coupée (4b) agencée dans le coin (9) entre le premier et le deuxième murs (1012) avec son bord coupé (10) tourné vers le deuxième mur.
14. Procédé selon l'une quelconque des revendications 9 à 12, dans lequel l'étape de montage des tuiles dans le premier ensemble (2) de tuiles de manière à former un périmètre (7) sous la forme d'une seule rangée (61, 62) le long d'un mur comprend les étapes de
- démarrage au niveau d'un premier mur (1012, 1014), en agencant un certain nombre de tuiles non coupées (4a) les unes à la suite des autres en une rangée (61, 62) le long d'un deuxième mur (1011, 1013), jusqu'à former un espacement (8) au niveau d'un troisième mur (1014), ledit espacement étant inférieur à la longueur d'une tuile non coupée (4a), et agencement d'une tuile coupée (4b) dans ledit espacement, avec son bord coupé (10) tourné vers le troisième mur (1014).
15. Procédé selon l'une quelconque des revendications 9 à 12, dans lequel l'étape de montage des tuiles dans le premier ensemble (2) de tuiles de manière

à former un périmètre (7) sous la forme d'une seule rangée (61, 62) le long d'un mur comprend les étapes de démarrage au niveau d'un premier mur (1012, 1014), en agençant un certain nombre de tuiles non coupées (4a) les unes à la suite des autres en une rangée (61, 62) le long d'un deuxième mur (1011, 1013), ladite rangée (61, 62) formant respectivement un espacement uniforme (8) entre le premier mur (1012) et la première tuile et entre un troisième mur (1014) et la dernière tuile, lesdits espacements étant inférieurs à la longueur d'une tuile non coupée, et agencement d'une tuile coupée (4b) dans chacun desdits espacements (8), lesdites tuiles coupées étant agencées avec leurs bords coupés (10) tournés vers les coins (9) formés respectivement entre les premier et deuxième murs et entre les deuxième et troisième murs.

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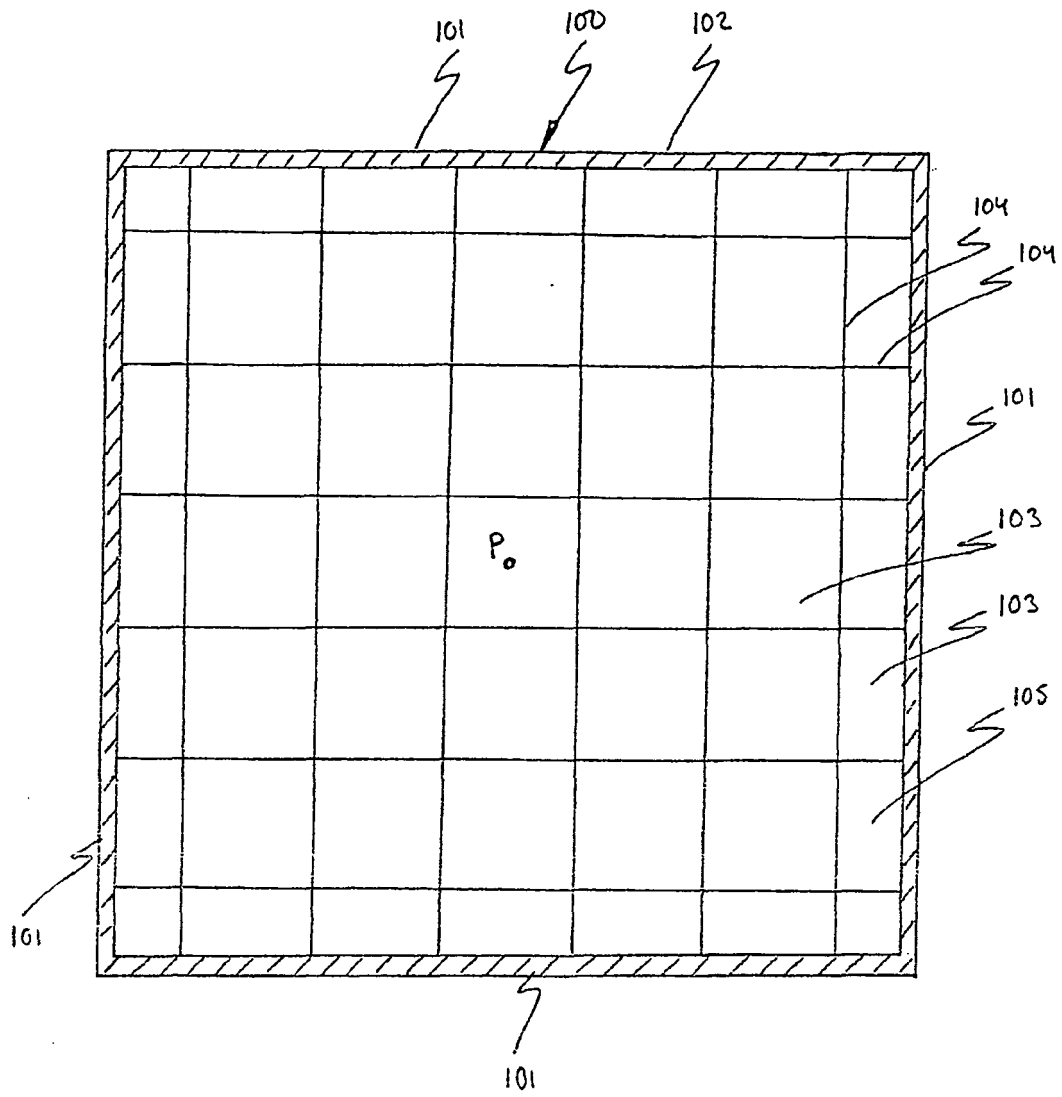
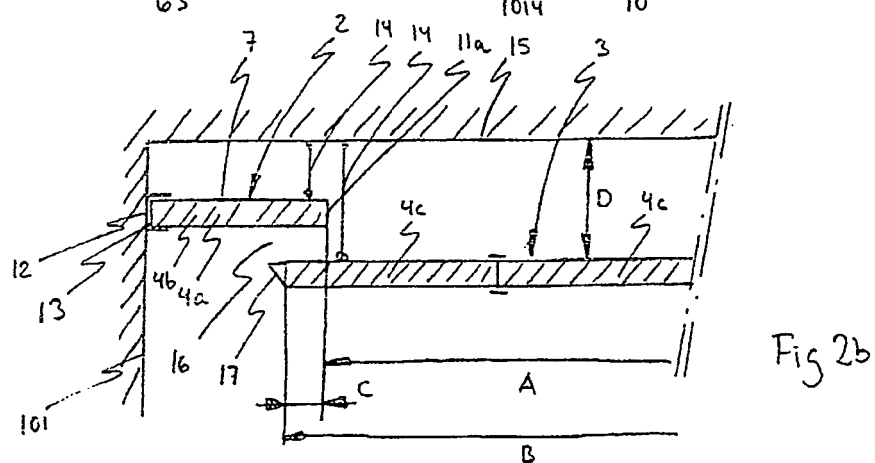
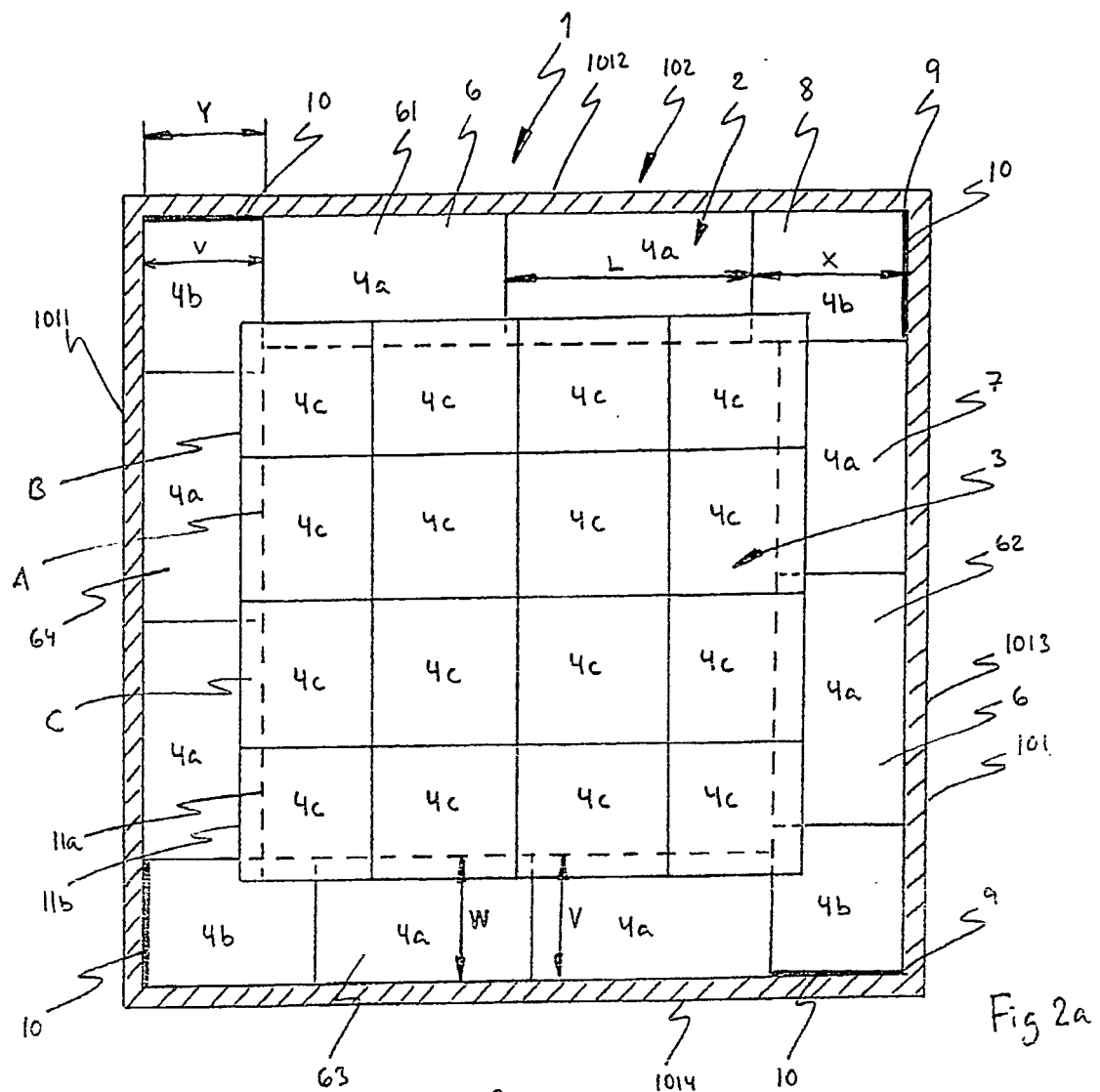


Fig 1



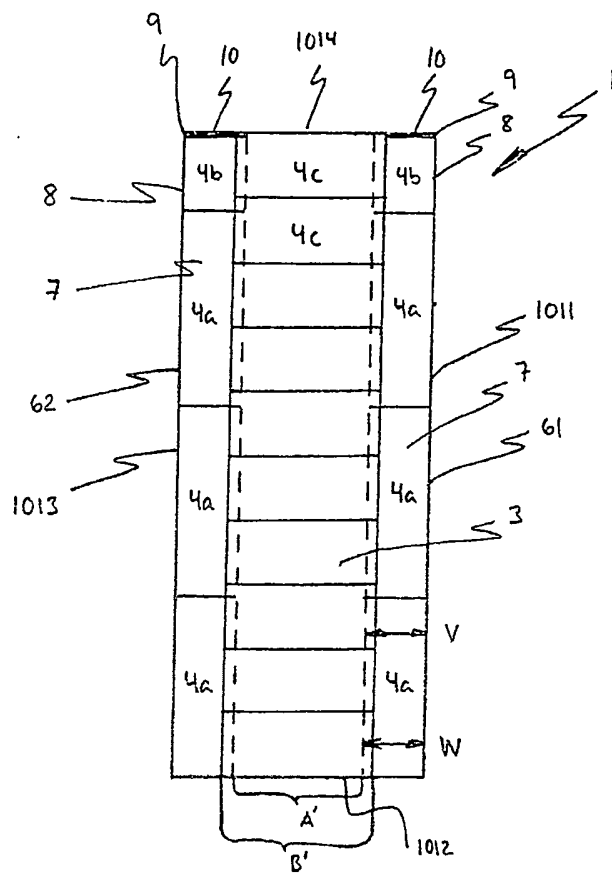


Fig 3a

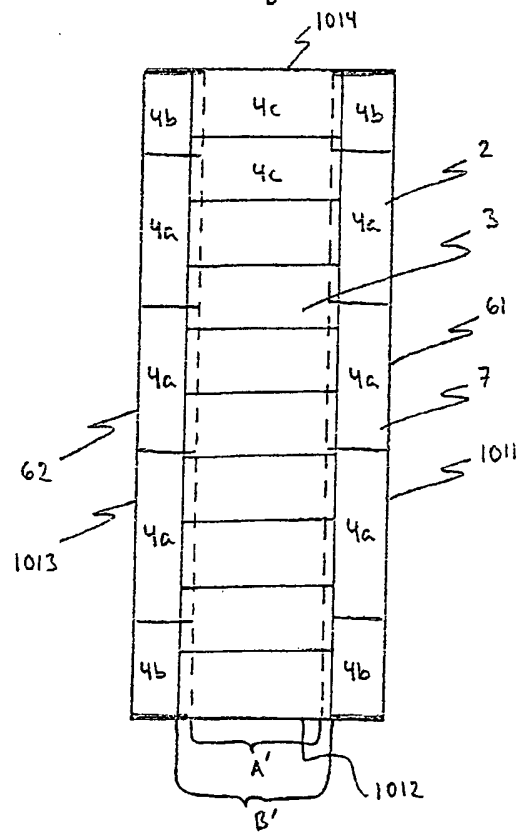


Fig 3b

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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