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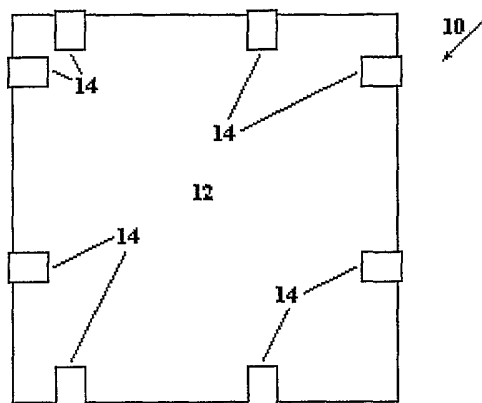
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(54) Title: TILE, TILING ACCESSORY AND APPARATUS FOR DISPENSING ADHESIVE FOR A TILE



(57) Abstract: The invention consists of a
tile (10) or a tiling accessory for attachment
to a conventional tile, each including a
levelling member for levelling the tile upon
a surface. The tile or tiling accessory may
also include a spacing member for defining
a separation between adjacent tiles. A
single member may perform both levelling
and spacing functions. The tile and tiling
accessory enable tiles to be attached to a
surface without first coating the surface with
adhesive, and obviates the need to level and
space the tiles once affixed. The invention
includes methods of using the tile and tiling
accessory, and includes also an apparatus
and method for dispensing adhesive for a
tile, wherein only a predetermined amount
of adhesive is dispensed. The invention
is applicable to wall or floor tiles used for
decorative or protective purposes.

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TILE, TILING ACCESSORY AND APPARATUS FOR DISPENSING ADHESIVE FOR A TILE

The present invention relates to a tile and to a tiling accessory for use in the decoration and protection of walls and floors in houses or flats, for example,
5 or for use as slabs on the pavement.

The present invention relates also to a dispenser for adhesive.

Background of the Invention

10

Tiles have been used for the decoration and protection of walls and floors for millennia.

The use of tiles is widespread throughout the world, especially by those
15 who are interested in "DIY". A massive industry has grown around the manufacture and use of tiles and a multitude of tools and accessories, methods and materials have been devised for use therewith.

A tiler usually employs a readily available, hard-setting and economical
20 adhesive, such as cement or mortar, in order to affix the tiles to a support surface therefor, such as a wall or a floor.

Initially, a bed of adhesive is applied to the support surface so that the tiles can be bedded therein, the bed being sufficiently deep for a secure bond to
25 form between the support surface and the tiles. The tiler spreads the adhesive uniformly to facilitate the levelling of the tiles. The tiles must be properly bedded and levelled before the adhesive sets.

Few aids are available. The resulting finish is largely dependent on the skill of the tiler; even for the most experienced of tilers this is a time-consuming and error-prone process.

- 5 If the adhesive behind the tiles has been spread unevenly, or the tiler has insufficient time or skill to properly level the tiles, the result will be unsatisfactory. This is particularly noticeable after grouting, when “lips” arise due to the uneven surface across the tiles.
- 10 The problem of levelling the tiles may be obviated by using a stronger adhesive that can be spread more thinly than mortar or cement, or by using tiles having an adhesive layer attached thereto. Although effective, these solutions are nonetheless expensive.
- 15 In addition to the levelling, before the adhesive sets and prior to grouting, the tiles must be positioned uniformly so the jointing lines, between the side faces of the tiles, are neatly presented.

Numerous accessories and methods have been devised to assist the tiler in
20 spacing the tiles; for example, plastic crosses for affixing between tile edges are widely used and popular. The crosses, of uniform predetermined dimensions, are appropriately interspersed with the tiles in order to ensure that the jointing lines are spaced evenly and equidistantly. However, their application and use can be tricky and time-consuming.

25

GB Patent no. 751,869 discloses a tile having spacers incorporated therein.

Summary of the Invention

The present invention provides a tile having at least one levelling member
5 to directly contact a support surface onto which the tile is to be located and
to define separation of the tile from the support surface when the tile
adheres to said support surface by adhesive material between the support
surface and the tile.

10 The tile may include any one or more of the following features:-

- at least one spacing member to define separation of the tile from another
tile or object;
- a levelling member that is also a spacing member;
- a levelling member that defines the separation also of an adjacent tile
15 from the support surface;
- a levelling member that extends from a back face of the tile;
- a levelling member that is located on a side face of the tile;
- the levelling and spacing members, when the tile is placed adjacent
another such tile in a first orientation, abut against the levelling and
20 spacing members of that other tile;
- when the other tile is in a second orientation, the levelling and spacing
members of the tiles do not abut against one another;
- a plurality of levelling members that supports the tile parallel with the
support surface;
- 25 • a single levelling member that supports the tile parallel with the support
surface;
- a levelling member that is located towards the periphery of the tile and
that extends from both a back face and a side face thereof;
- a levelling member is located at a corner of the tile;

- a region of the tile to which adhesive material is applied comprises a rough, irregular or otherwise non-smooth region to enhance contact with adhesive material.

5 The present invention also provides a tiling accessory having at least one levelling member to directly contact a support surface onto which a tile is to be located and to define separation of the tile from the support surface when the tile adheres to said support surface by adhesive material between the support surface and the tile.

10

The tiling accessory may include any one or more of the following features:-

- at least one spacing member to define separation of the tile from another tile or object;
- 15 • a levelling member that is also a spacing member;
- a levelling member that defines also the separation of an adjacent tile from the support surface;
- a tiling accessory that cooperates with at least one other tiling accessory to support the tile parallel with the support surface;
- 20 • a single tiling accessory that supports the tile parallel with the support surface;
- a levelling member that is located towards the periphery of the tile and extends from both a back face and a side face thereof;
- two arms which, when the accessory is not attached to a tile, are at an acute angle;
- 25 • ribbing for enhancing friction between the accessory and the tile;
- the levelling member is formed by a dimple in a surface of the accessory, thus reducing the amount of material necessary to form the levelling member;

- the levelling member separates the tile from the support surface by a distance selected from a predetermined range of distances, for facilitating tiling where the support surface is uneven;
- the tiling accessory may be made of a compactable material;
- 5 • the tiling accessory may include a compactable feature;
- an adhesive layer on the tiling accessory.

The present invention also provides a method of tiling comprising the steps of applying adhesive to the back of a tile but not to levelling member(s) on
10 the tile; pressing the tile onto a support surface for the levelling member(s) of the tile to be in direct contact with the support surface and the adhesive contacts both the tile and the support surface; and positioning the tile in a desired position relative to any other tiles already affixed to the support surface.

15

The present invention also provides a method of tiling using a tiling accessory comprising the steps of affixing at least one tiling accessory to a tile; applying adhesive to the back of the tile but not to levelling member(s); pressing the tile onto a support surface for the levelling member(s) of the at
20 least one tiling accessory to be in direct contact with the support surface and the adhesive contacts both the tile and the support surface; and positioning the tile in a desired position relative to any other tiles already affixed to the support surface.

25 The present invention also provides an apparatus for dispensing adhesive for a tile comprising a reservoir for adhesive; a mechanism to extract adhesive from the reservoir; and a mechanical stop to restrict further movement of the mechanism once a predetermined point is reached.

The present invention also provides a method of dispensing adhesive for a tile comprising the steps of providing a reservoir of adhesive, and dispensing a predetermined amount of adhesive from the reservoir for application to a tile or support surface therefor.

5

Advantages of the Present Invention

The present invention as described herein may provide any one or more of the following advantages:

10 a tile according to the present invention which may be levelled quickly and accurately;

a tile which may be spaced from other tiles quickly and accurately;

a tile which may still be levelled and/or spaced quickly and accurately, even when cut;

15 the amount of adhesive necessary to affix a tile can be reduced;

the same material can be used for adhesion to a support surface and for grouting;

a tile or tiling accessory according to the present invention which can be manufactured simply and economically;

20 little or no experience or skill in tiling is necessary in the use of a tile or tiling accessory according to the present invention;

once a tile according to the present invention has been properly positioned, other tiles are placed in position relative to the first, thereby obviating any further care or attention in their placement.

25

The present invention is applicable to tiles and tiling accessories for use in the decoration and protection of walls or floors in houses or flats, for example, or for use as slabs on the pavement.

A tile or tiling accessory according to the present invention provides a significantly different approach to the operation of tiling, involving a novel method of applying adhesive to tiles and of using tiles and accessories.

5 **General Description of the Present Invention**

In order that the present invention may more readily be understood, a description is now given, by way of example only, reference being made to the accompanying drawings in which:-

10 Figure 1 is a plan view from below of a tile embodying preferred features of the present invention;

 Figure 2 is a plan view from above of the tile of Figure 1;

 Figure 3 is a side elevation view of the tile of Figure 1;

 Figure 4 is a plan view from below of several of the tiles of Figure 1
15 in one orientation;

 Figure 5 is a plan view from below of the tiles of Figure 4 in another orientation;

 Figure 6 is a plan view from below of an another tile embodying features of the present invention;

20 Figure 7 is a plan view from below of another tile embodying features of the present invention;

 Figure 8 is a plan view from below of another tile embodying features of the present invention;

 Figure 9 is a plan view from below of another tile embodying
25 features of the present invention;

 Figure 10 is a side elevation view of the tile of Figure 9;

 Figure 10a is a side elevation view of a variation to the tile of Figure
9;

 Figure 11 is plan view from below of another tile embodying
30 features of the present invention;

Figure 12 a cross-section view across line 11-11 of Figure 11;

Figure 13 is plan view from below of another tile embodying features of the present invention;

Figure 14 a cross-section view across line 13-13 of Figure 11;

5 Figure 15 is a plan view from below of another tile embodying features of the present invention;

Figure 16 is a side elevation view of the tile of Figure 15;

Figure 17 is a plan view from above of various tiling accessories embodying features of the present invention;

10 Figure 18 is a side elevation view of the tiling accessories of Figure 17;

Figure 19 is plan view from above of several tiling accessories as in Figure 17 in use;

15 Figure 20 is a plan view from above of another tiling accessory embodying features of the present invention;

Figure 21 is a plan view from above of another tiling accessory embodying features of the present invention;

Figure 22 shows perspective views of other tiling accessories embodying features of the present invention;

20 Figure 23 is a plan view from above of another tiling accessory embodying features of the present invention;

Figure 24 shows an elevation of part of the tiling accessory of Figure 23;

25 Figures 25a to 25f show another tiling accessory embodying features of the present invention.

Detailed Implementations of the Present Invention

Figures 1 to 3 show a tile 10 embodying features of the present invention.

30

Intended to be attached to a support surface 100 such as a wall or floor, the tile 10 comprises a back face 12, a top face 13 typically having decoration including colouring and/or patterning, and side faces 15 extending between the top face 13 and the back face 12.

5

The tile 10 has eight levelling members 14 to directly contact a support surface 100 for the tile 10 and to define separation of the tile 10 from the support surface 100 when the tile 10 adheres to said support surface 100 by adhesive material between the support surface 100 and the tile 10.

10

The levelling members 14 are arranged to extend backwardly in a generally normal direction relative to the back face 12, causing the back face 12 to be spaced at a predetermined distance from the support surface 100 when positioned adjacent and facing the support surface 100 with the levelling members 14 in contact therewith.

15

Figure 3 shows the tile 10 on the support surface 100. The levelling members 14 contact the support surface 100, separating the tile 10 therefrom. For reasons of clarity, no adhesive is shown in Figure 3.

20

As the levelling members 14 come into direct contact with the support surface 100, substantially no adhesive must be applied to the levelling members 14; the levelling members 14 here protrude from the back face 12, so that adhesive can be applied to a region thereof.

25

In order to affix a tile 10 to a support surface 100, a tiler simply applies adhesive to the appropriate part of the tile 10 (which may be the back face 12, any recess therein or a recess in a levelling member 14, for example), and presses the tile 10 onto the support surface 100 so that each levelling

member 14 abuts the support surface 100. The adhesive is spread between the back face 12 and the support surface 100 by the pressing action.

Alternatively, the tiler can apply adhesive instead to the support surface 100, then press the tile 10 onto the support surface 100 as before.

The keying between a tile 10 (or any other tile described herein) and the adhesive may be improved by roughening the back face 12 or providing ribs thereon, thereby increasing the surface area that contacts the adhesive.

10

Where the levelling members 14 are intended to support a tile 10 parallel with the support surface 100, the levelling members 14 must protrude by an equal distance (compared with each other) relative to the back face 12, and must also be sufficiently evenly distributed around the tile 10.

15

Where a tile 10 is used against an edging trim, for example, or at a point where the elevation of the support surface 100 varies, it may be desirable to reduce one or more of the levelling members 14 so that the tile 10 remains parallel with the support surface 100 even when against the trim.

20

In the above situation, the tile 10 can be supported parallel with the support surface 100 by allowing one or more levelling members 14 to protrude relative to the back face 12 by a lesser or greater distance relative to others, for example by selective cutting or filing of the levelling members 14 or by providing removable sections thereon.

25

Altering the dimensions of all levelling members 14 varies the separation between the back face 12 and the support surface 100. The gap between the back face 12 and the support surface 100 is typically arranged to be approximately 2mm, but may be 3mm or any suitable dimension. A suitably

30

large gap, for example 3mm, mitigates the problem caused by an uneven surface, and allows the adhesive to contact the surface.

In the embodiment shown in Figures 1 to 3, the levelling members 14 are lugs, protruding from the back face 12 of the tile 10. Although the levelling members 14 as shown are attached to the back face 12, they could be attached additionally or alternatively elsewhere, for example to the side faces 15.

In Figures 1 to 3, there are two levelling members 14 on each side of the tile 10. For a larger tile, more levelling members 14 could be interposed between those already present to increase stability. To meet the needs of packaging, further levelling members 14 could be located remote from the periphery of the tile 10, providing support to the centre of the tile 10.

For convenience of use and manufacture, the levelling members 14 are integrated with the tile 10.

The preferred embodiment of the present invention as shown in Figures 1 to 3, and particularly in Figure 4, includes also one or more spacing members extending in a direction parallel with a main face of the tile 10, and protruding beyond one or more side faces 15 thereof.

The spacing members space a side face 15 of the tile 10 from a surface 101 generally perpendicular to a main face of the tile 10, when the tile 10 is placed adjacent the surface 101. The surface 101 may be, for example, the side face of another tile, an edge trim or straight edge, a floor or a wall when the tile 10 is placed in a corner.

As can be seen, the levelling members 14 protrude slightly beyond the side faces 15 of the tiles 10. In this way, each levelling member acts also as a spacing member.

- 5 In a variant, the spacing members are instead formed separately to the levelling members, which spacing members may be lugs arranged on each side face 15 of the tile 10.

The combined levelling/spacing member is seen most easily from Figure 2,
10 which shows the top face 13 of the tile 10 with the levelling members 14 protruding from beneath the tile 10, thereby acting also as spacing members.

Preferably, the spacing members separate a side face 15 of a tile 10
15 equidistantly along its length from a surface 101.

The distance between the side faces 15 of two tiles 10, or between a side face 15 of a tile 10 and a surface 101, may be varied by altering the dimensions of the spacing members. Typically, the gap between a side face
20 15 of a tile 10 and a side face 15 of another tile 10 is arranged to be 1mm. Thus where the gap is defined by two spacing members, each protrudes from the tile edge by 0.5mm. The less the spacing member protrudes from the tile edge, the less vulnerable it is to breakage.

25 Figure 4 shows several instances of the tile 10 of Figures 1 to 3 in one arrangement.

As shown in Figure 4, the levelling/spacing members 14 are located on the tile 10 so as to abut against each other when the tiles 10 are placed
30 adjacently and in a particular orientation.

Here, levelling/spacing members 14a of tile 10a abut against levelling/spacing members 14b of tile 10b, while levelling/spacing members 14a of tile 10a abut against levelling/spacing members 14d of tile 10d, and
5 so on.

As illustrated in Figure 5, when the same tiles 10 as in Figure 4 are in a different orientation (rotated with respect to one another), the side faces 15 abut, rather than the levelling/spacing members 14.
10

Here, side face 15a of tile 10a abuts against side face 15b of tile 10b, and so on.

Therefore, by simply reorienting the tiles 10, the positioning of the levelling/spacing members 14 as shown in Figures 1 to 5 allows the gap
15 between the side faces of the tiles 10 to be either present or absent, as desired.

Figure 6 illustrates an alternative embodiment of a tile 20 according to the
20 present invention.

Here, the levelling members 24 are elongate sections, which extend along the back face 12 in a direction parallel with the side faces 15.

25 Again, the levelling members 24 protrude slightly beyond the edges of the side faces 15, giving rise to levelling/spacing members 24.

Alternatively, as shown in Figure 7, a single levelling member 34 extends continuously around the periphery of the back face 12. The single levelling

member 34 protrudes beyond the side faces 15 as before, giving rise to levelling/spacing member 34.

Another embodiment of a tile 40 according to the present invention is shown in Figure 8. The tile 40 is similar to that of Figure 1, although the levelling/spacing members 44 are not positioned to allow different orientations of the tiles as shown in Figures 4 and 5.

Figures 9 and 10 illustrate an embodiment in which the levelling members 54, which here are lugs but could instead be elongate or continuous sections as described hereinbefore, are located on the side faces 15 of the tile 50 rather than the back face 12. In this case, the levelling members 54 also act as spacing members.

To accommodate grout, the levelling/spacing members 54 extend only partway up the side faces of the tile 50.

Figure 10a illustrates an arrangement in which the levelling/spacing members 54a level also an adjacent tile (not shown). A similar arrangement could be employed in other embodiments described herein.

Figure 11 illustrates yet another embodiment of a tile 60 in which, as an alternative to the levelling members protruding from the tile, a recess 68 is provided to accept adhesive. In this case, the levelling member 64 comprises the back face 12.

Figure 12 shows a cross-section view across line 11-11 of Figure 11.

The tile 60, as with any other tile described herein, may incorporate sloping side faces 65. When a side face 65 of a tile 60 abuts against a side face of an

adjacent such tile, the lower edges of the side faces space the tiles, while grout is accommodated in the gap towards the upper edge of the side faces.

Figure 13 illustrates another embodiment of a tile 70 according to the present invention. Figure 14 shows a cross-section view across line 13-13 of Figure 13.

The tile 70 comprises a levelling member 74 extending generally around the back face 12 of the tile 70, with a recess 78 formed in the levelling member 74.

Adhesive may be applied to the recess 78, provided that the levelling member 74 is able to directly contact the support surface 100. In a variant, the levelling member 74 is annular in form.

Figures 15 and 16 illustrate another embodiment of a tile 80 according to the present invention.

The tile 80 comprises a levelling member 84 at each corner of the back face thereof. The levelling members extend beyond the side faces 15 of the tile, becoming levelling/spacing members 84.

Advantageously for packaging arrangements, the levelling members 84 support the tile at its corners.

As mentioned above, a tile according to the present invention may provide significant advantages over a conventional tile.

In order to affix such a tile to a support surface, a tiler simply applies adhesive to an appropriate part of the tile, presses the tile onto the support

surface approximately in place until each levelling member is in contact with the support surface, and then slides the tile into the desired position.

5 The spacing members, when abutting against the spacing members of other tiles already affixed to the surface, ensure that the tile is properly placed in relation to those other tiles; a uniform gap suitable for grouting between the jointing lines of the tiles is provided.

10 The problems, for example the “lips”, incurred when levelling the prior art tiles by hand and eye are obviated; the levelling members behind the tile ensure that the tile is level with the support surface, while the spacing members ensure that the tile is square with other tiles already affixed. An amateur tiler may achieve a professional standard finish in little time with minimum care.

15

Generally, due to the deviation of typical floors and walls from a true horizontal or vertical line, tiling does not begin using a floor or wall to align the tiles. Conventionally, a tiler defines a horizontal or vertical line, against which the initial row of tiles is set. A straight edge, such as a length of wood
20 or a line drawn upon the support surface, defines said horizontal or vertical line. Any gap left towards the wall or floor is filled with cut tiles.

25 With the present invention, the first tile (but only the first) must still be squarely positioned, which position may be achieved by use of a conventional straight edge or vertical line. However, any subsequent tile is then positioned relative to an antecedent tile, whereupon the levelling and spacing members automatically level and align the subsequent tile.

30 A sufficient amount of adhesive should be used to form a secure bond between the back of the tile and the support surface. Preferably, when the

tile is pressed onto the support surface, the adhesive is compacted and spreads, increasing the surface area thereof in contact with both the tile and support surface.

- 5 As there is no need to initially cover the support surface with adhesive, the tiling is completed quickly using a small amount of adhesive. In fact, savings of up to 75% may be possible, as the adhesive is used for adhesion only, rather than additionally for bedding and levelling the tiles. Furthermore, the same material may be used both for adhesion and for
10 grouting.

A tile may be still be levelled and/or spaced quickly and accurately even when cut, if the levelling/spacing members are distributed sufficiently evenly around the tile.

15

As mentioned hereinbefore, the present invention also provides a tiling accessory, to assist the tiler in the levelling and spacing of conventional tiles.

- 20 The tiling accessory includes at least one levelling member to directly contact a support surface for the tile to define separation of the tile from a support surface when the tile adheres to said support surface by adhesive material between the support surface and the tile.

- 25 Figures 17 and 18 illustrate various embodiments of a tiling accessory according to the present invention.

The tiling accessory 110 comprises a levelling member 114. The tiling accessory 110 fits around a corner of the tile, such that several tiling

accessories 110 are needed to properly level a tile. Preferably, one tiling accessory 110 is used for each corner of the tile.

Advantageously, the tiling accessory 110, as with any other tiling accessory
5 described herein, may have an adhesive layer thereon, perhaps with a protective sheet which can be peeled off.

Alternatively, the tiling accessory could be affixed to a tile using the tiling adhesive or other similar adhesive, such as PVA.

10

By using adhesive in this manner, tiling accessories 110 can be attached to a tile or to the support surface 100, prior to affixing the tile to the support surface 100.

15 The tiling accessory 110 also includes a spacing member 116, for separating a side face of the tile from a perpendicular surface 101, such as the side face of another tile, an edge trim or straight edge, or a floor or wall, for example.

Figure 19 illustrates four tiles, with four tiling accessories 110a to 110d
20 beneath a corner of each tile.

When several tiles are placed adjacent one another as in Figure 19, each tile having a tiling accessory 110 attached to the four corners thereof, the spacing members 116 of the respective tiling accessories 110 cooperate to
25 properly space the tiles.

The tiling accessories 120 or 130, as illustrated in Figure 17, provide an alternative to the use of several tiling accessories 110 as described above.

In an arrangement as shown in Figure 19, the tiling accessory 130 may be used equivalently to four tiling accessories 110, whereas the tiling accessory 120 may appropriately be used where the horizontal or vertical limit of the tiling area is reached. In a corner of the tiling area, the use of a tiling
5 accessory 110 is more appropriate. In a variant to the tiling accessory 130, the spacing member 136 extends beyond the edge of the levelling member 134.

Figure 18 shows how the spacing members 116, 126, 136 extend in a
10 direction perpendicular to the levelling members 114, 124, 134 of the tiling accessories 110, 120, 130, so that the accessories may simultaneously level and space tiles.

Tiling accessory 140 as illustrated in Figure 20 represents another
15 embodiment of a tiling accessory according to the present invention.

The levelling member 144 of tiling accessory 140 extends continuously around the periphery of a tile (not shown), whilst leaving a central portion of the back face of the tile exposed so that adhesive can be applied thereto.
20 A spacing member 146 extends in a direction perpendicular to the levelling member 144.

In a variant to the tiling accessory 140, the levelling member extends only partway round the periphery of a tile, as in tiling accessory 150 shown in
25 Figure 21.

Figure 22 illustrates a tiling accessory 160 in its simplest form according to the present invention.

The tiling accessory 160 may be attached to any point on the back face of a tile. If the tiling accessory 160 is attached to the back face of a tile so as to protrude slightly beyond a side face thereof, the tiling accessory 160 acts also as a spacing member.

5

A number of such tiling accessories 160 are necessary to support a tile parallel with a support surface 100. The tiling accessories may be arranged in a similar fashion to the levelling members 14 of the tile 10 described hereinbefore.

10

The tiling accessory 160 can be attached alternatively to a side face of a tile, rather than the back face. The tiling accessory 160 acts as a levelling member when protruding beyond the back face of the tile.

15 The tiling accessory 170 shown in Figure 22 comprises both a levelling member and a spacing member, and is intended to be attached to both the back face and a side face of a tile. Tiling accessory 180, also shown in Figure 22, is similar to tiling accessory 170, except that it assists in levelling two adjacent tiles.

20

Tiling accessory 200 as illustrated in Figures 23 and 24 is another embodiment of a tiling accessory according to the present invention.

25 The tiling accessory 200 includes a levelling member 204 and a spacing member 206 as before, two arms 207, and friction-enhancing means consisting of ribbing 208 disposed towards the distal end of each arm 207.

When the accessory is not attached to a tile, the two arms 207 are at an acute angle, which in this embodiment is 45 degrees.

30

When the accessory is attached to the corner of a tile, the two arms 207 are forced away from one another such that the angle between them is approximately 90 degrees. Elastic forces in the accessory 200 tend to cause the arms 207 to move towards one another. The ribbing 208 enhances friction between the accessory 200 and tile, thus preventing the accessory 200 from becoming detached.

Another embodiment of a tiling accessory according to the invention includes a levelling member which separates the tile from the support surface by a distance selected from a predetermined range of distances. In this way, where the support surface is uneven, in that it slopes or includes bumps or other deviations from a planar surface, a tiling accessory having a suitable levelling member can be selected, thus allowing a level surface across the tiles to be achieved.

In a variant to the above embodiment, the tiling accessory is made of a compactable material, such that a levelling member can be compressed to a suitable thickness. In another variant, the tiling accessory includes a compactable feature consisting of a corrugated region.

Tiling accessory 210 as shown in Figures 25a to 25f is another embodiment of a tiling accessory according to the present invention.

The tiling accessory 210 is made of material, preferably plastic, having a uniform thickness. As best seen in Figure 25d, the levelling member 214 is formed by a dimple 211 in a surface 213 of the accessory 210, while the material extends perpendicularly from the surface 213, and in use around the edge of a tile, to form the spacing member 216. The dimple 211 reduces the amount of material necessary to form the levelling member 214, thus reducing the curing time of the plastic and the production time of the tiling

accessory 210. In this embodiment, the plastic is 1mm thick, but it is to be understood that thinner material would have a shorter curing time while sacrificing strength, and vice versa. In use, the separation between tile and support surface is 3mm, such that a 2mm gap exists between the dimple 211
5 and tile.

A tiling accessory as described herein may be any suitable material, for example a plastics material, polycarbonate or nylon.

10 A tiling accessory according to the present invention, when attached to a conventional tile or directly to a support surface, allows the tile to be used in a similar fashion to a tile according to the present invention as described hereinbefore and, therefore, provides similar advantages.

15 Tiling accessories of the present invention may be provided in a variety of different thicknesses and/or other dimensions. Thus, when a person is tiling an uneven or sloping floor or wall, appropriate thicknesses of accessories can be selected to ensure the final tiled top surface is suitably vertical or horizontal.

20

The present invention provides also a dispenser for tiling adhesive.

The dispenser comprises a reservoir for storing adhesive, an aperture in said reservoir, and a mechanism for extracting the adhesive from the reservoir.

25 The mechanism compresses the adhesive stored in the reservoir, thereby causing the adhesive to escape through the aperture.

To ensure that a suitable amount of adhesive is applied to the back of each tile, a stop on the mechanism of the adhesive dispenser is provided so that

only a predetermined amount of adhesive is dispensed during each use of the mechanism.

Where the mechanism is a trigger or pump, a simple mechanical stop is
5 arranged thereon to restrict the mechanism from further motion once an appropriate amount of adhesive has been dispensed.

The amount of adhesive necessary is dependent on various factors such as the dimensions and weight of the tile, and further conditions such as the
10 porosity and water content of the support surface; the amount of adhesive required may be set prior to use or sale of the dispenser.

In order for any tile or tiling accessory according to the present invention to work, a support surface, such as a wall or floor, is required to be sufficiently
15 flat; experience shows that around 80% of walls are such. The levelling of non-flat walls prior to tiling is in any case good practice, and is not a time-consuming operation.

The invention as described herein is intended to be limited only by the
20 appended claims; it will be apparent that minor modifications to the embodiments described herein may be made by a person skilled in the art without departing from the scope of the claims.

CLAIMS

1. A tile having at least one levelling member to directly contact a support surface onto which the tile is to be located and to define separation
5 of the tile from the support surface when the tile adheres to said support surface by adhesive material between the support surface and the tile.
2. A tile as in Claim 1 further comprising at least one spacing member to define separation of the tile from another tile or object.
- 10 3. A tile as in Claim 2 wherein a levelling member is also a spacing member.
4. A tile as in any preceding claim wherein a levelling member defines
15 also the separation of an adjacent tile from the support surface.
5. A tile as in any preceding claim wherein a levelling member extends from a back face of the tile.
- 20 6. A tile as in any of Claims 1 to 4 wherein a levelling member is located on a side face of the tile.
7. A tile as in any of Claims 3 to 6 wherein the levelling and spacing members, when the tile is placed adjacent another such tile in a first
25 orientation, abut against the levelling and spacing members of that other tile.
8. A tile as in Claim 7 wherein, when the other tile is in a second orientation, the levelling and spacing members of the tiles do not abut
30 against one another.

9. A tile as in any preceding claim wherein a plurality of levelling members supports the tile parallel with the support surface.

5 10. A tile as in any of Claims 1 to 8 wherein a single levelling member supports the tile parallel with the support surface.

11. A tile as in any of Claims 3 to 10 wherein a levelling member is located towards the periphery of the tile and extends from both a back face
10 and a side face thereof.

12. A tile as in Claim 9 or Claim 11 wherein a levelling member is located at a corner of the tile.

15 13. A tile according to any preceding claim wherein a region of the tile to which adhesive material is applied comprises a rough, irregular or otherwise non-smooth region to enhance contact with adhesive material.

14. A tiling accessory having at least one levelling member to directly
20 contact a support surface onto which a tile is to be located and to define separation of the tile from the support surface when the tile adheres to said support surface by adhesive material between the support surface and the tile.

25 15. A tiling accessory as in Claim 14 further comprising at least one spacing member to define separation of the tile from another tile or object.

16. A tiling accessory as in Claim 15 wherein a levelling member is also a spacing member.

30

17. A tiling accessory as in any of Claims 14 to 16 wherein a levelling member defines also the separation of an adjacent tile from the support surface.
- 5 18. A tiling accessory as in any of Claims 14 to 17 wherein a tiling accessory cooperates with at least one other tiling accessory to support the tile parallel with the support surface.
- 10 19. A tiling accessory as in any of Claims 14 to 18 wherein a single tiling accessory supports the tile parallel with the support surface.
20. A tiling accessory as in any of Claims 14 to 19 wherein a levelling member is located towards the periphery of the tile and extends from both a back face and a side face thereof.
- 15 21. A tiling accessory as in any of Claims 14 to 18 having two arms which, when the accessory is not attached to a tile, are at an acute angle.
- 20 22. A tiling accessory as in any of Claims 14 to 21 further comprising ribbing for enhancing friction between the accessory and the tile.
- 25 23. A tiling accessory as in any of Claims 14 to 22 wherein the levelling member is formed by a dimple in a surface of the accessory, thus reducing the amount of material necessary to form the levelling member.
- 30 24. A tiling accessory as in any of Claims 14 to 23 wherein the levelling member separates the tile from the support surface by a distance selected from a predetermined range of distances, for facilitating tiling where the support surface is uneven.

25. A tiling accessory as in any of Claims 14 to 24 wherein the tiling accessory is made of a compactable material.
26. A tiling accessory as in any of Claims 14 to 25 wherein the tiling
5 accessory includes a compactable feature.
27. A tiling accessory as in any of Claims 14 to 26 further comprising an adhesive layer thereon.
- 10 28. A method of tiling comprising the steps of:
applying adhesive to the back of a tile but not to levelling member(s)
on the tile;
pressing the tile onto a support surface for the levelling member(s) of
the tile to be in direct contact with the support surface and the adhesive
15 contacts both the tile and the support surface; and
positioning the tile in a desired position relative to any other tiles
already affixed to the support surface.
29. A method of tiling using a tiling accessory comprising the steps of:
20 affixing at least one tiling accessory to a tile;
applying adhesive to the back of the tile but not to levelling
member(s);
pressing the tile onto a support surface for the levelling member(s) of
the at least one tiling accessory to be in direct contact with the support
25 surface and the adhesive contacts both the tile and the support surface; and
positioning the tile in a desired position relative to any other tiles
already affixed to the support surface.
30. An apparatus for dispensing adhesive for a tile comprising:
30 a reservoir for storing adhesive;

a mechanism to extract adhesive from the reservoir; and
a mechanical stop to restrict further movement of the mechanism
once a predetermined point is reached.

- 5 31. A method of dispensing adhesive for a tile comprising the steps of
providing a reservoir of adhesive, and
dispensing a predetermined amount of adhesive from the reservoir
for application to a tile or support surface therefor.

10

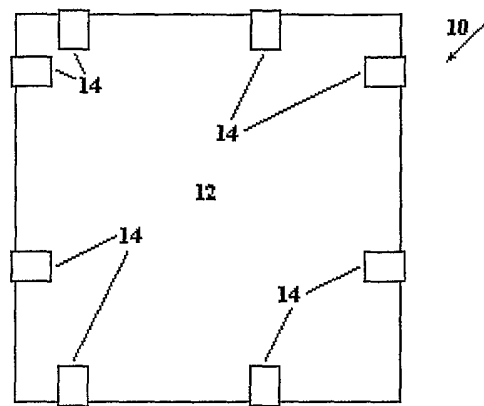


Figure 1

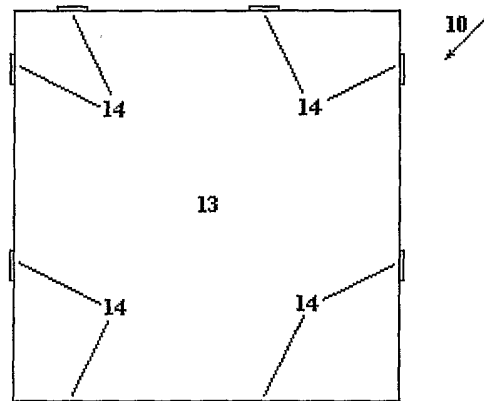


Figure 2

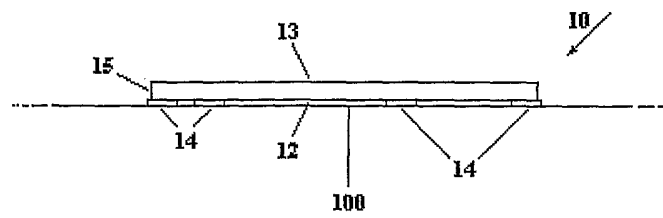


Figure 3

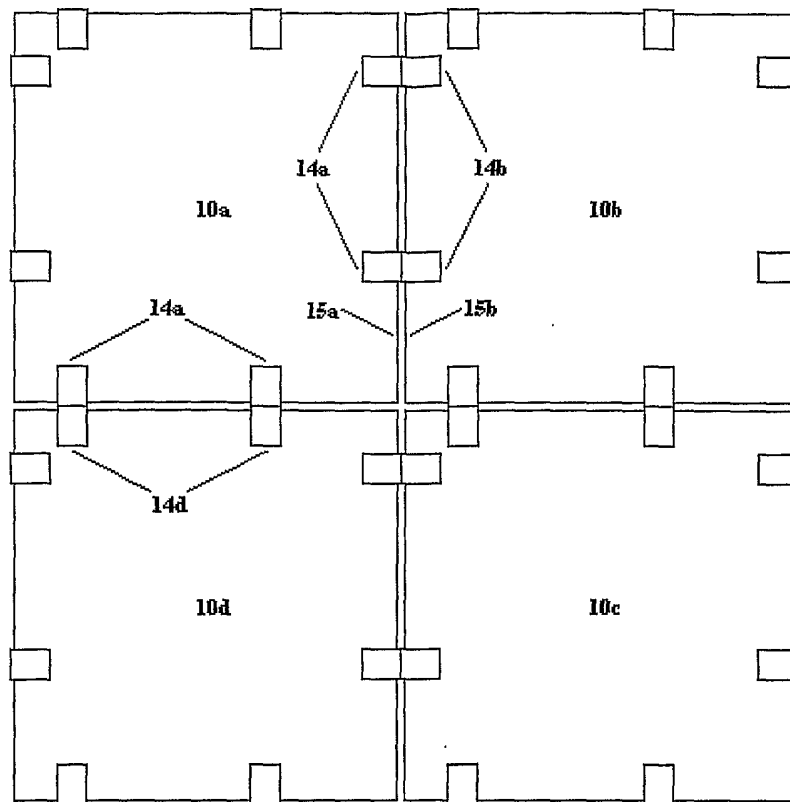


Figure 4

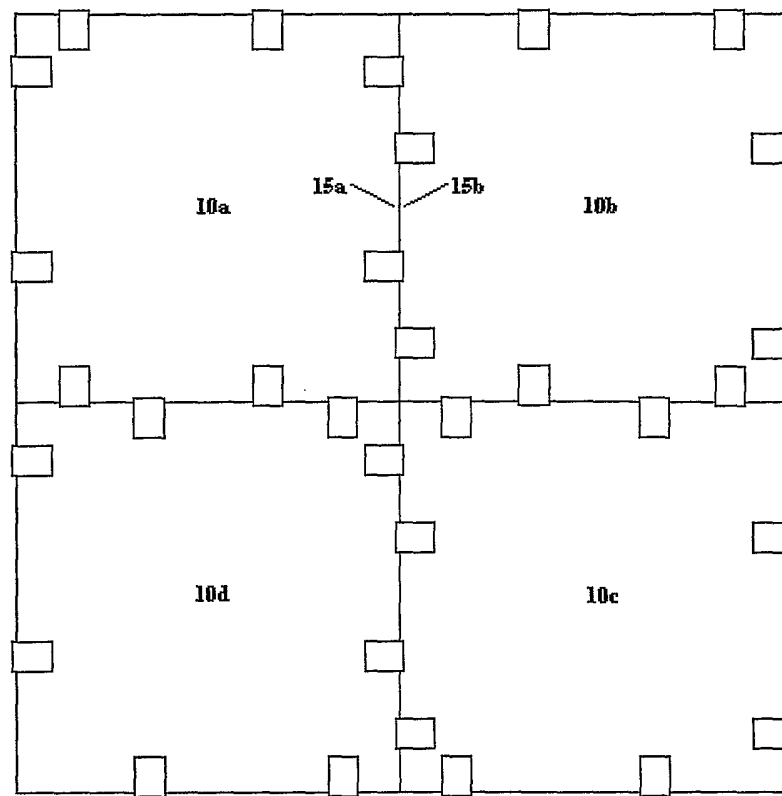


Figure 5

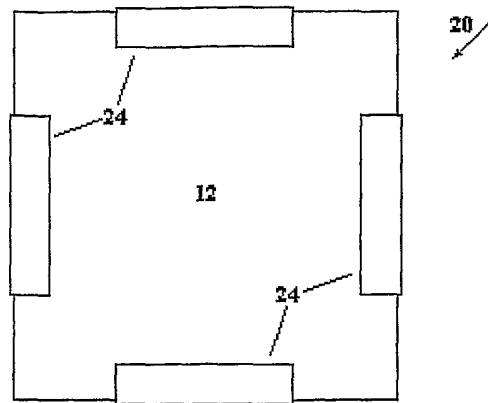


Figure 6

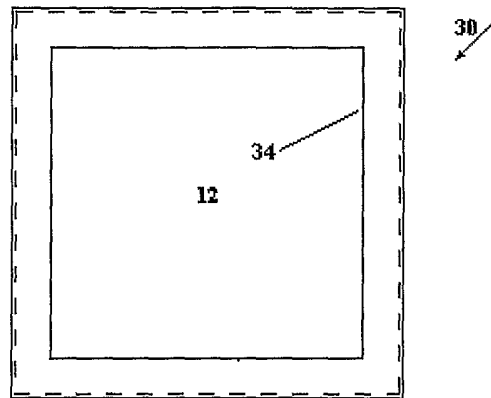


Figure 7

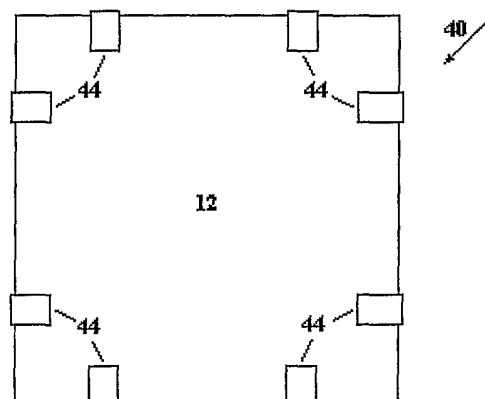


Figure 8

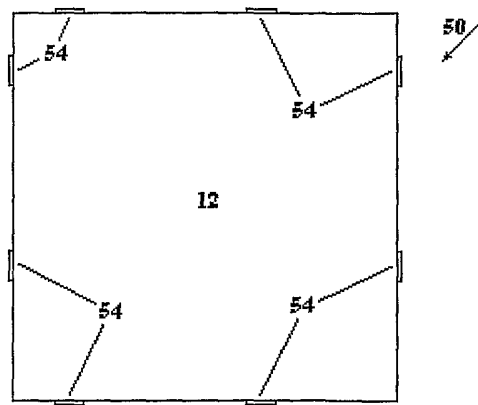


Figure 9

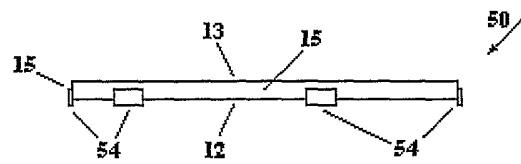


Figure 10

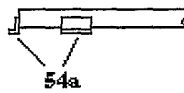


Figure 10a

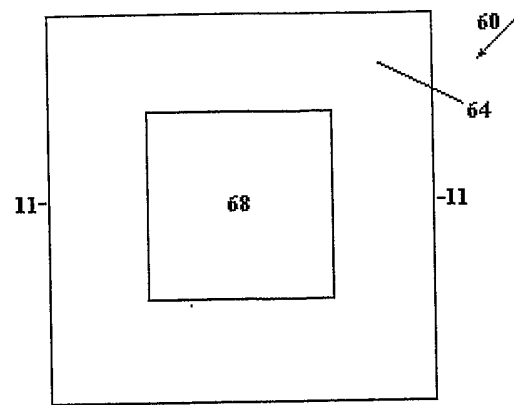


Figure 11

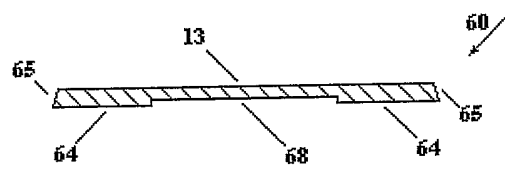


Figure 12

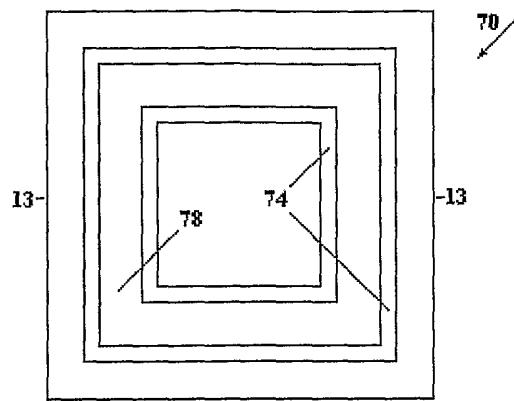


Figure 13

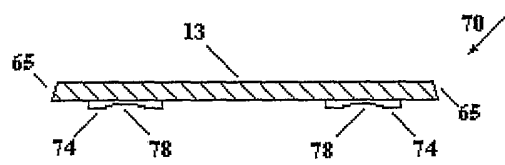


Figure 14

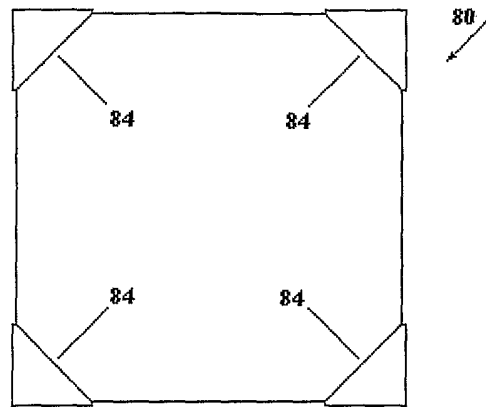


Figure 15

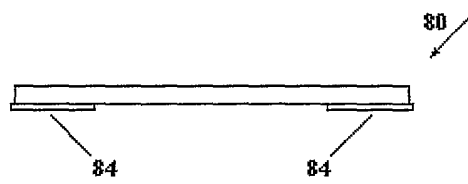


Figure 16

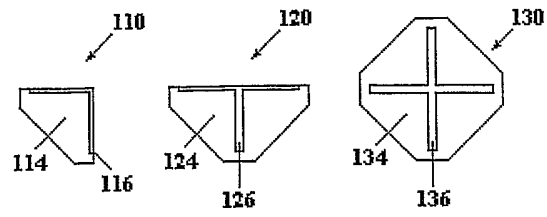


Figure 17

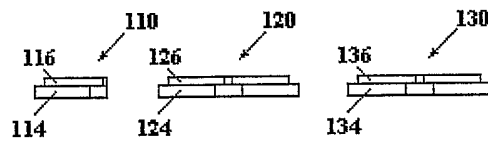


Figure 18

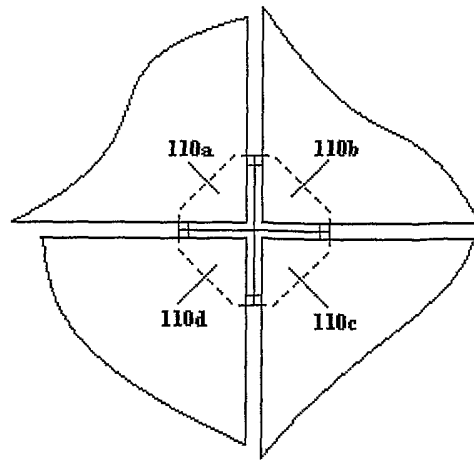


Figure 19

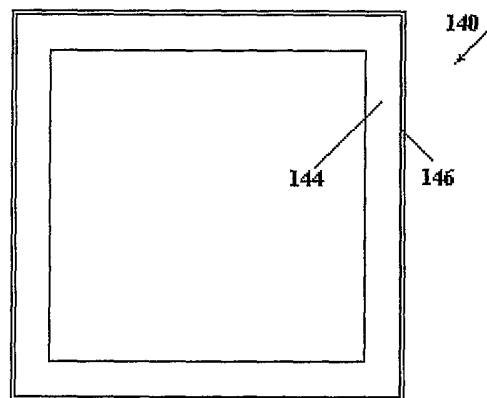


Figure 20

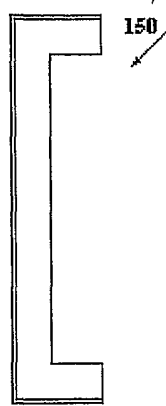


Figure 21

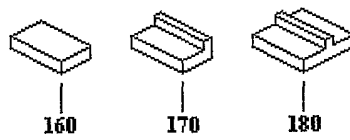


Figure 22

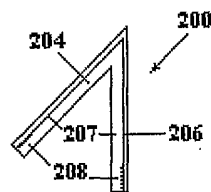


Figure 23

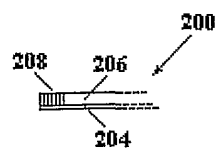


Figure 24

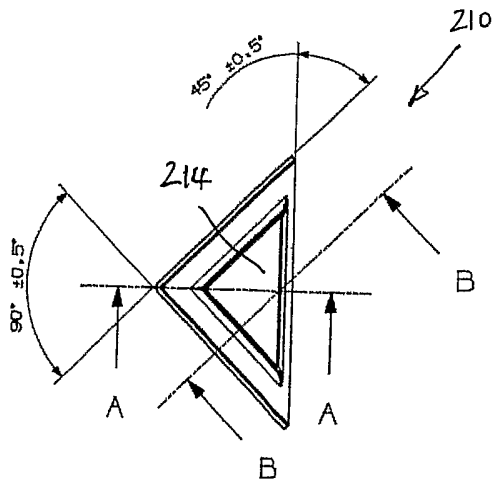


Figure 25a

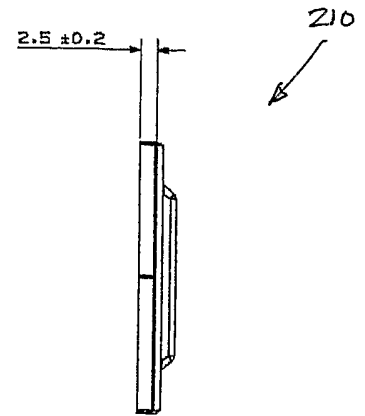


Figure 25b

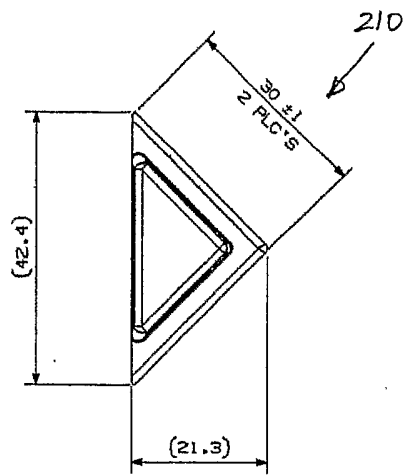


Figure 25c

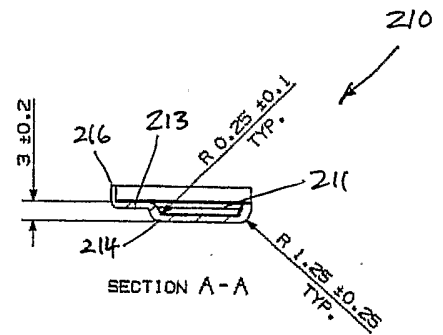


Figure 25d

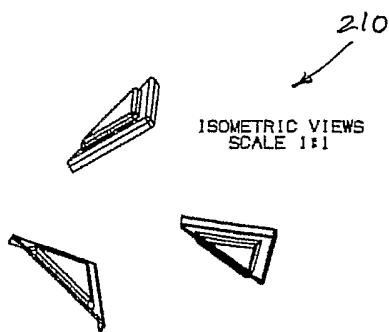


Figure 25e

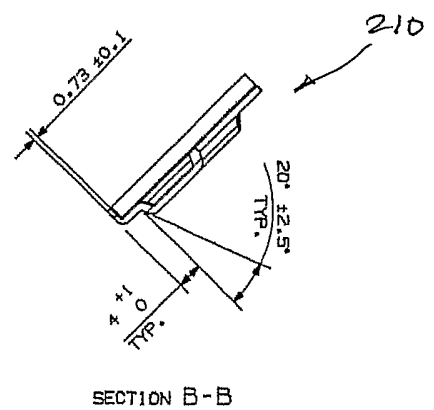


Figure 25f

INTERNATIONAL SEARCH REPORT

onal Application No
PCT/GB2004/002295

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 E04F15/02 E04F15/08 E04F13/14 E04F13/08 B05C17/005
 E04F21/08
 According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
 Minimum documentation searched (classification system followed by classification symbols)
 IPC 7 E04F B05C
 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
 EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 503 654 A (COSENTINO EDWARD) 12 March 1985 (1985-03-12)	1-6, 9, 11, 13-18, 20, 24-27
Y	column 3, line 4 - column 4, line 29; figures	29
X	FR 1 230 511 A (DELCOURT PIERRE) 16 September 1960 (1960-09-16) page 1 figures	1, 4-9, 11, 14, 17, 20, 24-27
	----- -/--	

Further documents are listed in the continuation of box C. Patent family members are listed in annex.

* Special categories of cited documents :
 A document defining the general state of the art which is not considered to be of particular relevance
 E earlier document but published on or after the international filing date
 L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
 O document referring to an oral disclosure, use, exhibition or other means
 P document published prior to the international filing date but later than the priority date claimed
 T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
 X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
 Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
 & document member of the same patent family

Date of the actual completion of the international search 11 October 2004	Date of mailing of the international search report 22/10/2004
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Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Bouyssy, V
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INTERNATIONAL SEARCH REPORT

onal Application No
PCT/GB2004/002295

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>US 2 637 995 A (MANN ZELVERN W) 12 May 1953 (1953-05-12)</p> <p>column 3, line 5 - line 27 column 3, line 49 - line 57 column 5, line 19 - line 39 figures</p>	1,5,10, 12,13, 28,31
X	<p>US 5 363 560 A (MAKOW STAN P) 15 November 1994 (1994-11-15) column 2, line 5 - line 14 column 3, line 23 - column 4, line 51 figures</p>	14-17, 20,23-26
X	<p>WO 01/09460 A (DONNELLAN ANTHONY) 8 February 2001 (2001-02-08)</p> <p>page 5, line 9 - page 8, line 20; claim 14 figure 2</p>	14-17, 20,22, 24-27
X	<p>WO 01/12918 A (TEAM INNOVATION LTD) 22 February 2001 (2001-02-22)</p>	14-17, 20,24-26
Y	<p>page 1, paragraph 1 - paragraph 3 page 3, line 25 - page 4, line 3 page 7 - page 9 figures 3a,3b</p>	29
X	<p>GB 2 367 864 A (BRIGGS DARREN) 17 April 2002 (2002-04-17) the whole document</p>	30,31
A	<p>US 2 111 003 A (FRANCIS PETTY KIRK) 15 March 1938 (1938-03-15) the whole document</p>	1
A	<p>GB 751 869 A (US CERAMIC TILE COMPANY) 4 July 1956 (1956-07-04) cited in the application the whole document</p>	

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

A method of dispensing a predetermined amount of adhesive for a tile

Inventions (3) to (6) are not related to inventions (1) and (2). Indeed, none of independent claims 28 to 31 refers to the tile of claim 1 or the tiling accessory of claim 14. Claims 28 and 29 refer only to levelling member(s) which are not defined in further details. Moreover, the apparatus of claim 30 and the method of claim 31 relate to the tiling of tiles of any kind, i.e. not necessarily provided with levelling member(s). Finally, inventions (5) and (6) are not linked, since the method of claim 31 might be carried out with means other than the apparatus of claim 30, for instance manually.

Hence, the common concept linking together the afore mentioned inventions is only a tile which is intended to be affixed with an adhesive.

This common concept is generally known in the art, see e.g. page 1 of the present application and cited documents. Therefore, inventions (1) to (6) are not so linked as to form a single general inventive concept (Rule 13.1 PCT).

INTERNATIONAL SEARCH REPORT

application No.
PCT/GB2004/002295

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-13

A tile having at least one levelling member to directly contact the support surface and to define separation of the tile from the support surface

2. claims: 14-27

A tiling accessory having at least one levelling member to directly contact the support surface and to define separation of the tile from the support surface

3. claim: 28

A method of tiling, wherein adhesive is applied to the back of a tile but not to levelling member(s) on the tile

4. claim: 29

A method of tiling using a tiling accessory, comprising the steps of affixing at least one tiling accessory to a tile and applying adhesive to tile back of the tile but not to levelling member(s)

5. claim: 30

An apparatus for dispensing a predetermined amount of adhesive for a tile

6. claim: 31

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB2004/002295

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4503654	A	12-03-1985	EP 0175014 A1	26-03-1986
			AT 41195 T	15-03-1989
			DE 3477031 D1	13-04-1989
FR 1230511	A	16-09-1960	NONE	
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US 5363560	A	15-11-1994	NONE	
WO 0109460	A	08-02-2001	AU 4588500 A	19-02-2001
			EP 1185751 A1	13-03-2002
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			GB 2352254 A ,B	24-01-2001
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			AU 5433699 A	13-03-2001
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GB 751869	A	04-07-1956	NONE	