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(54) **SUCTION FLOOR MAT**

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(57) **ABSTRACT**

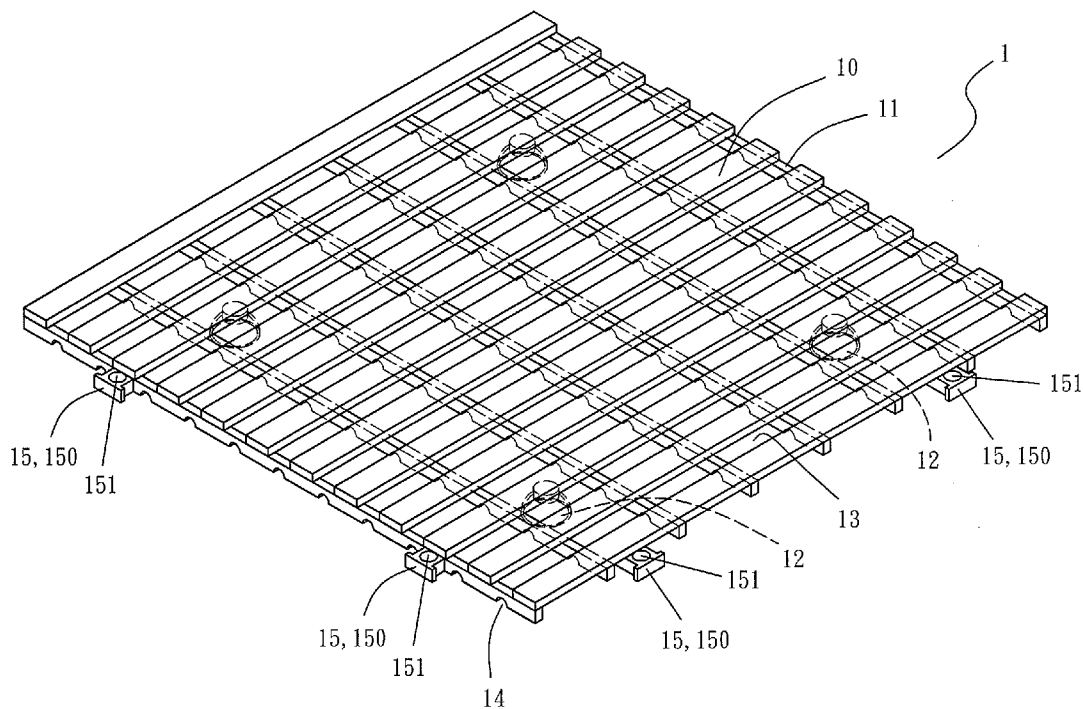
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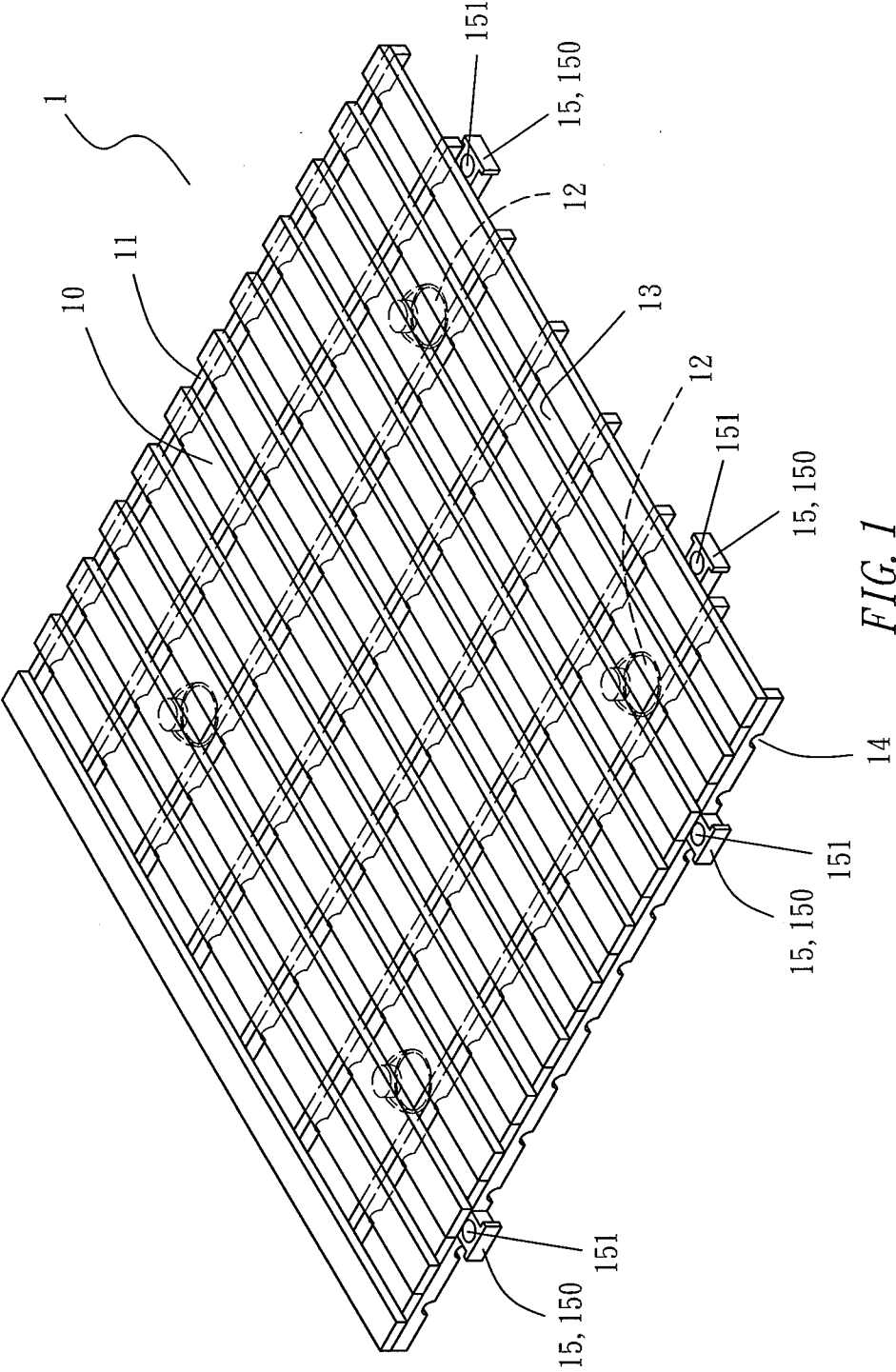
(22) Filed: **Nov. 8, 2012**

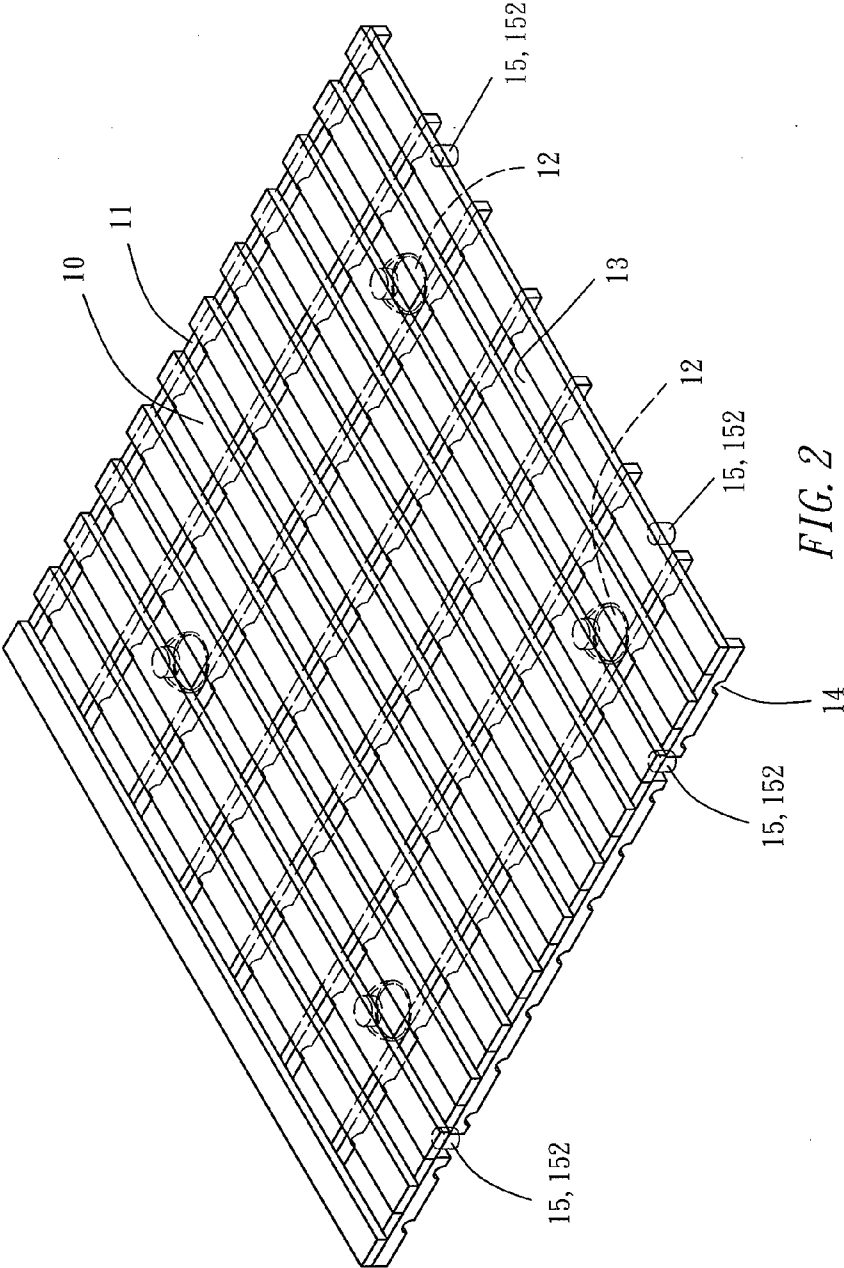
A suction floor mat includes a main body formed by a plurality of upper and lower support ribs arranged in a criss-cross pattern, a plurality of suction cups disposed at the bottom surface of the main body, a vertical opening formed between adjacent upper and lower support ribs, a groove formed at the bottom surface of each lower support rib, and a connecting structure disposed separately at two adjacent edges of the main body for connecting another adjacent suction floor mat.

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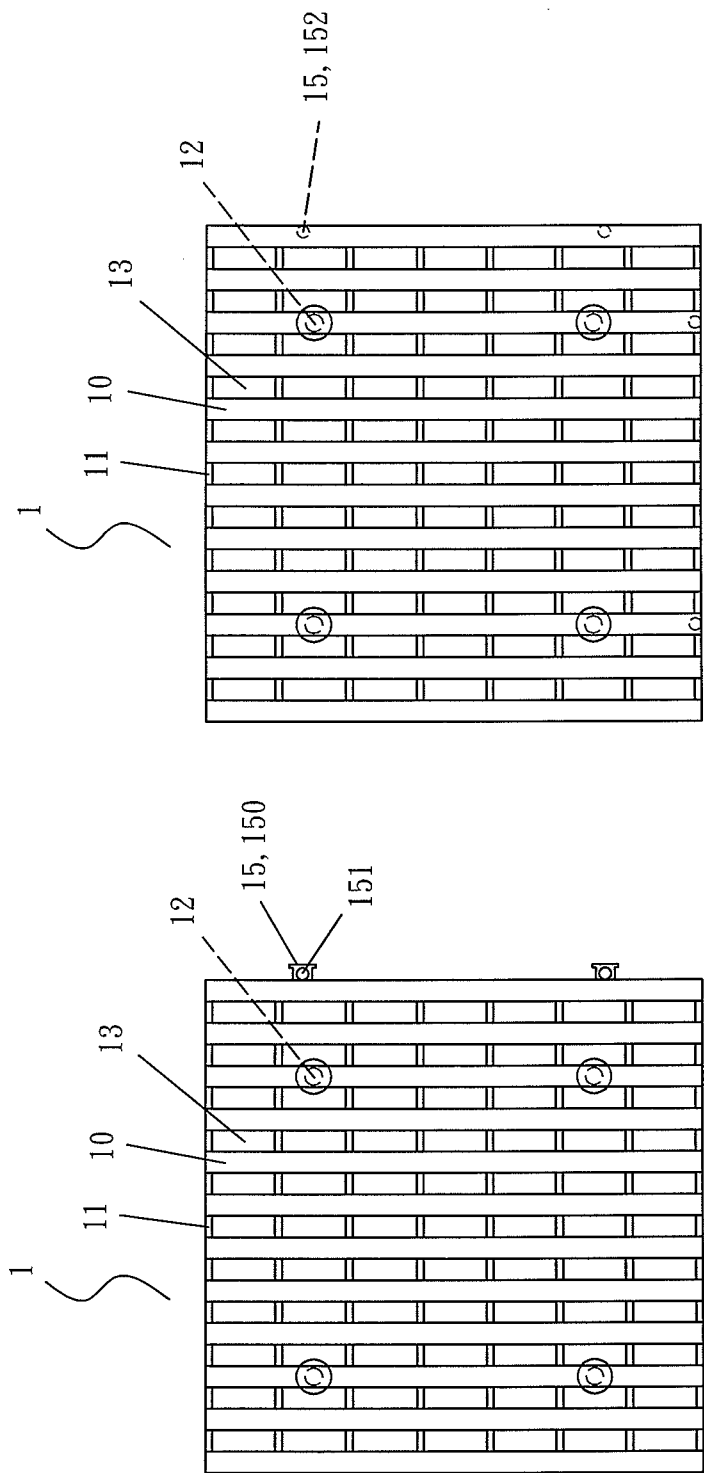


FIG. 3

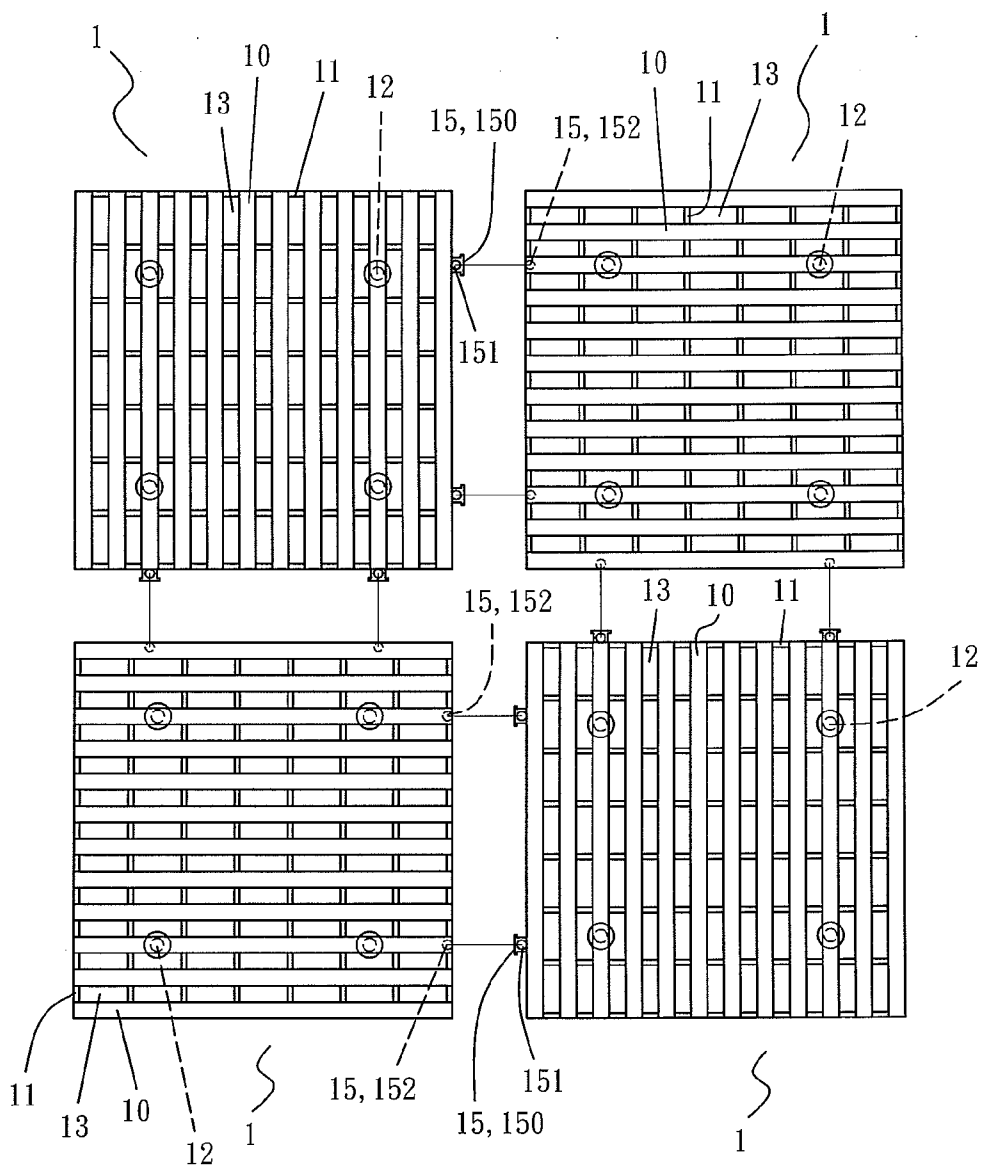


FIG. 4

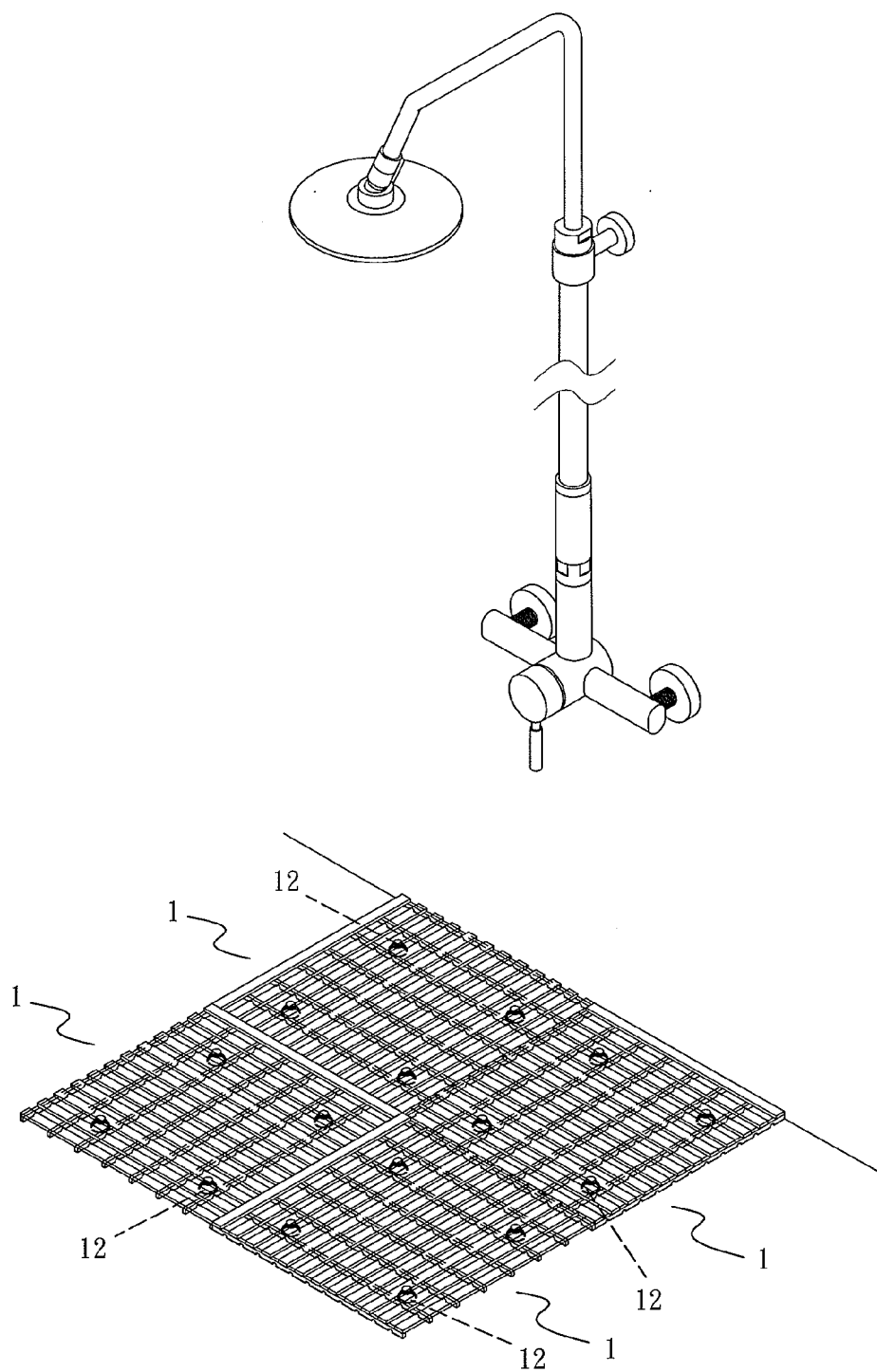


FIG. 5

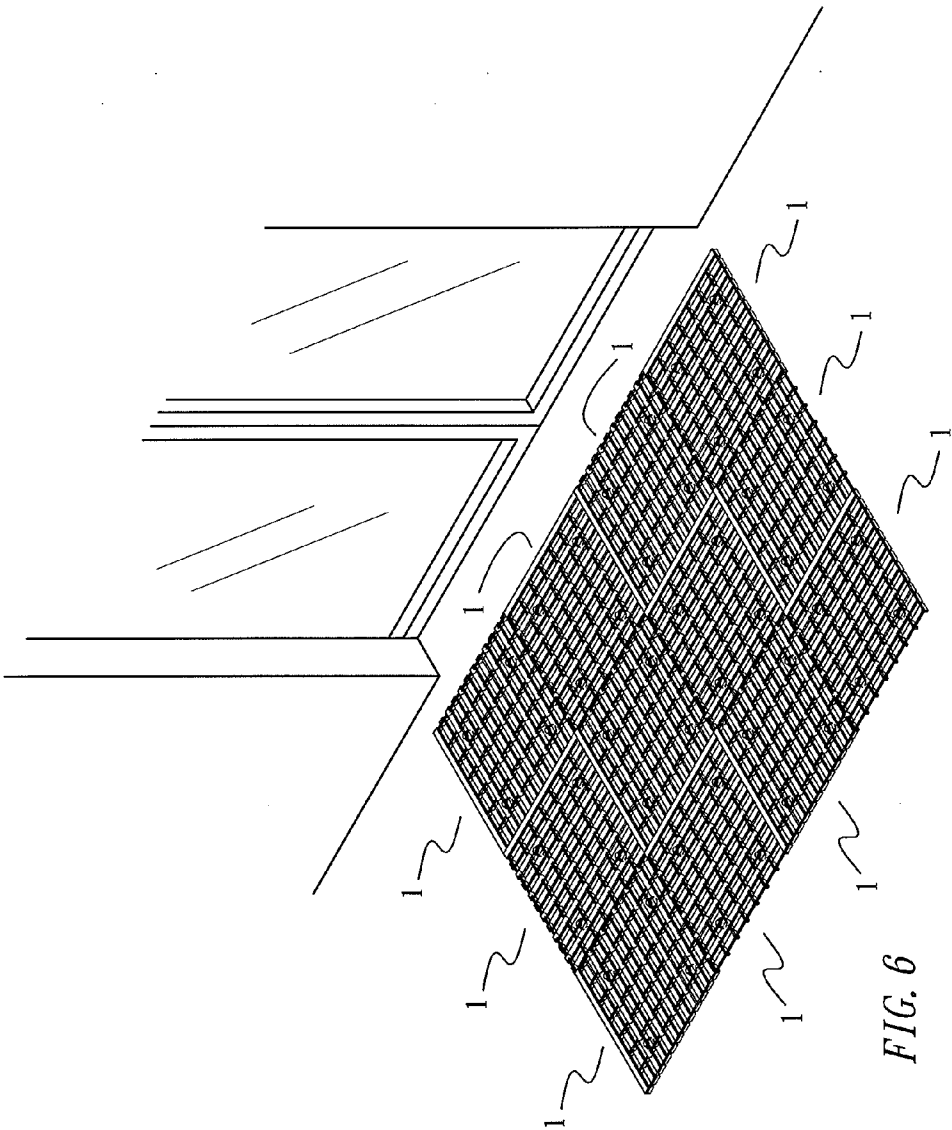


FIG. 6

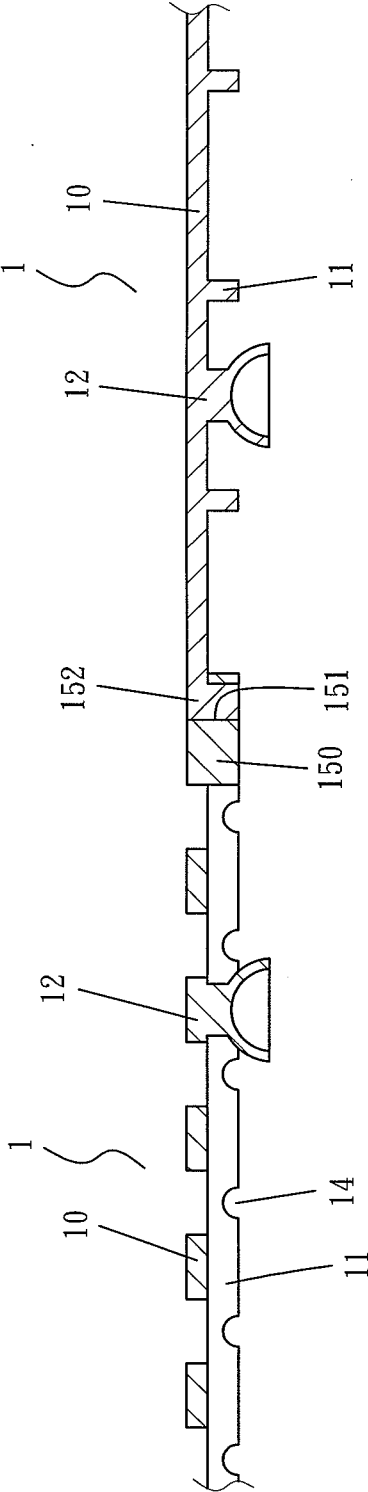


FIG. 7

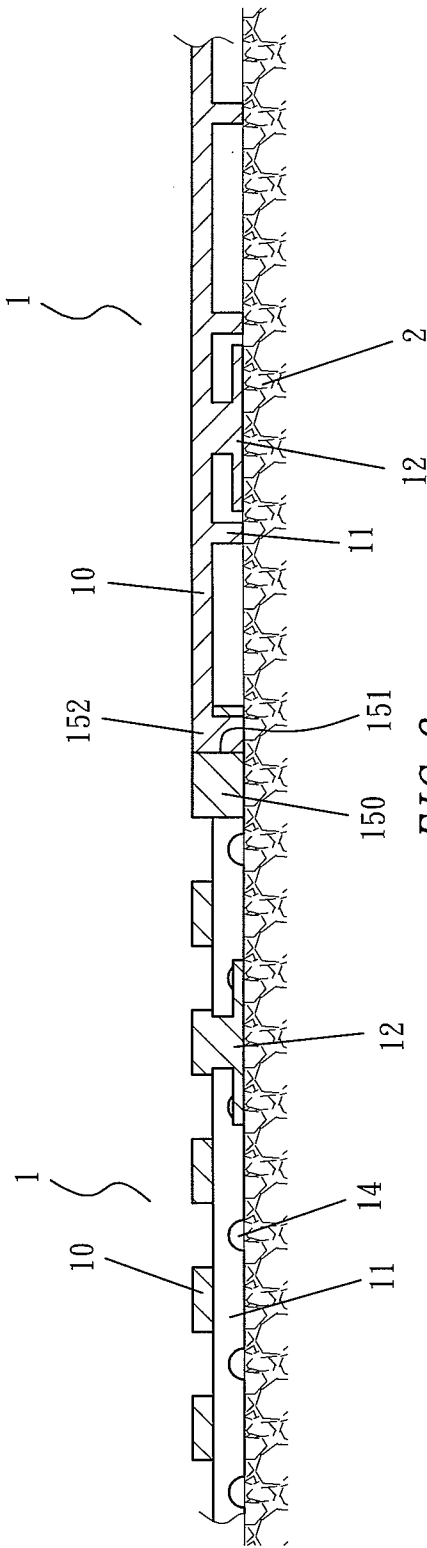


FIG. 8

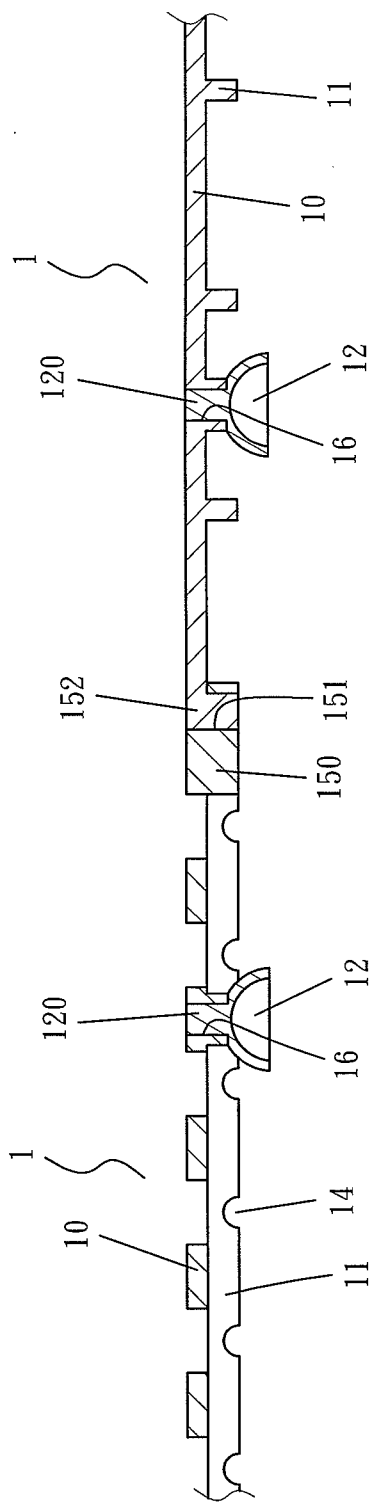


FIG. 9

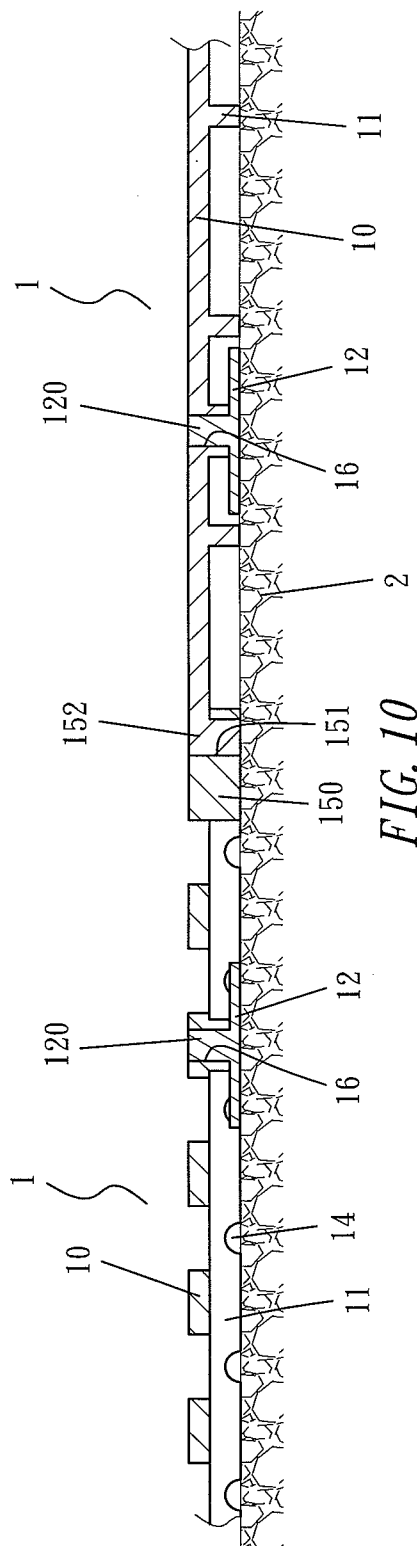
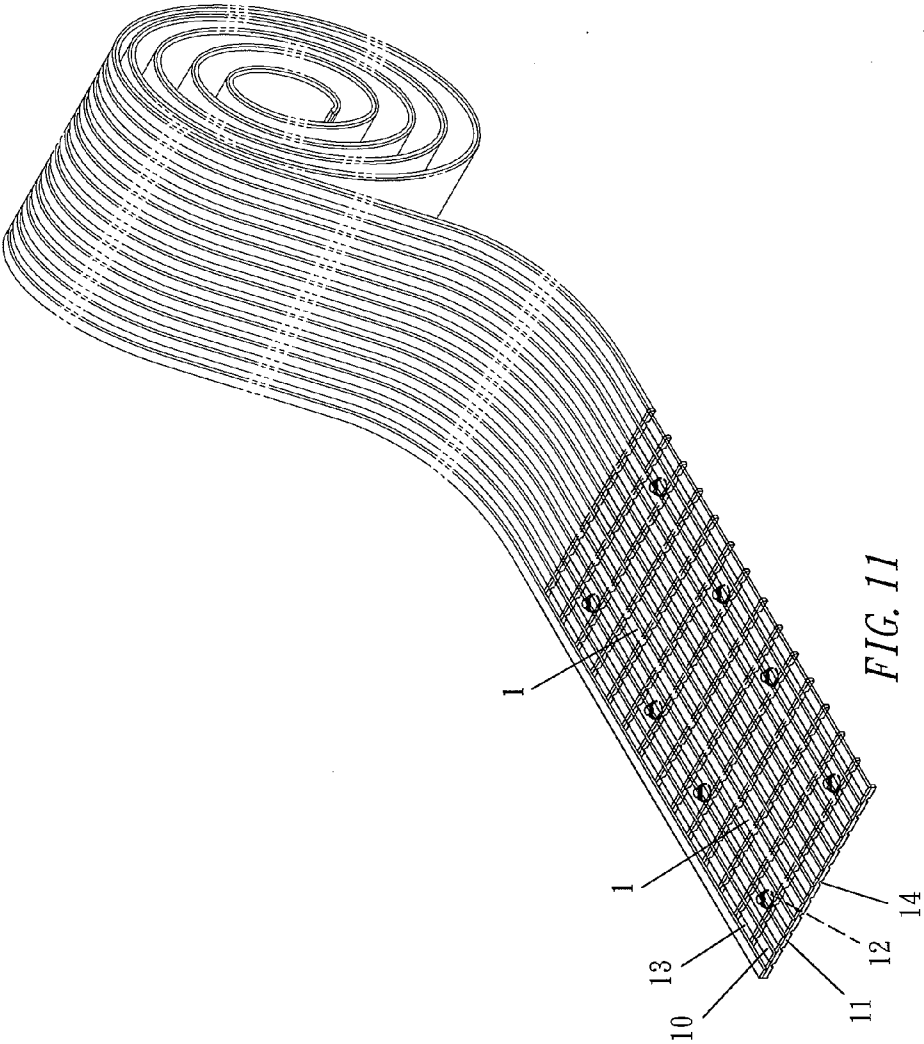


FIG. 10



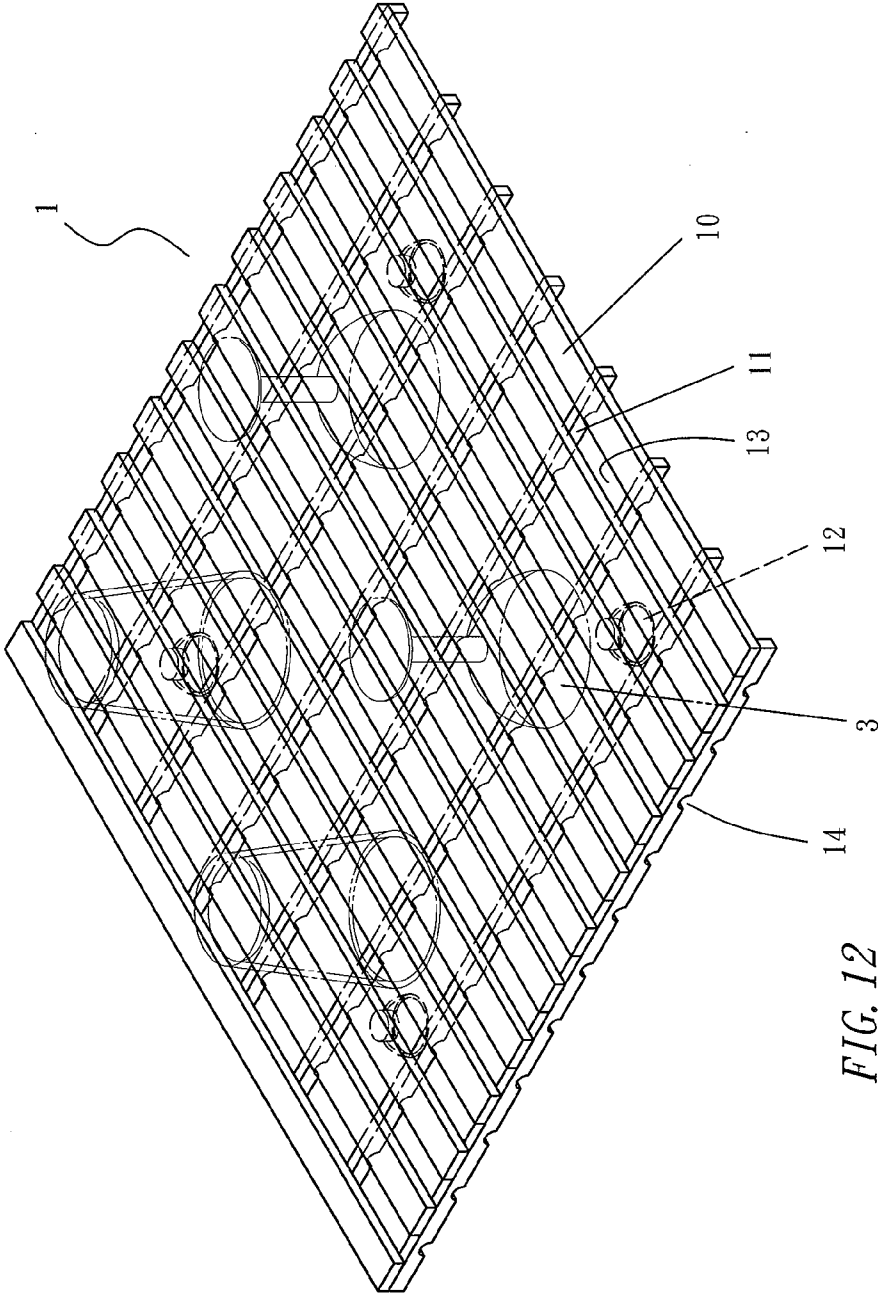


FIG. 12

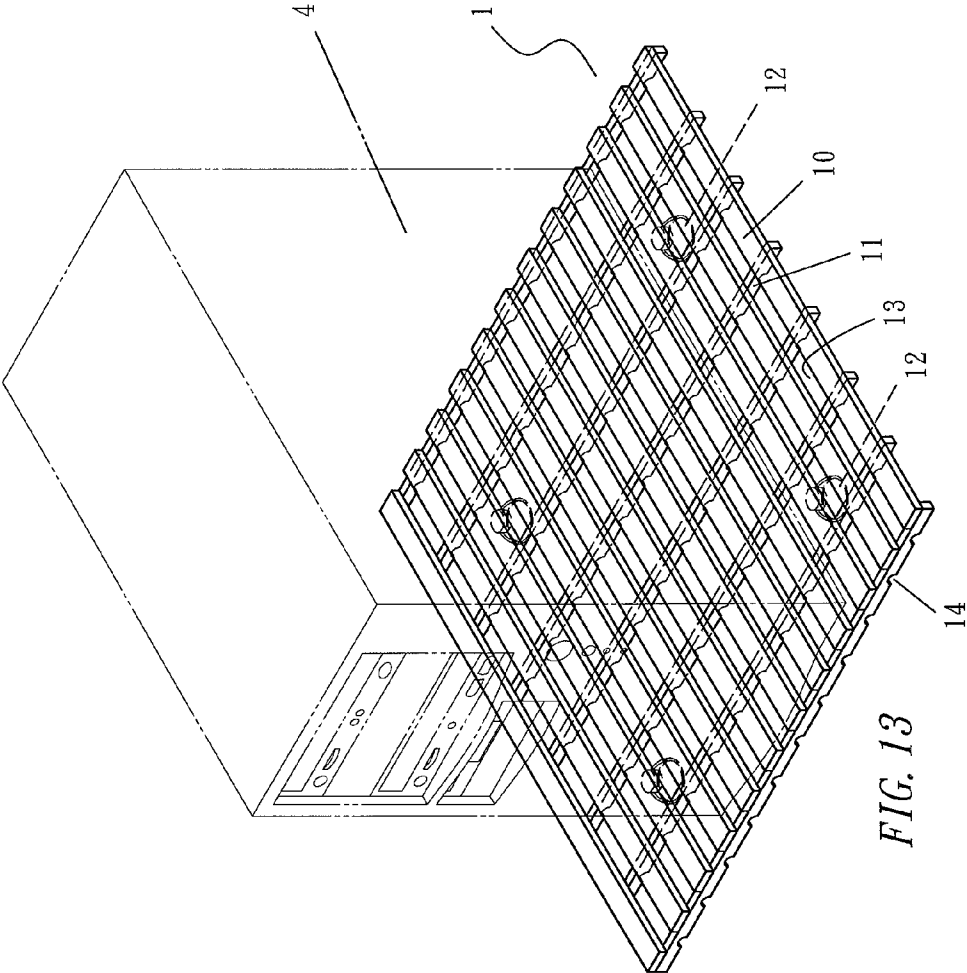


FIG. 13

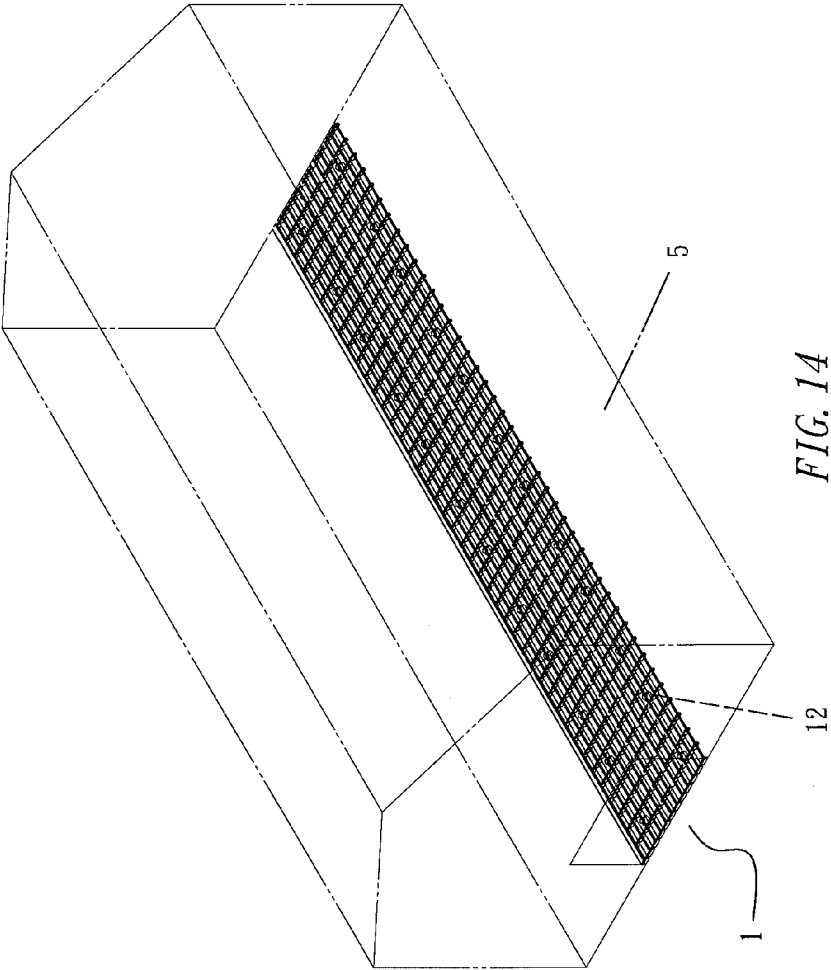


FIG. 14

SUCTION FLOOR MAT

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to a suction floor mat, and more particularly to the suction floor mat with the functions of fixation, ventilation, drainage, and moisture resistance.

[0003] 2. Description of the Related Art

[0004] In general, a floor mat is placed on a floor and provided for users to step thereon, and the floor mat is usually used in places such as bathrooms, pool sides or areas with heavy moisture for preventing users from slipping, falling or being injured, or separating objects from a damp floor. Some conventional floor mats come with a plurality of vertical ports on a surface of the floor mats for facilitate drainage. However, such conventional floor mats have poor fixation, so that the floor mats may be shifted from their original positions by touches easily, and users may slip or fall when stepping on the floor mats.

SUMMARY OF THE INVENTION

[0005] In view of the aforementioned drawbacks, the inventor of the present invention based on years of experience in the related industry to conduct extensive researches and experiments, and finally developed a suction floor mat in accordance with the present invention to overcome the drawbacks of the prior art.

[0006] Therefore, it is a primary objective of the present invention to overcome the shortcomings of the prior art by providing a suction floor mat with the functions of fixation, ventilation, drainage, and moisture resistance.

[0007] To achieve the foregoing objective, the present invention provides a suction floor mat comprising a main body formed by a plurality of upper and lower support ribs arranged in a criss-cross pattern, a plurality of suction cups disposed at the bottom surface of the main body, a vertical opening formed between adjacent upper and lower support ribs, a groove formed at the bottom surface of each lower support rib, and a connecting structure disposed separately at two adjacent edges of the main body for connecting another adjacent suction floor mat.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] FIG. 1 is a perspective view of a first preferred embodiment of the present invention;

[0009] FIG. 2 is a perspective view of a second preferred embodiment of the present invention;

[0010] FIG. 3 is a first schematic view of combining the first and second preferred embodiments of the present invention;

[0011] FIG. 4 is a second schematic view of combining the first and second preferred embodiments of the present invention;

[0012] FIG. 5 is a first schematic view of an application of the combined first and second preferred embodiments of the present invention;

[0013] FIG. 6 is a second schematic view of an application of the combined first and second preferred embodiments of the present invention;

[0014] FIG. 7 is a first cross-sectional view of the combined first and second preferred embodiments of the present invention;

[0015] FIG. 8 is a second cross-sectional view of the combined first and second preferred embodiments of the present invention;

[0016] FIG. 9 is a first cross-sectional view of a third preferred embodiment of the present invention;

[0017] FIG. 10 is a second cross-sectional view of a third preferred embodiment of the present invention;

[0018] FIG. 11 is a perspective view of a fourth preferred embodiment of the present invention;

[0019] FIG. 12 is a first schematic view of an application of the fourth preferred embodiments of the present invention;

[0020] FIG. 13 is a second schematic view of an application of the fourth preferred embodiments of the present invention; and

[0021] FIG. 14 is a third schematic view of an application of the fourth preferred embodiments of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0022] The technical characteristics of the present invention will become apparent with the detailed description of preferred embodiments and the illustration of related drawings.

[0023] With reference to FIG. 1 for a suction floor mat of the first preferred embodiment of the present invention, the suction floor mat comprises a main body 1, a plurality of upper support ribs 10 and lower support ribs 11 disposed at the top and bottom surfaces of the main body 1 respectively and arranged in a criss-cross pattern, and the bottom surface has a plurality of suction cups 12, and an opening 13 is formed between adjacent upper and lower support ribs 10, 11, and the bottom surface of each lower support rib 11 has an arc-shaped groove 14. The main body 1 has a connecting structure 15 disposed separately on two adjacent edges of the main body 1, wherein the connecting structure 15 is a connecting plate 150 protruded outwardly, and the top surface of the connecting plate 150 has a through hole 151 penetrating through the connecting plate 150.

[0024] With reference to FIG. 2 for the second preferred embodiment of the present invention, the difference between the first and second preferred embodiments resides on that the connecting structure 15 of the second preferred embodiment has a connecting column 152 protruded downwardly from the bottom surface of the main body 1 and disposed at a position corresponding to the connecting plate 150, such that when two adjacent main bodies 1 are engaged, the connecting column 152 can be embedded into the through hole 151 of the connecting plate 150 for a connection of the two main bodies 1. Other functions and components of this preferred embodiment are the same as those described in the first preferred embodiment, and thus will not be repeated.

[0025] With reference to FIGS. 3 and 4 for the second preferred embodiment of the present invention, the connecting column 152 of the main body 1 can be extended into the through hole 151 of the connecting plate 150 of the first preferred embodiment, such that the main bodies of the first and second preferred embodiments can be combined with each other to increasing the using area (as shown in FIGS. 5 and 6), and other functions of this preferred embodiment are the same as those described in the first preferred embodiment, and thus will not be repeated.

[0026] With reference to FIGS. 7 to 10 for the third preferred embodiment of the present invention, the difference of the third preferred embodiment from the first and second

preferred embodiments resides on that the main body 1 and the suction cup 12 of the first and second preferred embodiments are fixed (as shown in FIGS. 7 and 8), and the connection between the main body 1 and the suction cup 12 of the third preferred embodiment is achieved by a plurality of slots 16 formed downwardly from the bottom surface of the main body 1 and provided for receiving the joint columns 120 extended upwardly from the top of the suction cup 12 (as shown in FIGS. 9 and 10), and other functions of this preferred embodiment are the same as those described in the first and second preferred embodiments, and thus will not be repeated.

[0027] In the second preferred embodiment of the present invention, the connecting column 152 of the main body 1 can be extended into the through hole 151 of the main body 1 of the first preferred embodiment, so that the main bodies 1 of the first and second preferred embodiments can be engaged with one another. After the two main bodies 1 are combined, the two main bodies 1 are placed on a plane 2 and then the suction cups 12 of the two main bodies 1 are pressed to attach the suction cups 12 of the two main bodies 1 onto the plane 2, so as to fix the two main bodies 1 onto the plane 2 to increase the using area and achieve the fixation effect (as shown in FIG. 10). Further, the opening 13 and the groove 14 of the main body 1 are provided for facilitating drainage, ventilation and moisture resistance (as shown in FIGS. 1 and 2). In addition, the first, second and third preferred embodiments of the present invention are not limited to the arrangement of combining two main bodies 1 only, but more than two main bodies 1 can be combined as well.

[0028] With reference to FIGS. 11 to 14 for the fourth preferred embodiment, the difference of this preferred embodiment from the previous preferred embodiment resides on that the suction floor mat of the fourth preferred embodiment is formed by connecting a plurality of floor mat units 1 with one another, and each floor mat unit 1 comprises a plurality of upper and lower support ribs 10, 11 arranged in a criss-cross pattern, a plurality of suction cups 12 disposed on the bottom surface of each floor mat unit 1, a vertical opening 13 formed between adjacent upper and lower support ribs 10, 11 of each floor mat unit 1, and an arc-shaped groove 14 formed on the bottom surface of each lower support rib 11. When use, the floor mat units 1 of the fourth preferred embodiment are cut, so that the floor mat units 1 allow the cups 3 to be placed on the floor mat units 1 and let the cups 3 to dry naturally (as shown in FIG. 12), or a computer system 4 is placed on the floor mat units 1, so that the computer system 4 is not in contact with the floor to achieve the moisture resisting function (as shown in FIG. 13), or the suction floor mat of the fourth preferred embodiment is laid in a room 5, and then extra portions are cut, so that uses can walk on the suction floor mat in the room 5 comfortably.

[0029] In summation, the present invention has the following advantages and effects:

[0030] 1. The bottom surface of the main body 1 has the suction cups 12 that can be attached onto the plane 4 to fix the main body 1 onto the plane 4 to provide a convenient fixation effect.

[0031] 2. The main body 1 has the opening 13 and the groove 14 to facilitate drainage and provides the effects of ventilation and moisture resistance.

[0032] 3. For a large area, users can combine a plurality of main bodies 1 to meet their requirements.

[0033] In summation of the above description, the present invention achieves the expected functions and effects and further complies with the patent application requirements and is duly submitted for patent application. While the invention is described in some detail hereinbelow with reference to certain illustrated embodiments, it is to be understood that there is no intent to limit it to those embodiments. On the contrary, the aim is to cover all modifications, alternatives and equivalents falling within the spirit and scope of the invention as defined by the appended claims.

What is claimed is:

- 1. A suction floor mat, comprising:
 - a main body,
 - a plurality of upper and lower support ribs disposed at the top and bottom of the main body and arranged in a criss-cross pattern,
 - a plurality of suction cups, fixed onto a bottom surface of the main body;
 - a vertical opening, formed between adjacent upper and lower support ribs;
 - a groove, formed at a bottom surface of each lower support rib; and
 - at least one connecting structure, disposed at two adjacent edges of the main body.
- 2. The suction floor mat of claim 1, wherein the groove is in an arc shape.
- 3. The suction floor mat of claim 1, wherein the connecting structure is coupled to two main bodies, and one of the main bodies has a connecting plate protruded outwardly from two adjacent edges of the main body, and the connecting plate has a longitudinal through hole penetrating through the connecting plate, and the other main body has a connecting column protruded downwardly from two adjacent edges and corresponding to the through hole of the connecting plate, so that when the two main bodies are engaged, the connecting column is embedded into the through hole of the connecting plate.
- 4. A suction floor mat, comprising a plurality of floor mat units coupled with one another, and each floor mat unit comprising a plurality of upper and lower support ribs formed on the floor mat unit and arranged in a criss-cross pattern, a plurality of suction cups disposed on a surface of the floor mat unit, a vertical opening formed between adjacent upper and lower support ribs of each floor mat unit, and a groove formed on a bottom surface of each lower support rib.
- 5. The suction floor mat of claim 4, wherein the groove is in an arc shape.

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