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(54) **Self sticking carpet tiles.**

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Description

FIELD OF THE INVENTION

The present invention is directed to a method and system for packaging tiles. More specifically, the invention relates to a method and system for packaging carpet tiles of the self-sticking type, which have a pressure release adhesive applied to one surface.

BACKGROUND OF THE INVENTION

There are two types of carpet tiles currently available. A first type requires that a self-release adhesive be applied to the floor on which the carpet tile is to be placed. There are several disadvantages in using this type of carpet tiles, including the need to apply expensive adhesive over the entire floor and difficulty in installing tiles on such a surface. A second disadvantage is that when the tiles are removed the glue which remains on the floor is both difficult and costly to remove in order to return the floor to its original surface.

Accordingly, the second type of carpet tile, which is commonly known as a self-sticking tile, uses a pressure self-release adhesive cured onto the back of the carpet tile. Such carpet tiles having the self-release adhesive are advantageous over the first type of carpet tiles in that less adhesive is required, installation is facilitated and when the carpet tiles are removed there is no messy and costly clean up necessary in order to return the floor to its original surface.

Ayotte, US-A-4,380,563 proposes to package felt substrates having an adhesive applied to one surface of the substrate. Each felt substrate, with an applied adhesive, is separated from another such felt substrate, with an applied adhesive, by a release paper. The release paper is necessary to prevent the adhesive surface of one felt substrate from contacting the finished or exposed felt surface of another felt substrate. The proposed Ayotte packaging is disadvantageous, in that it is costly to provide the release paper during the manufacturing process and the release paper also presents problems of paper disposal during the time of installation of the carpet tiles.

SUMMARY OF THE INVENTION

This invention provides a tile packaging system and method for self-sticking tiles which is an improvement over the prior art packaging methods and systems in that it obviates the above-described disadvantages of the prior art. The pressure self-release adhesive, in the present invention, is applied to the bottom surface of the tiles in one of

two predetermined geometrical patterns. The two predetermined geometrical patterns are complementary so that when two tiles with pressure self-release adhesives are placed back-to-back, the adhesive from one tile will not contact the adhesive from the other tile.

According to the present invention, a tile system comprises a plurality of tiles having adhesives on the backs thereof for adhering said tiles to a surface, said adhesive being non-releasably applied to said backs, having release properties as to surfaces other than those covered with adhesive, characterised in that the adhesive is arranged in areas such that two of said plurality of tiles may be placed in back-to-back contact without having their respective adhesive areas in contact, whereby said two tiles in back-to-back contact may be readily separated from one another.

In a tile system according to the invention the adhesive areas may be located at the corners of one tile and away from the corners of the other, and may be square shaped, for example. Preferably, the location of the adhesive areas on the tiles is such that non-contact of the adhesive areas is achieved by arrangement of predetermined patterns. The adhesive may be a self-release adhesive, and non-stick material may be applied to areas of the tiles between adhesive areas thereof. The present invention is especially applicable to carpet tiles.

As is well known to those skilled in the art, pressure self-release adhesive can be applied to carpet tiles in several ways. In one way, an aqueous or solvent adhesive is used and upon application to the carpet tile the adhesive is cured to the back of the tile by driving out the water or solvent by a conventionally known process. A second way of applying pressure self-release adhesive to carpet tiles results in a hot melt process, in which the adhesive is applied hot so that it forms a permanent bond with the carpet tile substrate and upon cooling becomes a release adhesive to anything that it contacts.

Furthermore, the invention can also use a double faced tape in place of the pressure self-release adhesive.

One example of the present invention would be the application of pressure self-release adhesives at the outermost corners of one group of carpet tiles. A second group of carpet tiles would have adhesive placed at locations away from the four outermost corners of the carpet tile, for example, on the outer edges of the tile intermediately located between adjacent corners. Thus, when the carpet tiles are placed back to back the adhesive from one tile would not contact the adhesive from the other tile. Furthermore, because the adhesive has been applied in such a manner that it is cured

when applied to its receptor carpet tile, the adhesive is firmly bonded to the carpet tile with a significantly higher bonding strength than the bond which the exposed surface of the adhesive will form with another surface such as the back of another carpet tile or a floor.

Another example of the present invention would be the application of a special adhesive pattern to all carpet tiles such that when one carpet tile is rotated relative to a second carpet tile, the adhesive portions of the two respective tiles will not contact each other when the tiles are placed back-to-back.

When double faced tape is used in place of a pressure self-release adhesive, one side of the double faced tape has superior bonding characteristics as compared to the other side of the double faced tape which is to contact the floor.

Thus, by placing the carpet tiles of the present invention back to back so that their respective adhesive portions do not make contact, the carpet tiles can be packaged without the use of release paper.

In another embodiment, those areas of carpet tile back which do not receive adhesive are treated with non-stick material. More particularly, a non-adhesive wetting material is used which, for example, can be silicone crossed linked materials, fluorocarbons, waxes, metallic stearates or resins. The non-adhesive wetting material can be sprayed or printed on to the carpet tiles and will need to be dried or cured. The latter is needed with materials which must cross link to be effective. This alternative increases flexibility in pressure self-release adhesive selection so that highly appressed types can be used which might otherwise have too much adhesion to an untreated tile backing surface.

Accordingly, the present invention provides the following advantages over the prior art carpet tiles. First, the use of a self-stick tile without the need for release paper saves consideration cost during manufacturing and also obviates any problems of paper disposal for the carpet tile installer. Secondly, because it is not necessary to apply a coat of adhesive to the floor, substantial savings in time of application, time of curing, the labour of application and more difficult tile installation and the cost of the adhesive, result. And finally, when the carpet tiles of the present invention are removed from the floor, since the glue is on the tiles and not on the floor, messy and costly clean ups in order to return the floor to its original surface are avoided.

BRIEF DESCRIPTION OF THE DRAWINGS

FIGURE 1 shows a carpet tile having a first predetermined pattern of adhesive portions mounted on its bottom surfaces;

FIGURE 2 shows a carpet tile having a second predetermined pattern, which differs from the first predetermined pattern of the carpet tile of FIGURE 1;

FIGURE 3 shows the adhesive patterns when the first carpet tile backing is laid against the second carpet tile backing;

FIGURE 4 is a cross section of the carpet tile of FIGURE 1 along line 4-4;

FIGURE 5 is a cross section of the carpet tile of FIGURE 2 along line 5-5;

FIGURE 6 shows one example of a packaging container for the carpet tiles as assembled in FIGURE 3;

FIGURE 7A and 7B show carpet tiles having identical adhesive patterns which do not contact each other when one of the tiles is rotated relative to the other; and

FIGURE 8A and 8B show carpet tiles in which the portions not receiving adhesive are treated with non-stick material.

DETAILED DESCRIPTION OF THE PRESENT INVENTION

In FIGURE 1 there is shown a first carpet tile A having a bottom surface 50 on which adhesive portions 10 and 20 are formed in a predetermined geometrical pattern. Although the adhesive portions are shown as square in shape in FIGURE 1, it will be readily understood to those skilled in the art that any shape of adhesive portions would be suitable, for example, circular, elliptical, striped, etc. FIGURE 4 is a cross section of carpet tile A taken along line 4-4. As can be seen in FIGURE 4, the adhesive portions 10 and 20 are located on the bottom surface 50 of the carpet tile A opposite to its top surface 70.

FIGURE 2 shows a carpet tile B having a bottom surface 60 on which are arranged adhesive portions 30 and 40 in a second predetermined geometrical pattern which is complementary to the first pattern of the carpet tile A, as will be described below. A cross section of carpet tile B along 5-5 is shown in FIGURE 5. In FIGURE 5, the carpet tile B is shown to have a bottom surface 60 on which adhesive portions 30 and 40 are located opposite to the top surface 80.

The geometrical arrangement of the first carpet tile A and second carpet tile B are said to be complementary to each other in that the carpet tiles A and B can be placed over top one another with none of the adhesive portions 10, 20, 30 and 40 contacting each other, as shown by the dotted lines in FIGURE 3.

FIGURE 3 shows the carpet tile A placed against the bottom of the carpet tile B such that the upper surface 70 of the carpet tile A is in view.

Thus, the geometrical patterns of the carpet tiles A and B are said to be complementary in that they do not intersect or overlap but result in adhesive portions contacting the respective bottom surface of the adjacent carpet tile. For example, the adhesive portions 10 and 20 of carpet tile A contact the bottom surface 60 of carpet tile B and the adhesive portions 30 and 40 of carpet tile B contact the bottom surface 50 of carpet tile A. Therefore, none of the adhesive portions contact each other.

Since the adhesive portions 10, 20, 30 and 40 have been cured to their respective carpet tiles, they are firmly bonded to the bottom surface of their respective carpet tile. However, the exposed surfaces of the adhesive portions are characteristic of a pressure self-release adhesive surface so that the carpet tiles can be easily pulled apart from one another, placed into position on a floor surface and pulled up and rearranged as necessary to finalize their position on the floor surface. Furthermore, if and when the carpet tiles are to be removed from the floor surface, they are easily pulled up out of place with the adhesive portions remaining firmly bonded to the carpet tiles.

As noted above, the described construction of carpet tiles therefore allows an inexpensive and efficient packaging method whereby carpet tiles A and B are placed back to back and then stored in a carton or container 100 as shown in FIGURE 6. Virtually any type of container can be used for holding the carpet tiles, including straps for strapping a plurality of paired tiles together. Upon removal from the container at the installation site, the carpet tiles are easily pulled apart for placement on the floor surface.

In FIGURES 7A and 7B there are shown, examples of carpet tiles having respective identical predetermined patterns which nonetheless allow carpet tiles having the same pattern to be placed back-to-back without the adhesive portions of the tiles contacting each other. For example, carpet tiles 110 and 120, shown in FIGURE 7A, have an identical adhesive pattern on their back sides, but by rotating tile 120 counterclockwise through 90° to the position shown, the tiles 110 and 120 can be folded over onto each other along line a-a so that the adhesive portions on the tiles (darkened areas in FIGURE 7A) do not contact each other. Similarly, carpet tiles 130 and 140 shown in FIGURE 7B have identical adhesive patterns and can be folded over onto each other along line b-b, so that the adhesive portions on the tiles do not contact each other.

In another embodiment of the present invention, the portions of the carpet tiles which do not receive adhesive are treated with a non-adhesive wetting material (non-stick material). As shown in FIGURES 8A and 8B, adhesive is applied to portions 150 and non-stick material is applied to por-

tions 160 of the carpet tiles. The non-stick material is positioned on the carpet tile of FIGURE 8A so that it will be directly opposite to the adhesive portions on the carpet tile of FIGURE 8B, when the tiles are placed back-to-back. Similarly, the non-stick material is positioned on the carpet tile of FIGURE 8B so that it will be directly opposite to the adhesive portions on the carpet tile of FIGURE 8A, when the tiles are placed back-to-back. Provisions of the non-stick material eases separation of the packed tiles even when the paired tiles have been subjected to abnormal temperatures and pressures.

The present invention can be practiced with carpet tiles of virtually any construction. For example, carpet tiles having polyvinyl chloride, ethylene vinyl acetate, polyurethane, ethylene propylene diene monomer compound, asphalt, vinyl acetate ethylene, SBR latex, atactic polypropylene and other crystalline or amorphous synthetic resin backings are suitable for the disclosed packaging method and system. Furthermore, carpet tiles with secondary backings such as woven or non-woven polypropylene and polyester are also suitably used with this invention.

The invention may also be applicable to other types of tiles made of cork, ceramic, linoleum, or other materials.

Claims

1. A tile system comprising a plurality of tiles having adhesive on the backs thereof for adhering said tiles to a surface, said adhesive being non-releasably applied to said backs, having release properties as to surfaces other than those covered with adhesive, characterized in that the adhesive is arranged in areas such that two of said plurality of tiles may be placed in back-to-back contact without having their respective adhesive areas in contact, whereby said two tiles in back-to-back contact may be readily separated from one another.
2. A tile system according to claim 1, characterized in that the adhesive areas are located at the corners of one tile and away from the corners of the other.
3. A tile system according to claim 2, in which the adhesive areas are square shaped.
4. A tile system according to claim 1, characterized in that the location of the adhesive areas on the tiles is such that the non-contact of the adhesive areas is achieved by arrangement of predetermined patterns.

5. A tile system according to any of claims 1 to 4, in which the adhesive is a self-release adhesive.
6. A tile system according to any of claims 1 to 4, in which the adhesive is a double-faced tape.
7. A tile system according to any of the preceding claims in which non-stick material is applied to areas of the tiles between adhesive areas thereof.
8. A tile system according to claim 7, wherein said non-stick material is a non-adhesive wetting material selected from silicone cross linked materials, fluorocarbons, waxes, metallic stearates and resin.
9. A tile system according to any of the preceding claims, in which the tiles are carpet tiles.
10. A tile system according to any of the preceding claims, in which the adhesive is a hot melt adhesive.
11. A tile system according to any of the preceding claims, in which the tiles have ethylene vinyl acetate backings.
12. A tile packaging system comprising:
 - a plurality of pairs of tiles, a first tile of each pair having a first pattern of adhesive on a surface thereof and a second tile of each pair having a second pattern of adhesive on a surface thereof, said first and second patterns being selected to prevent adhesive areas of said first tile from contacting adhesive areas of said second tile when said surfaces of said first and second tiles face each other; and
 - container means for holding said plurality of pairs of tiles.
13. A tile packing system according to claim 12, comprising tile systems according to any of claims 1 to 11.
14. A method of packaging a plurality of tiles comprising:
 - applying pressure sensitive adhesive to a surface of a first group of said plurality of tiles in a first predetermined pattern;
 - applying pressure sensitive adhesive to a surface of a second group of said plurality of tiles in a second predetermined pattern;
 - forming a plurality of paired tiles wherein each pair comprises one tile from said first group and one tile from said second group

arranged so that said surfaces are in contact, wherein said first and second predetermined patterns of pressure sensitive adhesive do not contact each other; and

placing said paired tiles into a container.

15. A method as claimed in claim 14, wherein an aqueous adhesive is applied in said adhesive applying steps.
16. A method as claimed in claim 14, wherein a solvent based adhesive is applied in said adhesive applying steps.
17. A method as claimed in claim 14, wherein a hot melt adhesive is applied in said adhesive applying steps.
18. A method as claimed in claim 14, wherein said adhesive comprises a double-faced tape.

Revendications

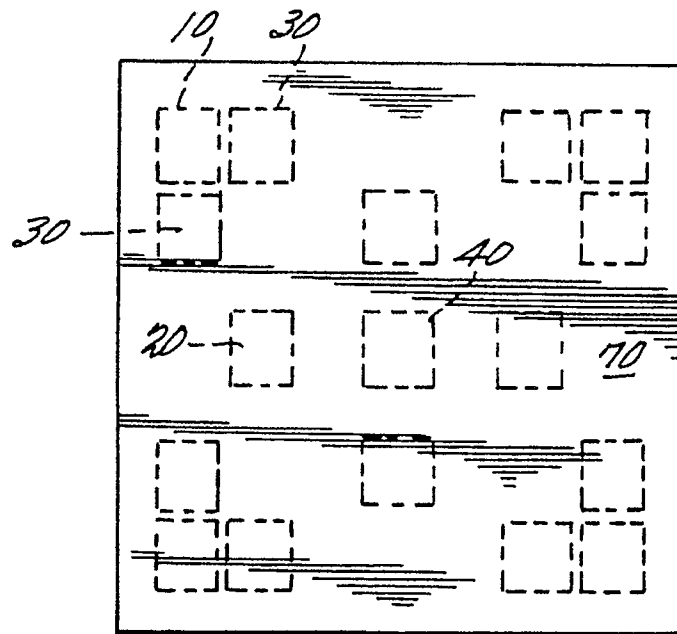
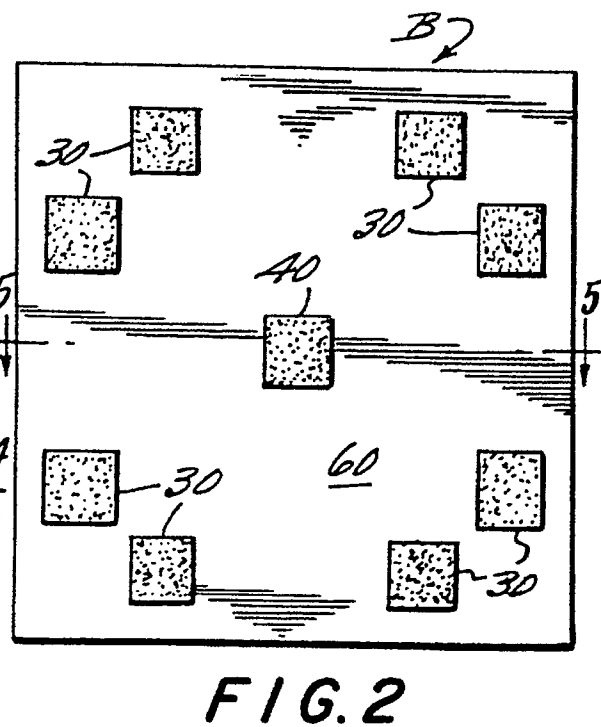
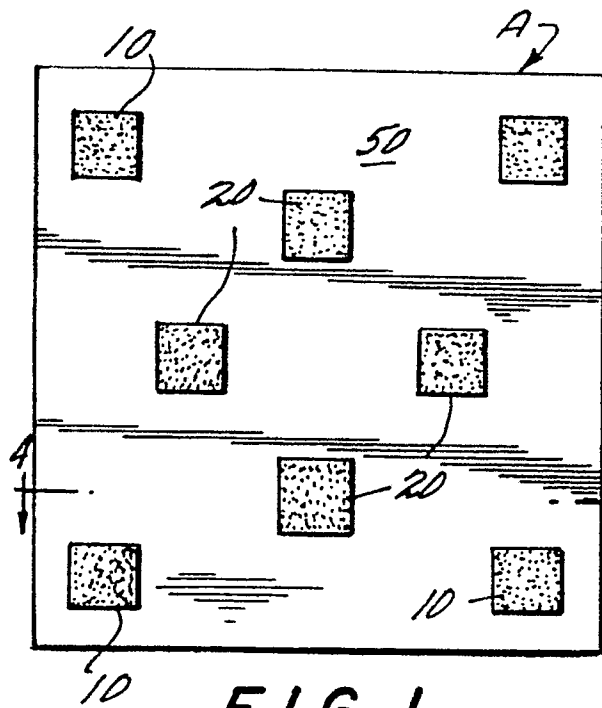
1. Système ou ensemble de carreaux, comprenant plusieurs carreaux comportant chacun sur son dos de l'adhésif pour faire adhérer ces carreaux à une surface, ledit adhésif étant appliqué auxdits dos de façon à ne pas pouvoir en être détaché, cet adhésif ayant des propriétés de capacité de décollement dans le cas de surfaces autres que celles recouvertes de l'adhésif, ensemble caractérisé en ce que l'adhésif est disposé en des zones telles que deux de ces divers carreaux peuvent être placés en contact dos à dos sans que leurs zones adhésives respectives ne soient en contact, moyennant quoi lesdits deux carreaux, mis en contact dos à dos, peuvent être facilement séparés l'un de l'autre.
2. Ensemble de carreaux selon la revendication 1, caractérisé en ce que les zones adhésives sont situées aux coins d'un carreau et loin des coins de l'autre carreau.
3. Ensemble de carreaux selon la revendication 2, dans lequel les zones adhésives sont de forme carrée.
4. Ensemble de carreaux selon la revendication 1, caractérisé en ce que l'emplacement des zones adhésives sur les carreaux est tel que l'on obtient, grâce à un agencement de configuration de dessin prédéterminée, le non-contact entre les zones adhésives.
5. Ensemble de carreaux selon l'une quelconque des revendications 1 à 4, dans lequel l'adhésif

- est un adhésif capable d'un auto-décollement.
6. Ensemble de carreaux selon l'une quelconque des revendications 1 à 4, dans lequel l'adhésif est un ruban double face. 5
 7. Ensemble de carreaux selon l'une quelconque des revendications précédentes, dans lequel de la matière anti-adhérence est appliquée sur des zones des carreaux entre leurs zones adhésives. 10
 8. Ensemble de carreaux selon la revendication 7, dans lequel ladite matière anti-adhérence est une matière mouillante non adhésive, choisie parmi des matières siliconiques réticulées, des fluorocarbones, des cires, des stéarates de métaux et une résine. 15
 9. Ensemble de carreaux selon l'une quelconque des revendications précédentes, dans lequel les carreaux sont des carreaux de tapis ou de moquette. 20
 10. Ensemble de carreaux selon l'une quelconque des revendications précédentes, dans lequel l'adhésif est un adhésif thermofusible. 25
 11. Ensemble de carreaux selon l'une quelconque des revendications précédentes, dans lequel les carreaux ont des dos ou dossiers en éthylène/acétate de vinyle. 30
 12. Système ou dispositif pour emballer des carreaux, ce système comprenant : 35
 - plusieurs paires de carreaux, un premier carreau de chaque paire comportant une première configuration d'adhésif sur une de ses surfaces et un second carreau de chaque paire ayant une seconde configuration d'adhésif sur une de ses surfaces, lesdites première et seconde configurations étant choisies de façon à éviter que des zones adhésives dudit premier carreau ne viennent au contact de zones adhésives dudit second carreau lorsque lesdites surfaces desdits premier et second carreaux sont mises l'une en face de l'autre ; et
 - un moyen formant lien ou récipient pour contenir lesdites plusieurs paires de carreaux.
 13. Système pour l'emballage de carreaux selon la revendication 12, comprenant des ensembles de carreaux selon l'une quelconque des revendications 1 à 11. 50
 14. Procédé pour emballer plusieurs carreaux, ce procédé comprenant : 55
 - l'application, en une première configuration prédéterminée, d'un adhésif sensible à la pression sur une surface d'un premier groupe desdits plusieurs carreaux ;
 - l'application, en une seconde configuration prédéterminée, d'un adhésif sensible à la pression sur une surface d'un second groupe desdits plusieurs carreaux ;
 - la formation de plusieurs paires de carreaux, chaque paire comprenant un carreau dudit premier groupe et un carreau dudit second groupe disposés de façon que lesdites surfaces soient en contact, lesdites première et seconde configurations prédéterminées de l'adhésif sensible à la pression ne venant pas en contact mutuel l'une avec l'autre ; et
 - le placement desdites paires de carreaux dans un récipient.
 15. Procédé tel que revendiqué à la revendication 14, dans lequel on applique un adhésif aqueux au cours desdites étapes d'application d'un adhésif.
 16. Procédé tel que revendiqué à la revendication 14, dans lequel on applique un adhésif, contenant un solvant, au cours desdites étapes d'application de l'adhésif.
 17. Procédé tel que revendiqué à la revendication 14, dans lequel on applique un adhésif thermofusible au cours desdites étapes d'application de l'adhésif.
 18. Procédé tel que revendiqué à la revendication 14, dans lequel ledit adhésif comprend un ruban (à encollage) double face.

Patentansprüche

1. Fliesensystem bestehend aus einer Anzahl von Fliesen, auf deren Rückseite sich Klebstoff zum Befestigen dieser Fliesen auf einer Oberfläche befindet, wobei der Klebstoff nicht ablösbar auf deren Rückseiten aufgebracht ist, die in bezug auf andere als die mit Klebemittel versehenen Oberflächen Ablöseeigenschaften haben, **dadurch gekennzeichnet**, daß der Klebstoff in Bereichen so angeordnet ist, daß zwei solcher Fliesen mit den Rückseiten aneinandergelegt werden können, ohne daß ihre jeweiligen Klebeflächen miteinander in Berührung kommen, wodurch zwei mit den Rückseiten aneinandergelegte Fliesen jederzeit problemlos voneinander getrennt werden können.
2. Fliesensystem nach Anspruch 1, **dadurch gekennzeichnet**, daß sich die Klebeflächen in

- den Ecken einer Fliese befinden und entfernt von den Ecken der anderen Fliese.
3. Fliesensystem nach Anspruch 2, wobei die Klebeflächen quadratisch geformt sind.
 4. Fliesensystem nach Anspruch 1, **dadurch gekennzeichnet**, daß die Klebeflächen auf den Fliesen so positioniert sind, daß die Nichtberührung der Klebeflächen durch Anordnung von vorgegebenen Mustern erreicht wird.
 5. Fliesensystem nach einem der Ansprüche 1 bis 4, wobei der Klebstoff ein abziehbarer Klebstoff ist.
 6. Fliesensystem nach einem der Ansprüche 1 bis 4, wobei der Klebstoff ein Doppelklebeband ist.
 7. Fliesensystem nach einem der vorhergehenden Ansprüche, bei dem ein nichthaftendes Material zwischen Klebeflächen auf Fliesenbereiche aufgebracht ist.
 8. Fliesensystem nach Anspruch 7, wobei das nichthaftende Material nicht klebendes Netzmaterial ist, das aus vernetzten Siliciumstoffen, Fluorkohlenwasserstoffen, Wachsen, metallischen Stearaten und Harz ausgewählt ist.
 9. Fliesensystem nach einem der vorhergehenden Ansprüche, wobei die Fliesen Teppichfliesen sind.
 10. Fliesensystem nach einem der vorhergehenden Ansprüche, wobei der Klebstoff ein Heißschmelzkleber ist.
 11. Fliesensystem nach einem der vorhergehenden Ansprüche, wobei die Fliesen eine Ethylenvinylacetat-Schutzschicht aufweisen.
 12. Fliesenverpackungssystem mit:
einer Anzahl von Fliesenpaaren, wobei die erste Fliese jedes Paares ein erstes Klebeflächenmuster auf einer ihrer Oberflächen und eine zweite Fliese jedes Paares ein zweites Klebeflächenmuster auf einer ihrer Oberflächen hat, wobei die ersten und zweiten Muster so gewählt sind, daß eine Berührung von Klebeflächen der ersten Fliese mit Klebeflächen der zweiten Fliese verhindert wird, wenn diese Oberflächen der ersten und zweiten Fliesen einander zugewendet sind; und mit Verpackungsmitteln zum Zusammenhalten der Anzahl der Fliesenpaare.
 13. Fliesenverpackungssystem nach Anspruch 12, mit Fliesensystemen nach einem der Ansprüche 1 bis 11.
 14. Verfahren zum Verpacken mehrerer Fliesen, durch:
Aufbringen eines druckempfindlichen Klebstoffs auf eine Oberfläche einer ersten Gruppe der Anzahl von Fliesen in einem ersten vorgegebenen Muster;
Aufbringen eines druckempfindlichen Klebstoffs auf eine Oberfläche einer zweiten Gruppe der Anzahl von Fliesen in einem zweiten vorgegebenen Muster;
Bilden einer Anzahl von Fliesenpaaren, wobei jedes Paar aus einer Fliese der ersten Gruppe und einer Fliese der zweiten Gruppe besteht, die so angeordnet werden, daß die Oberflächen Kontakt miteinander haben, wobei sich die ersten und zweiten vorgegebenen Muster des druckempfindlichen Klebstoffs nicht berühren; und
Einbringen der Fliesenpaare in einen Container.
 15. Verfahren nach Anspruch 14, wobei ein wäßriger Klebstoff in dem Klebstoff-Aufbringungsschritt aufgebracht wird.
 16. Verfahren nach Anspruch 14, wobei ein Klebstoff auf Lösungsmittelbasis in dem Klebstoff-Aufbringungsschritt aufgebracht wird.
 17. Verfahren nach Anspruch 14, bei dem ein Heißschmelzkleber in dem Klebstoff-Aufbringungsschritt aufgebracht wird.
 18. Verfahren nach Anspruch 14, wobei der Klebstoff ein Doppelklebeband umfaßt.



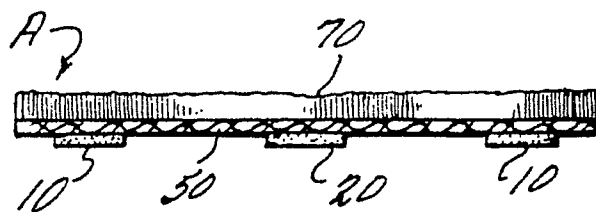


FIG. 4

FIG. 5

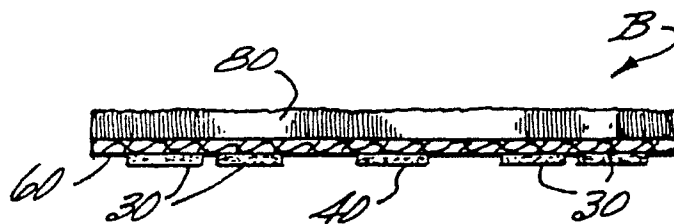


FIG. 6

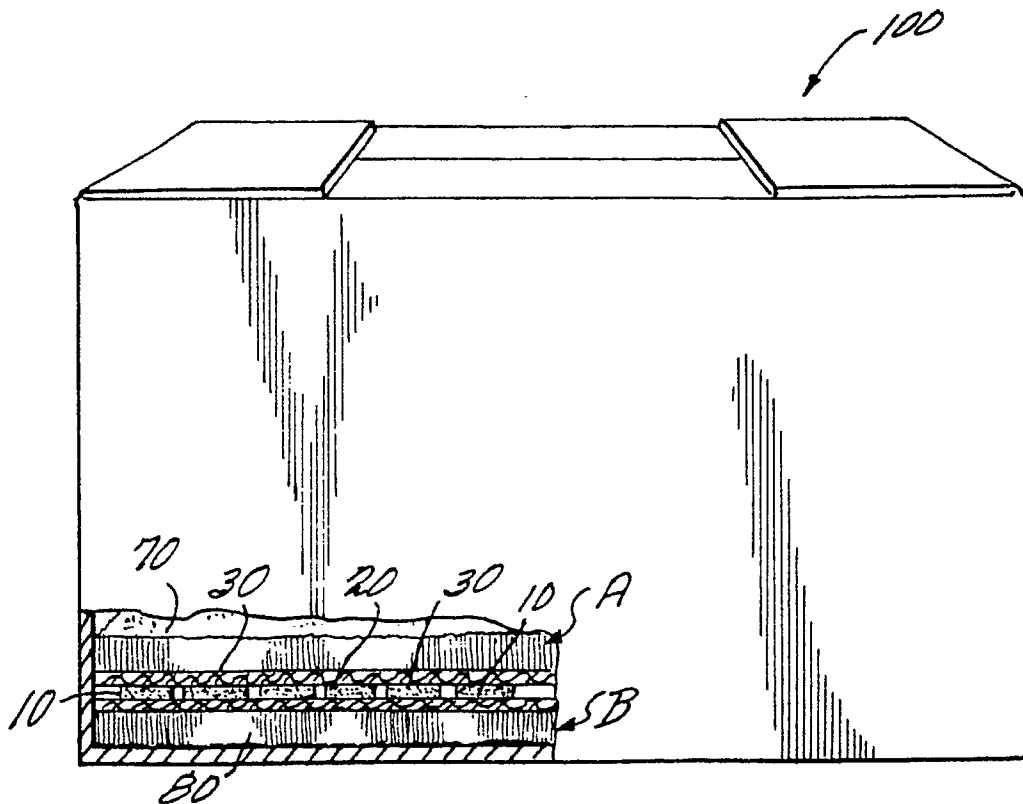


FIG. 7A

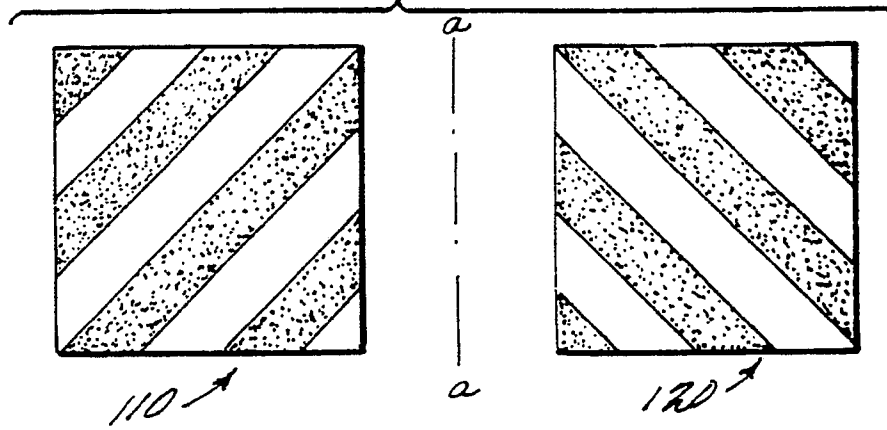


FIG. 7B

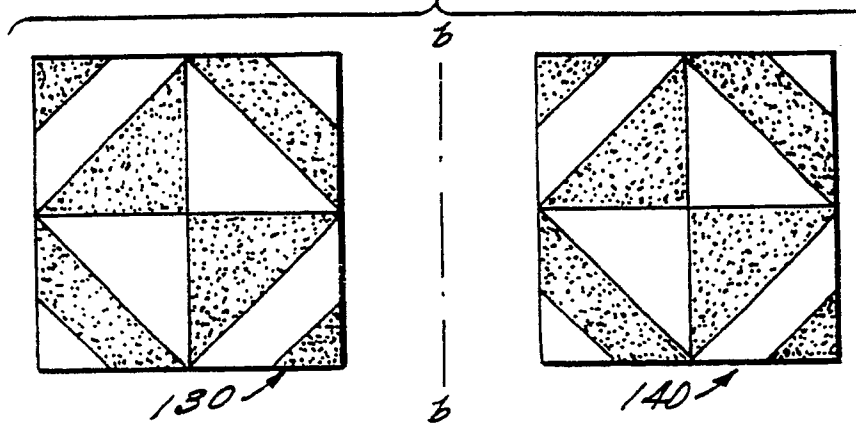


FIG. 8A

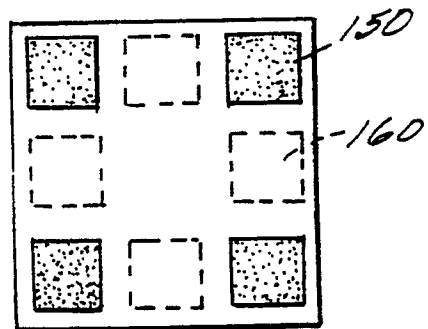


FIG. 8B

