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(54) ELASTIC CUSHION AND PIECE OF FURNITURE PROVIDED WITH SAME

(57) The present disclosure provides an elastic pad for making a furniture product and a furniture comprising the same. The elastic pad includes a mounting layer, a plurality of elastic modules, an elastic balance net and a flexible cover. A plurality of raised blocks are arranged on a top surface of the mounting layer; each elastic module is opened at the lower part to be nested on the corresponding raised block, where an outer diameter of the raised block is greater than or equal to an inner diameter of the elastic module at a corresponding height. According to the present disclosure, elastic modules are mounted by arranging raised blocks. As compared with the approach of mounting elastic modules by arranging a chute, the approach of mounting elastic modules according to the present disclosure enables the respective elastic modules to be mounted independently of one another. For example, when a certain elastic module is damaged, the elastic module may be removed for repairment, without removing other elastic modules.

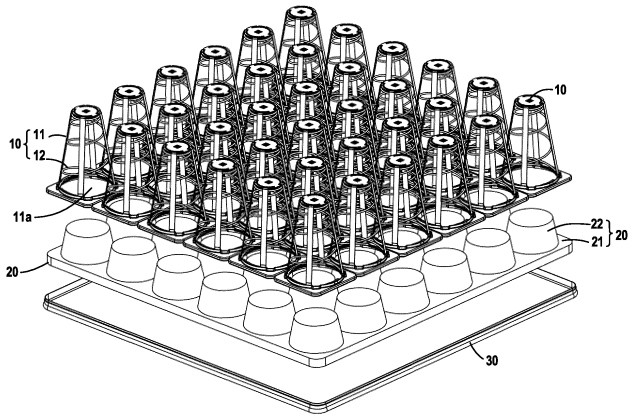

Fig.1

Processed by Luminess, 75001 PARIS (FR)

Description

TECHNICAL FIELD

[0001] The present disclosure relates to the furniture field, and specifically to an elastic pad for making a household product and a furniture comprising the same.

BACKGROUND

[0002] Users' demands for household products are changing with the improvement of the life. In particular, demands on mattresses, sofa cushions and the like which are provided for users to sit and lie for a long time are increasingly growing and becoming diversified.

[0003] In the current household market, the mattresses are significantly divided into high-end mattresses and low-end mattresses. Low-end mattresses are typically thin in thickness to facilitate transport and storage, but cannot fully satisfy the users' demands on comfort. High-end mattresses generally have complicated inner structures, exquisite craftsmanship and large thicknesses, and can provide much comfort for users when they are sitting or lying thereon. Because of their complicated internal structures, the high-end mattresses cannot be disassembled, which are typically one-piece mattresses, bringing users much convenience in transporting and storing them. In addition, as some components of the high-end mattress have aged, users have to discard the whole mattress because there is no way to carry out precise maintenance. This also leads to a waste of money.

[0004] Since the high-end mattresses generally include a plurality of elastic modules arranged in an array, it is difficult to achieve detachable high-end mattresses. In the case, how to mount and fix a plurality of elastic module in a convenient and effortless manner is still a subject worthy of further study.

[0005] As a result, there arises a need for an elastic pad and a furniture, to address at least a part of the above-mentioned problem.

SUMMARY

[0006] The main objective of the present disclosure is to provide an elastic pad and a furniture comprising the same. In the elastic pad according to the present disclosure, there is provided a plurality of elastic modules, the bottom layer structure of the elastic pad is provided with a plurality of upward protrusions, and the elastic modules can be fixed on the bottom layer structure of the elastic pad by inserting the protrusions into the elastic modules one by one. Such an elastic pad mounting approach is convenient and can be easily carried out, and extra rigid structures, such as rails for mounting elastic modules, can be omitted, thereby reducing the weight of the elastic pad. Further, as compared with the manner of mounting elastic modules via a chute, the approach of mounting elastic modules according to the present disclosure enables the respective elastic modules to be mounted independently of one another. For example, when a certain elastic module is damaged, the damaged elastic module may be removed for repairment, without removing other elastic modules.

[0007] The approach of mounting an elastic pad according to the present disclosure enables users to quickly disassemble the elastic pad by themselves. The following convenience is provided to users, including: 1. transportation and storage demands in daily life can be wll satisfied; 2. if a part of the structure of the detachable elastic pad is aged, users may purchase the corresponding fittings and continue to use the detachable elastic pad by only replacing the aged part; and 3. according to the needs in use, the users may select corresponding fittings to assemble the personalized detachable elastic pads that satisfy their own needs.

[0008] According to an aspect of the present disclosure, there is provided an elastic pad for making a furniture product, comprising:

a mounting layer comprising a bottom surface and a top surface opposite to the bottom surface, wherein a plurality of raised blocks are formed on the top surface;

a plurality of elastic modules, each of which is formed with an opening at a lower part thereof so that the plurality of elastic modules can be respectively nested on corresponding raised blocks of the mounting layer;

an elastic balance net having a plurality of openings formed to correspond to the plurality of elastic modules one by one, wherein a dimension of each opening is set to be consistent with an outer diameter of the elastic module at a predetermined height close to a top, so that the plurality of the elastic modules are respectively nested in the openings to support the elastic balance net at the predetermined height of the elastic modules and to thus link all of the elastic modules; and

a flexible cover configured to form a closed space which covers the mounting layer, the plurality of elastic modules and the elastic balance net therein.

[0009] In an embodiment, an outer diameter of the raised block is greater than or equal to an inner diameter of the elastic module at a corresponding height.

[0010] In an embodiment, the raised block is configured as a frame having a truncated conical contour or is configured to be a supporting frame that can be supported in a raised block receiving portion.

[0011] In an embodiment, outer contours of the raised block and the elastic module are respectively configured with truncated conical shapes, wherein an angle of an

outer conical surface of the raised block relative to a bottom surface thereof is equal to an angle of an outer conical surface of the elastic module relative to a bottom surface thereof.

[0012] In an embodiment, the raised block includes a top segment and a bottom segment, wherein the bottom segment and the elastic module are respectively configured in truncated conical shapes that can fit with each other, and the top segment is of a spherical structure.

[0013] In an embodiment, the raised block has a hollow or solid configuration.

[0014] In an embodiment, the raised block has a hollow configuration, and a top of the raised block is a closed end or has an opening, while a bottom of the raised block is a closed end or opened.

[0015] In an embodiment, the raised block is directly fixed on a top surface of the mounting layer by bonding or ultrasonic welding.

[0016] In an embodiment, the mounting layer comprises a non-woven layer which comprises a plurality of raised block receiving portions opened at bottom, so that the non-woven layer can correspondingly cover the plurality of raised blocks, and the plurality of raised blocks can be fixed on the mounting layer by means of the non-woven layer. In an embodiment, edges of the non-woven layer or opening edges of the raised block receiving portions are fixed with the top surface of the mounting layer by ultrasonic welding.

[0017] In an embodiment, the raised block receiving portion is configured in a truncated conical shape consistent with the shape of the raised block.

[0018] In an embodiment, the raised blocks are arranged in an array.

[0019] In an embodiment, the elastic pad further comprises an elastic pad layer arranged over the elastic balance net.

[0020] In an embodiment, the flexible cover comprises a top layer, a bottom layer and a side girdle that can be assembled as one piece via connectors, wherein the mounting layer is independent of the bottom layer of the flexible cover, or the mounting layer is integrated on the bottom layer of the flexible cover.

[0021] In an embodiment, the elastic module comprises a conical spring and a spring bracket for receiving the conical spring; or the elastic module comprises only a conical spring.

[0022] In an embodiment, the flexible cover is configured to be detachable, and the elastic modules, the mounting layer and the elastic balance net can be separated from one another and stored respectively.

[0023] According to a further aspect of the present disclosure, there is provided a furniture comprises the elastic pad according to any one of the above-mentioned solutions.

BRIEF DESCRIPTION OF THE DRAWINGS

[0024] For the sake of better understanding on the above and other objectives, features, advantages, and functions of the present disclosure, the preferred embodiments are provided with reference to the drawings. The same reference symbols refer to the same components throughout the drawings. It is to be understood by those skilled in the art that the drawings are merely provided to illustrate preferred embodiments of the present disclosure, without suggesting any limitation to the protection scope of the present application, and respective components therein are not necessarily drawn to scale.

Fig. 1 is an exploded view of a partial internal structure within an elastic pad according to an embodiment of the present disclosure;

Figs. 2A, 2B, 3 and 4 illustrate some alternative embodiments of the mounting layer in Fig. 1;

Fig. 5 is a schematic diagram separately illustrating the mounting layer in Fig. 1;

Figs. 6A-6D are schematic diagrams illustrating some possible cross-sections taken along the A-A line in Fig. 5;

Figs. 7A-7F are schematic diagrams illustrating an assembling process of an elastic pad according to an embodiment of the present disclosure; and

Figs. 8A-8D are schematic diagrams illustrating an assembling process of an elastic pad according to a further embodiment of the present disclosure.

DETAILED DESCRIPTION OF EMBODIMENTS

[0025] Reference now will be made to the drawings to describe in detail embodiments of the present disclosure. What will be described herein will only cover preferred embodiments of the present disclosure, and those skilled in the art would envision other possible manners which also fall into the scope described herein, based on the preferred embodiments described herein.

[0026] According to the present disclosure, there are provided an elastic module for a household product and a furniture comprising the same. The elastic pad may be, for example, a mattress, a sofa cushion or other pad for a user to sit or lie thereon. Figs. 1-8 illustrate some preferred embodiments according to the present disclosure.

[0027] It is worth noting that directional and positional terms as mentioned here are to be read with reference to the embodiments as shown in Figs. 1-8. The directional and positional terms used here all indicate relative directions and positions among respective components, rather than absolute directions and positions.

[0028] Referring now to Figs. 1-7F, the elastic pad according to a preferred embodiment of the present disclosure is a cuboid structure, and the top surface and the bottom surface of the cuboid structure may be

of a square shape. Referring to Fig. 1, in an embodiment, the elastic pad includes a mounting layer 20 and a plurality of elastic modules 10. Wherein, the mounting layer includes a bottom surface and a top surface 21, where a plurality of raised blocks are arranged on the top surface 21. Specifically, the raised blocks 22 are arranged densely in an array on the mounting layer 20. The plurality of elastic modules 10 correspond to the plurality of raised blocks 22 one by one, and each elastic module 10 at the upper part includes an opening 11a so as to be nested on the corresponding raised block 22. For example, the elastic module 10 may include a spring bracket 11 substantially of a truncated cone shape and a conical spring 12 located within the spring bracket 11. In order to cause the elastic module 10 to firmly cooperate with the raised block 22, the outer diameter of the raised block 22 may be set to be greater than or equal to an inner diameter of the elastic module 10 at a corresponding height so that the elastic module 10 and the raised block 22 are assembled together in a fashion similar to interference fit.

[0029] Preferably, the raised block 22 and the elastic module 10 are both configured in truncated cone shapes fitting with each other. In other words, an inclined angle of the sidewall of the truncated cone formed by the outer contour of the raised block 22 relative to the bottom wall is equal to the inclined angle of the sidewall of the truncated cone formed by the outer contour of the elastic module 10 relative to the bottom wall. Alternatively, in some embodiments, the inclined angle (which is an acute angle) of the sidewall of the truncated cone formed by the outer contour of the raised block relative to the bottom wall may be less than the inclined angle (which is an acute angle) of the sidewall of the truncated cone formed by the outer contour of the elastic module relative to the bottom wall. It is worth noting that the "outer conical surface" and "bottom surface" of the elastic module and the raised block are not necessarily surfaces actually existing, and edges of the projected contours thereof may form the conical surface and the bottom surface. For example, if the bottom of the elastic module is fully opened without a bottom wall, the bottom contour line of its projected contour may be correspondingly read as its "bottom surface."

[0030] In the present disclosure, by arranging a plurality of raised blocks 22 on the bottom structure inside the elastic pad and nesting a plurality of elastic modules 10 onto the raised blocks 22, it can be achieved that the elastic pad housed therein a plurality of elastic modules 10. The elastic module 10 can be easily removed from the raised block 22 for storage, and can be operated simply when mounted. As compared with the approach of mounting elastic modules via a chute, the approach for mounting elastic modules according to the present disclosure is simpler and brings more convenience in manufacturing the elastic modules. Furthermore, since the respective modules are mounted independently of one another, an elastic module, for example, if damaged, may be removed for repairment, without removing other elastic modules.

[0031] In some embodiments, the elastic pad further includes an elastic balance net 50, an elastic pad layer 60 (see Fig. 7E) and a flexible cover 70 (see Fig. 7F). On the elastic balance net 50 are opened a plurality of openings 51 corresponding to the plurality of elastic modules 10 one by one, and the dimension of each of the openings 51 is consistent with the outer diameter of each of the elastic modules 10 at a predetermined height close to the top so that the elastic balance net 50 can allow the plurality of elastic modules 10 to be respectively nested within the openings 51, to thus link all of the elastic modules 10. The flexible cover 70 is the outermost cover body for covering the mounting layer 20, the plurality of elastic modules 10, the elastic balance net 50 and an elastic pad layer 60. Specifically, the flexible cover 70 includes a flexible cover top layer 71, a flexible cover bottom layer 72 and a flexible cover side girdle 73, where the flexible cover top layer 71, the flexible cover bottom layer 72 and the flexible cover side girdle 73 are preferably separable from one another. Wherein, the flexible cover bottom layer 72 of the flexible cover 70, for example, may be the flexible bottom layer 30 as shown in Fig. 1, or the flexible cover bottom layer 72 be additionally provided on the bottom side of the flexible bottom layer 30.

[0032] For the above arrangement, there are some preferred alternative solutions. For example, referring to Figs. 2A-4, the mounting layer and the flexible bottom layer may be integrated as one piece (i.e., a separate mounting layer may be omitted) so that the plurality of raised blocks are directly fixed on the top surface of the flexible bottom layer.

[0033] Referring to Fig. 2A, in some embodiments, the elastic module 22 may be formed of, for example, sponge and directly adhered to the top surface of the flexible bottom layer 30.

[0034] Referring to Fig. 2B, in some embodiments, the elastic module 22a may be formed of plastic and fixed onto the top surface of the flexible bottom layer 30 by ultrasonic welding.

[0035] Referring to Fig. 3, in some embodiments, the mounting layer includes a non-woven layer 40. The non-woven layer 40 includes a plurality of raised block receiving portions 40a opened at bottom and correspondingly covers the plurality of raised blocks 22, and the edge of the non-woven layer 40 is fixed with the flexible bottom layer 30 by ultrasonic welding so that the non-woven layer 40 can fix the plurality of raised blocks 22 on the flexible bottom layer 30. The raised block 22 is configured in a complete truncated cone shape formed of sponge or plastic.

[0036] Referring to Fig. 4, in some embodiments, the mounting layer includes a non-woven layer 40. The non-woven layer 40 includes a plurality of raised block receiving portions 40a opened at bottom and correspondingly covers the plurality of raised blocks 22b, and the edge of the non-woven layer 40 is fixed with the flexible bottom

layer 30 by ultrasonic welding so that the non-woven layer 40 can fix the plurality of raised blocks 22 on the flexible bottom layer 30. The raised block 22b is a support bracket configured to be supported within the raised block receiving portion 40a. For example, the support bracket may be a wire loop substantially in a truncated cone shape.

[0037] Not only are there multiple options for the approach of fixing the raised blocks relative to the flexible cover bottom, as described above, but multiple preferred arrangements are also available for the structure of the raised block. Figs. 6A-6D are schematic diagrams illustrating some possible cross-sections taken along the A-A line in Fig. 5.

[0038] Referring to Fig. 6A, in some embodiments, the raised block 22 on the mounting layer 21 is closed at a top 222 and opened at a bottom (i.e., having an opening 223), and a sidewall 221 thereof forms a side surface of a truncated cone structure. The raised block 222 is of a hollow structure, and such arrangement cannot only reduce the weight but also can ensure a stable shape of the raised block to prevent it from being deformed severely.

[0039] Referring to Fig. 6B, in some embodiments, the raised block 22c on the mounting layer 21c forms a solid truncated cone shape 221c, where no opening is arranged on the top or bottom. Such arrangement can ensure a stable shape of the raised block to prevent it from being deformed severely.

[0040] Referring to Fig. 6C, in some embodiments, the raised block 22d on the mounting layer 21d is provided with an opening 222d on top and an opening 223d on bottom, and a sidewall 221 thereof forms a side surface of a truncated conical structure. The raised block 222 is of a hollow structure, and the top and the bottom thereof are in gas communication. Such arrangement can prevent the raised block from overexpanding when it is heated. In addition, when the elastic module has a too small inner diameter, the raised block can radially constrict to adaptively engage the elastic module.

[0041] Referring to Fig. 6D, in some embodiments, the raised block 22e on the mounting layer 21e includes a top segment 222e and a bottom segment 221e, where the bottom segment 221e is of a truncated cone shape fitting with the shape of the elastic module 10, the top segment 222e is of a spherical structure, an opening may be provided in the top center of the top segment 222e, an opening 223e is also provided on the bottom of the raised block 22e, and the entirety of the raised block 22e forms a hollow configuration. The arrangement of the spherical structure can play a guiding role when an elastic module is mounted.

[0042] Figs. 7A-7F illustrate an assembling process of an elastic pad according to some embodiments. The elastic pad as shown in Figs. 7A-7F is a cuboid elastic pad, where the top surface and the bottom surface of the cuboid may be substantially of a square shape. In the assembling process, the mounting layer 20 provided with a plurality of raised blocks 22 is arranged on the top surface of the flexible bottom layer 30 (see Fig. 7A), a plurality of elastic modules 10 are then mounted downwards to the raised blocks 22 one by one, to cause each raised block 22 to enter into the corresponding elastic module 10 from the bottom opening 11a thereof, and the elastic module 10 and the raised block22 engage each other substantially in interference fit (see Figs. 7B and 7C). After all the elastic modules 10 are mounted, the elastic balance net 50 are arranged on top of the plurality of elastic modules 10, and through holes 51 on the elastic balance net 50 correspondingly nest therein top segments of the respective elastic modules 10 (see Fig. 7D). Preferably, an elastic pad layer 60 may be provided on top of the elastic balance net 50 (see Fig. 7E). Subsequently, the flexible cover 70 is used to cover the internal structure of the elastic pad. For example, the side girdle 73 and the flexible cover bottom layer 72 of the flexible cover 70 may be connected, and the flexible cover top layer 71 and the flexible cover side girdle 73 may be connected (see Fig. 7F). Specifically, the side girdle 73 and the flexible cover bottom layer 72, and the side girdle 73 and the flexible cover top layer 71 may be connected via a connector, respectively, and the connector may be, for example, a slide fastener, magic tape or the like.

[0043] Figs. 8A-8D illustrate an assembling process of an elastic pad according to some other embodiments. The elastic pad as shown in Figs. 8A-8D is a cuboid elastic pad, where the top surface and the bottom surface of the cuboid may be substantially of a quadrilateral shape with four right angles, excluding a rectangular. In the assembling process, a mounting layer 200 provided with a plurality of raised blocks 220 is arranged on the top surface of the flexible bottom layer 300 (see Fig. 8A), a plurality of elastic modules 100 are then mounted downwards to the raised block 22 one by one, to cause each raised block 220 to enter into the corresponding elastic module 100 from the bottom opening thereof, and the elastic module 100 and the bump 22 engage each other substantially in interference fit (see Fig. 8B). After all the elastic modules 100 are mounted, the elastic balance net 500 are arranged on top of the plurality of elastic modules 100. Preferably, an elastic pad layer 600 may be provided on top of the elastic balance net 500 (see Fig. 8C). Subsequently, the flexible cover 700 is used to cover the internal structure of the elastic pad. For example, the side girdle and the flexible cover bottom layer of the flexible cover may be connected, and the flexible cover top layer and the flexible cover side girdle may be connected (see Fig. 8D).

[0044] In the above embodiments, the elastic modules each include a conical spring bracket. However, in some embodiments, the elastic modules each may only include a conical spring, i.e., the conical spring can be directly nested onto the raised block. In addition, it is worth noting that, since the mounting layer according to the present disclosure may be integrated in the flexible cover bottom

layer (or the flexible bottom layer), "fixing the raised blocks on the mounting layer" may be read as "fixing the raised blocks on the flexible cover bottom layer or flexible bottom layer." It would be appreciated that the respective embodiments of the present disclosure may be combined with each other, and the combined solutions still do not depart from the present disclosure.

[0045] The elastic pad according to the present disclosure may have other applications than the application to furniture. For example, the elastic pad according to the present disclosure may be used separately as a floor mat or a camping mat for cold protection.

[0046] In the elastic pad according to the present disclosure, there is provided a plurality of elastic modules, and the bottom layer structure of the elastic pad includes a plurality of upward protrusions. The elastic modules are fixed on the bottom layer structure of the elastic pad by inserting the protrusions into the elastic modules one by one. Such elastic pad mounting approach is convenient and can be easily carried out, and extra rigid structures, such as rails for mounting elastic modules, are omitted to thus the weight of the elastic pad. Further, as compared with mounting elastic modules via a chute, the approach of mounting elastic modules according to the present disclosure enables the respective elastic modules to be mounted independently of one another. For example, when a certain elastic module is damaged, the elastic module may be removed for repairment, without removing other elastic modules.

[0047] The approach of mounting an elastic pad according to the present disclosure enables users to quickly disassemble the elastic pad by themselves. The following convenience may be provided to users, including: 1. transportation and storage demands in daily life can be satisfied; 2. if a part of the structure of the detachable elastic pad is aged, users may purchase the corresponding fittings and continue to use the elastic pad by replacing the aged part; and 3. according to the needs in use, the users may select corresponding fittings to assemble personalized detachable elastic pads meeting their own needs.

[0048] The above description on multiple embodiments of the present disclosure are provided to the ordinary skilled in the related field for the purpose of illustration, without any intention to make the present disclosure exclusive or confine the same to a single embodiment disclosed here. As aforementioned, the ordinary skilled in the art would understand that multiple replacements and variations of the present disclosure are also applicable. Therefore, although some alternative embodiments are described here in detail, the ordinary skilled in the art would envision or develop easily other embodiments. The present disclosure is intended to cover all the replacements, modifications and variations of the present disclosure, and other embodiments falling into the spirits and scope described here.

Claims

1. An elastic pad for making a furniture product, comprising:

   a mounting layer (20) comprising a bottom surface and a top surface (21) opposite to the bottom surface, wherein a plurality of raised blocks (22) are formed on the top surface;
   a plurality of elastic modules (10), each of which is formed with an opening at a lower part thereof so that the plurality of elastic modules can be respectively nested on corresponding raised blocks of the mounting layer;
   an elastic balance net (50) having a plurality of openings (51) formed to correspond to the plurality of elastic modules one by one, wherein a dimension of each opening is set to be consistent with an outer diameter of the elastic module at a predetermined height close to a top so that the plurality of the elastic modules are respectively nested in the openings to support the elastic balance net at the predetermined height of the elastic modules and to thus link all of the elastic modules; and
   a flexible cover (70) configured to form a closed space which covers the mounting layer, the plurality of elastic modules and the elastic balance net therein.

2. The elastic pad of claim 1, **characterized in that** an outer diameter of the raised block is greater than or equal to an inner diameter of the elastic module at a corresponding height.

3. The elastic pad of claim 1, **characterized in that** the raised block is configured as a frame having a truncated conical contour or is configured to be a supporting frame that can be supported in a raised block receiving portion.

4. The elastic pad of claim 1, **characterized in that** outer contours of the raised block and the elastic module are respectively configured with truncated conical shapes, wherein an angle of an outer conical surface of the raised block relative to a bottom surface thereof is equal to an angle of an outer conical surface of the elastic module relative to a bottom surface thereof.

5. The elastic pad of claim 1, **characterized in that** the raised block includes a top segment and a bottom segment, wherein the bottom segment and the elastic module are respectively configured in truncated conical shapes that can fit with each other, and the top segment is of a spherical structure.

6. The elastic pad of claim 4 or 5, **characterized in that**

the raised block has a hollow or solid configuration.

7. The elastic pad of claim 4 or 5, **characterized in that** the raised block has a hollow configuration, and a top of the raised block is a closed end or has an opening while a bottom of the raised block is a closed end or opened.

8. The elastic pad of claim 1, **characterized in that** the raised block is directly fixed on a top surface of the mounting layer by bonding or ultrasonic welding.

9. The elastic pad of claim 1, **characterized in that** the mounting layer comprises a non-woven layer which comprises a plurality of raised block receiving portions opened at bottom, so that the non-woven layer can correspondingly cover the plurality of raised blocks and the plurality of raised blocks can be fixed on the mounting layer by means of the non-woven layer.

10. The elastic pad of claim 9, **characterized in that** edges of the non-woven layer or opening edges of the raised block receiving portions are fixed with the top surface of the mounting layer by ultrasonic welding.

11. The elastic pad of claim 9, **characterized in that** the raised block receiving portion is configured in a truncated conical shape consistent with the shape of the raised block.

12. The elastic pad of any one of claims 1-5 and 8-11, **characterized in that** the raised blocks are arranged in an array.

13. The elastic pad of any one of claims 1-5 and 8-11, **characterized by** further comprising an elastic pad layer arranged above the elastic balance net.

14. The elastic pad of any one of claims 1-5 and 8-11, **characterized in that** the flexible cover comprises a top layer, a bottom layer and a side girdle that can be assembled as one piece via connectors, wherein the mounting layer is independent of the bottom layer of the flexible cover, or the mounting layer is integrated on the bottom layer of the flexible cover.

15. The elastic pad of any one of claims 1-5 and 8-11, **characterized in that** the elastic module comprises a conical spring and a spring bracket for receiving the conical spring; or the elastic module comprises only a conical spring.

16. The elastic pad of any one of claims 1-5 and 8-11, **characterized in that** the flexible cover is configured to be detachable, and the elastic modules, the mounting layer and the elastic balance net can be separated from one another and stored respectively.

17. A furniture comprising the elastic pad of any one of claims 1-16.

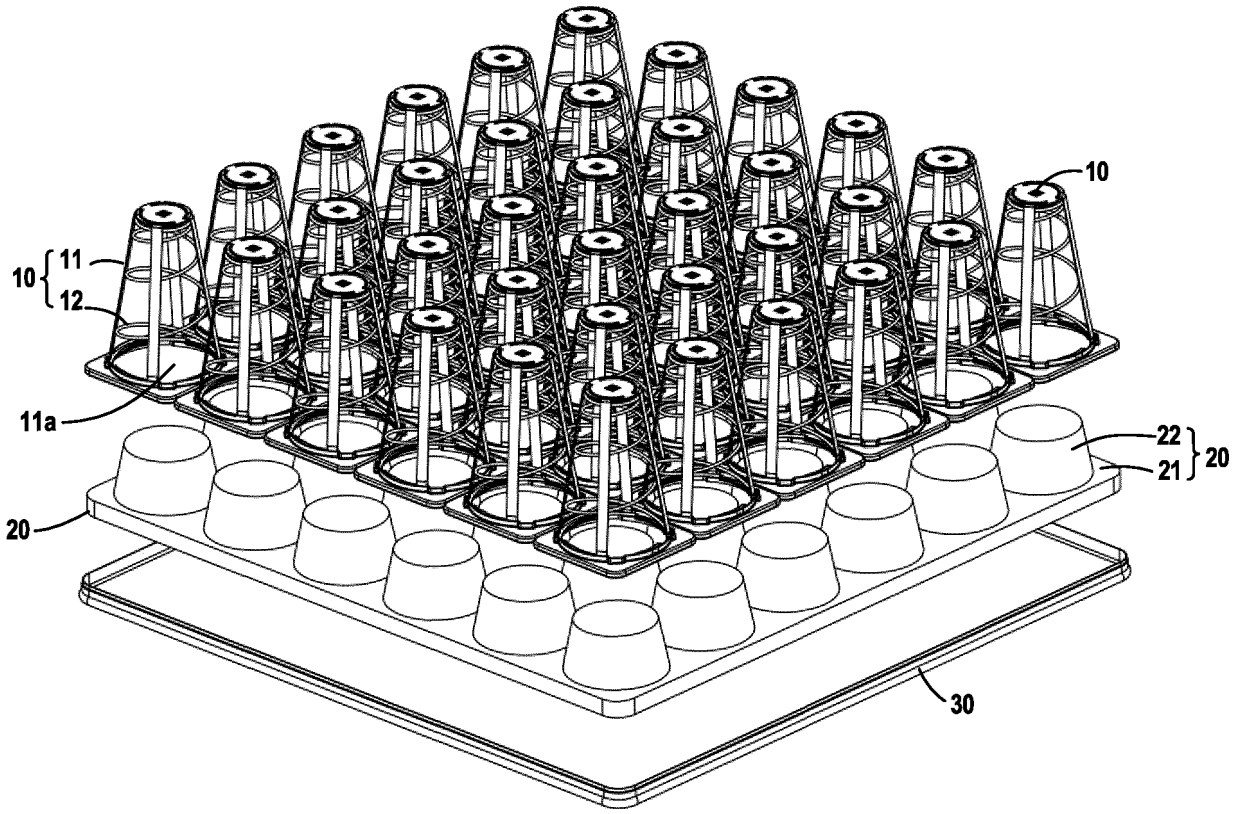

Fig.1

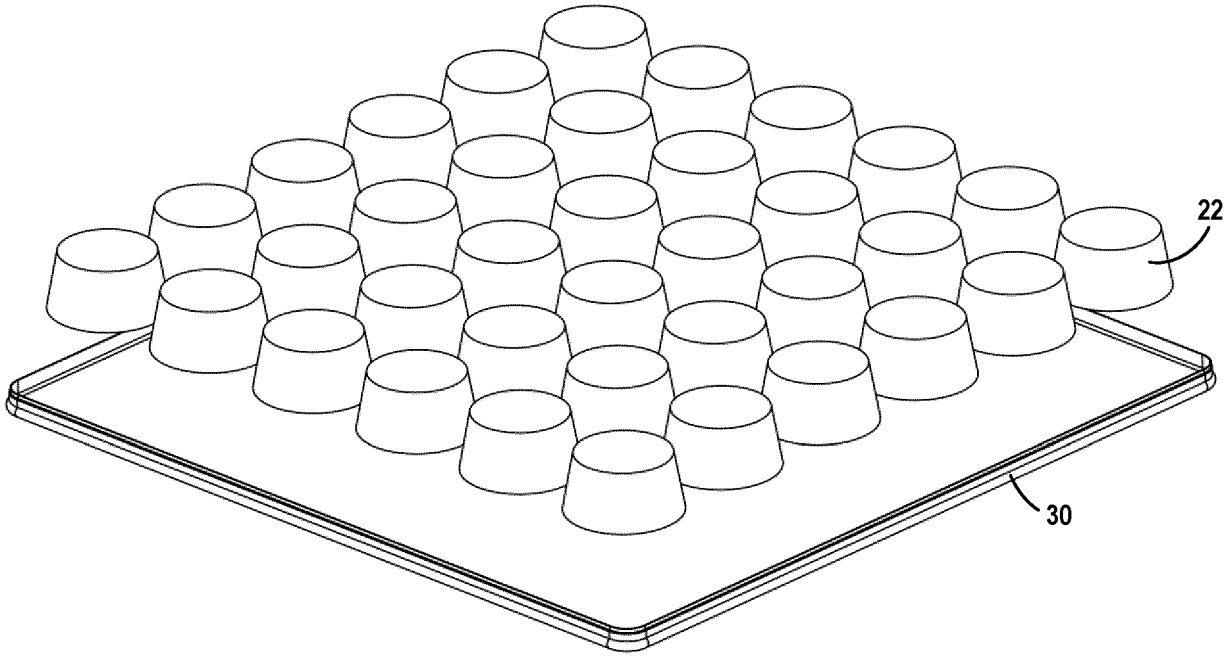

Fig.2A

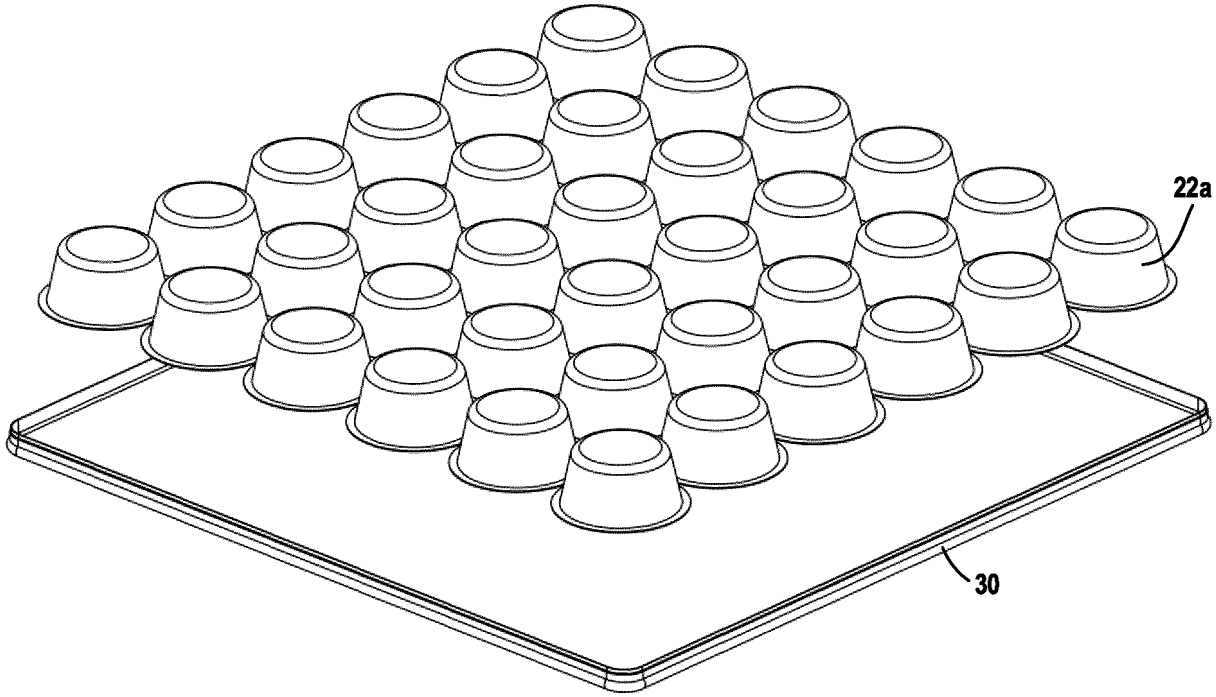

Fig.2B

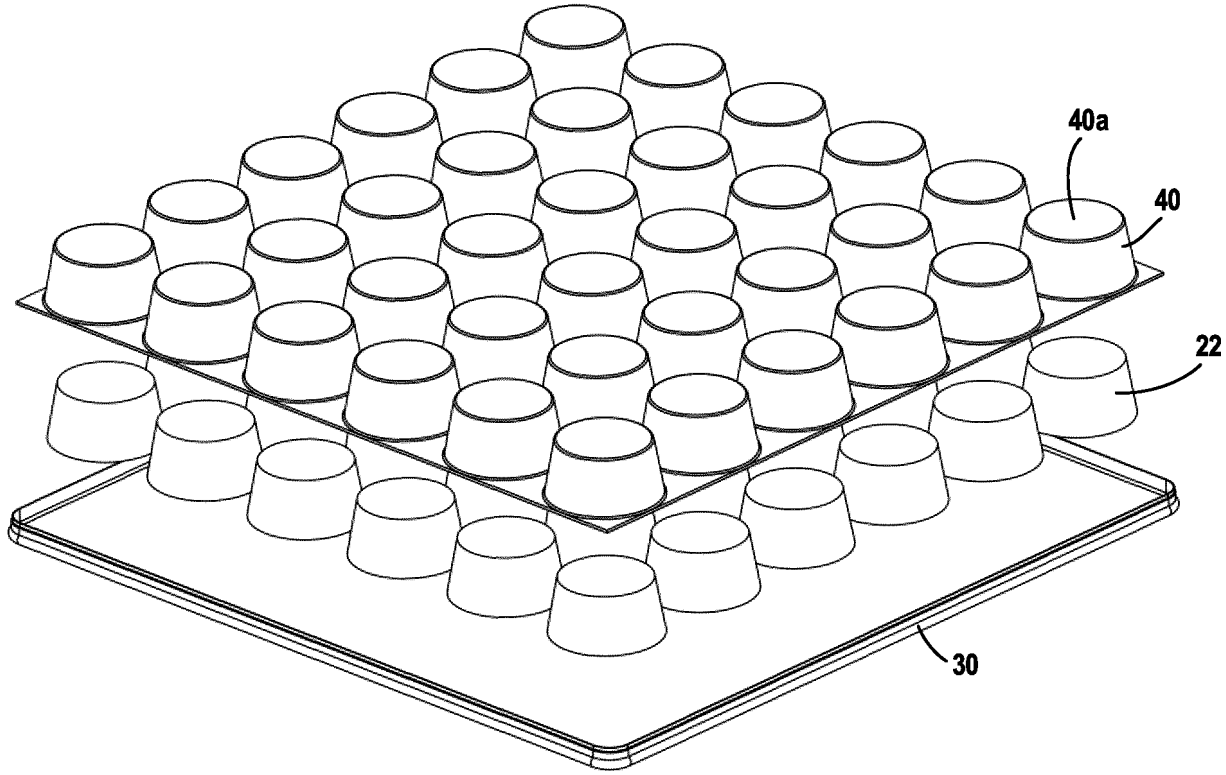

Fig.3

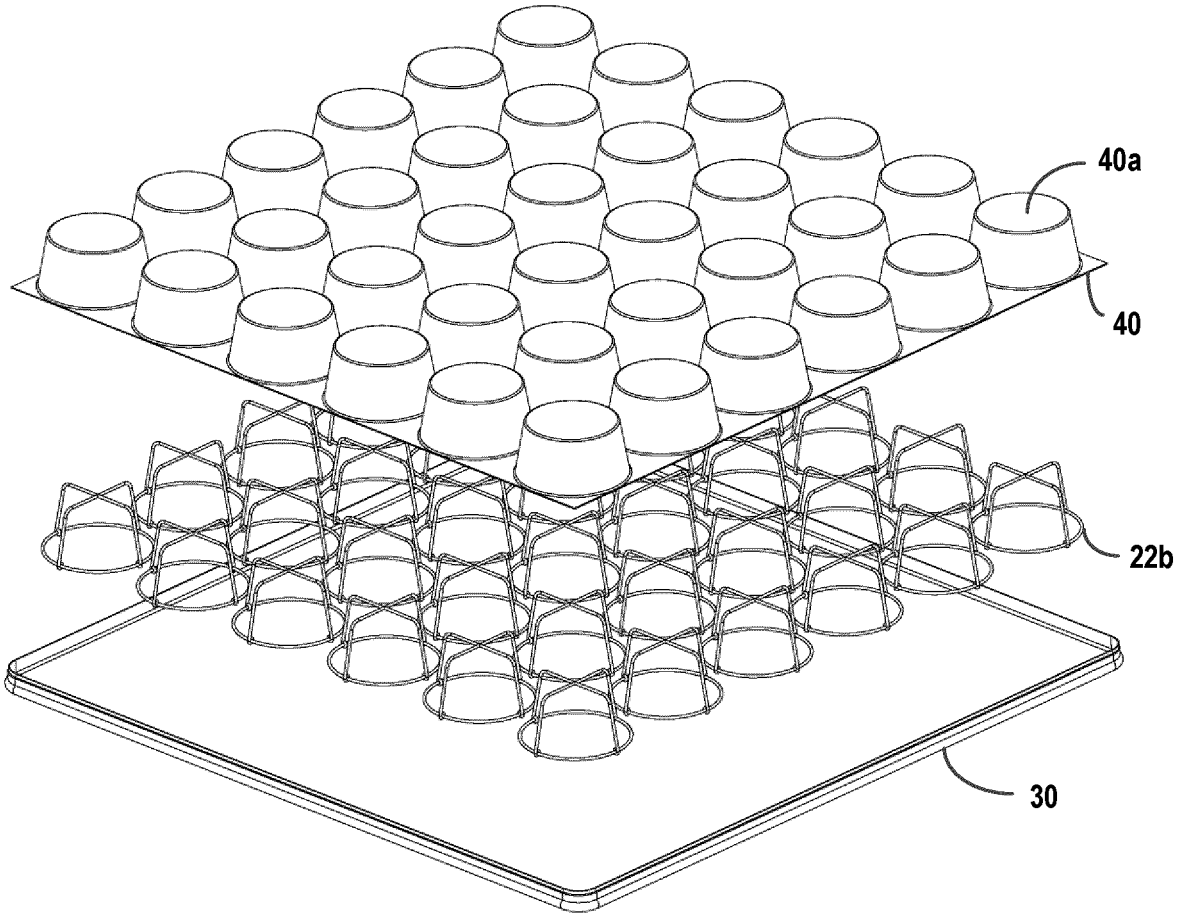

Fig.4

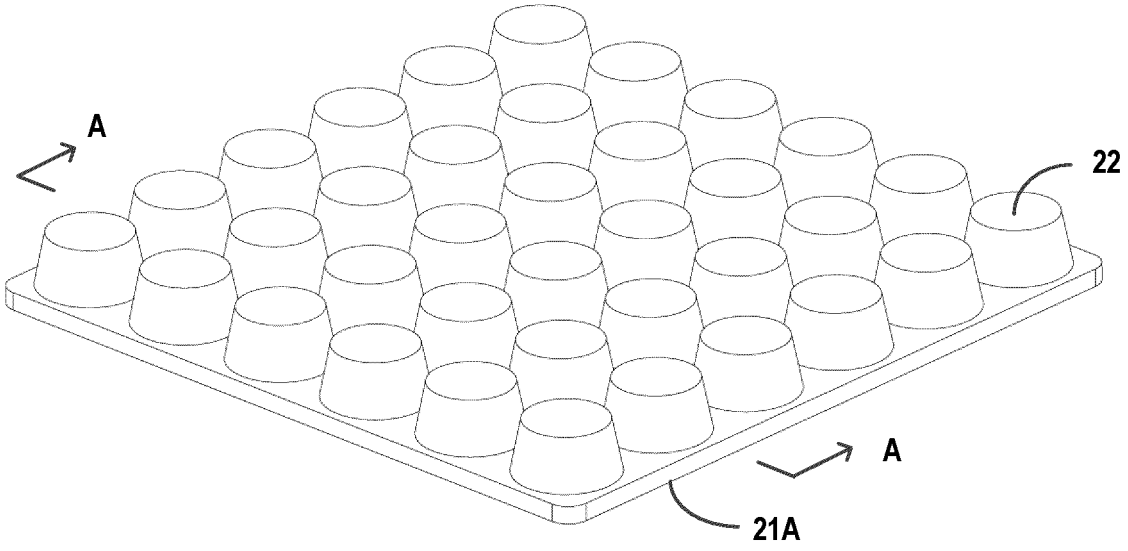

Fig.5

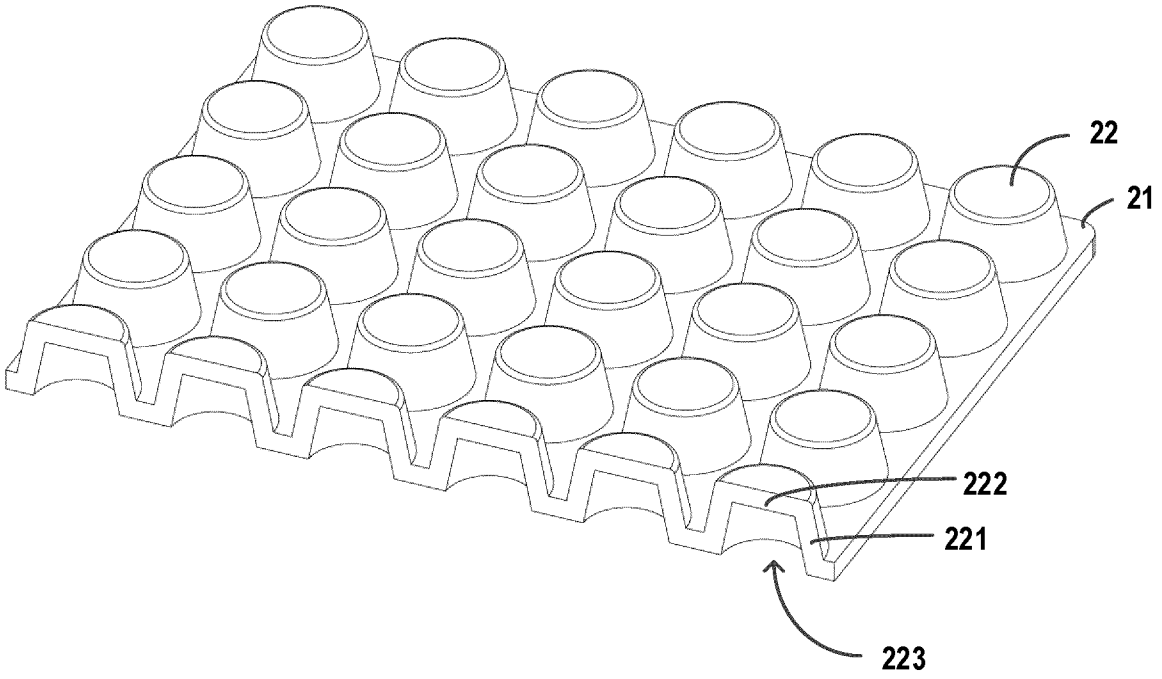

Fig.6A

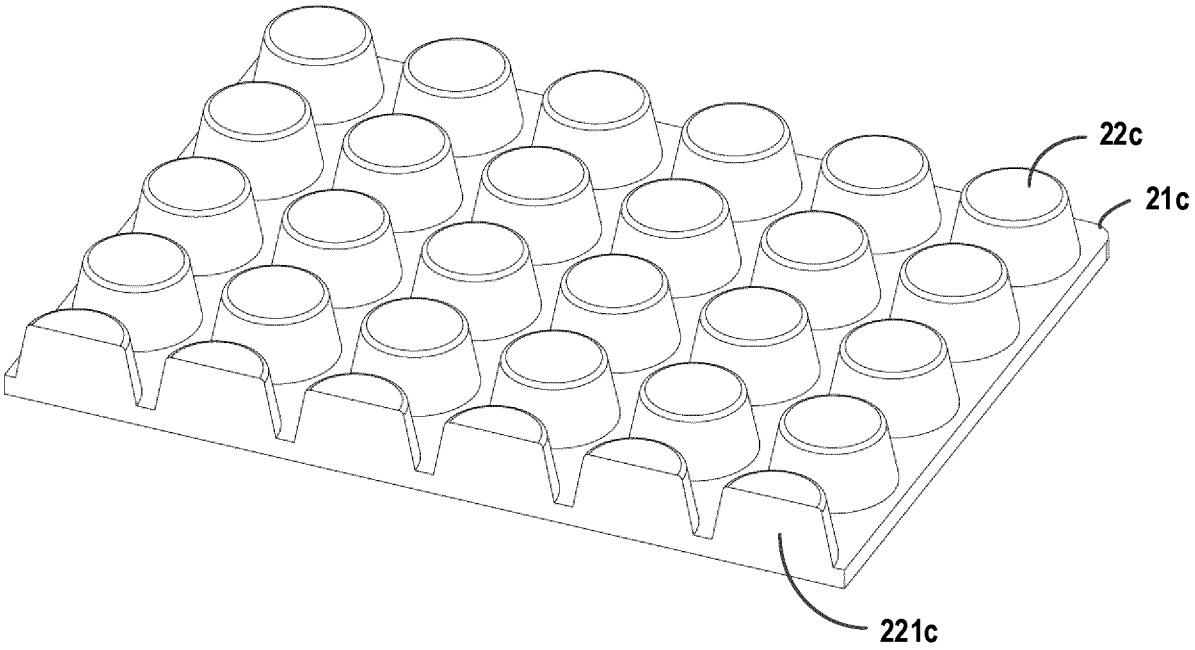

Fig.6B

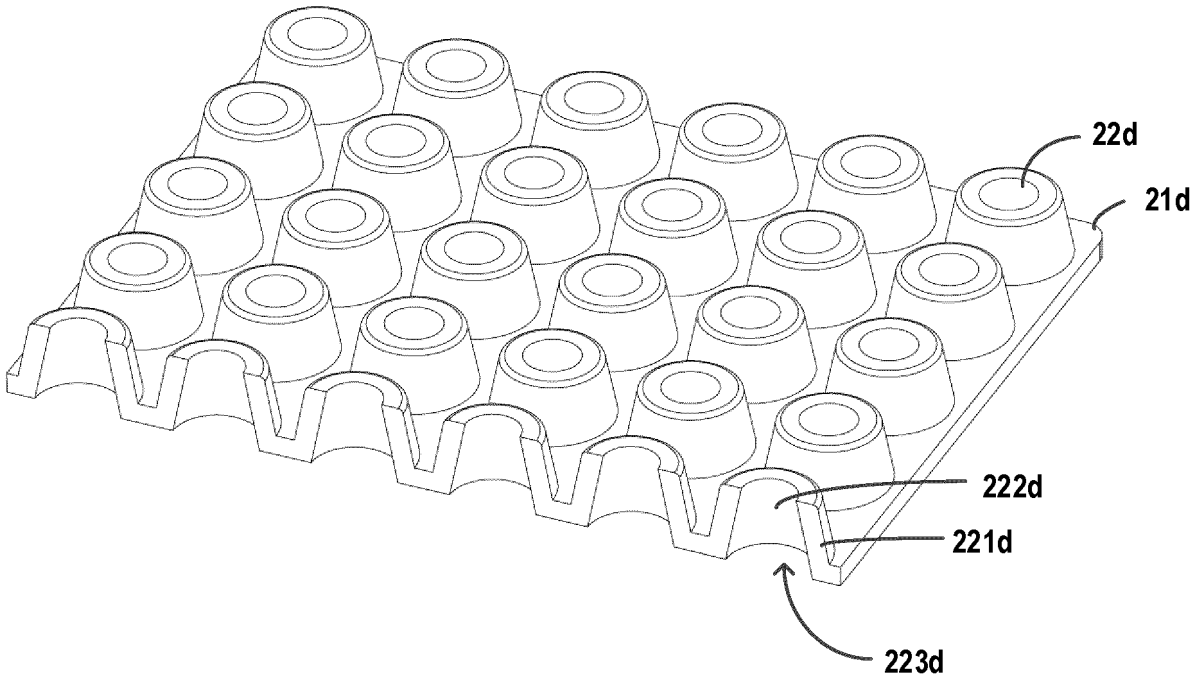

Fig.6C

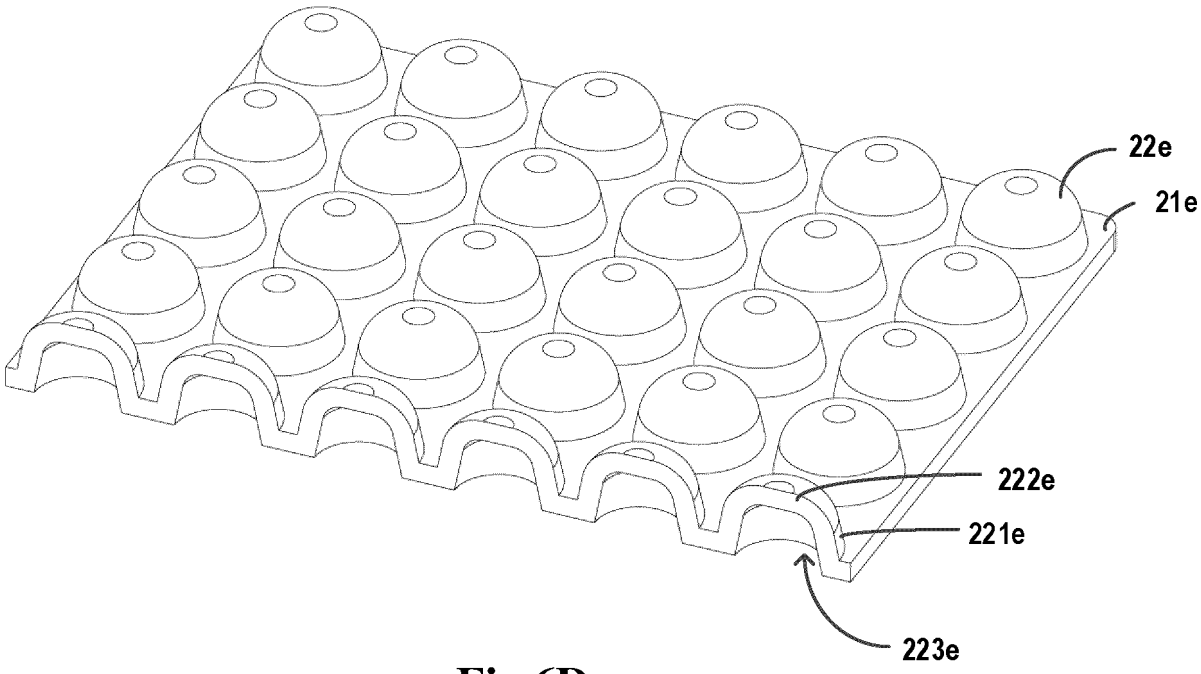

Fig.6D

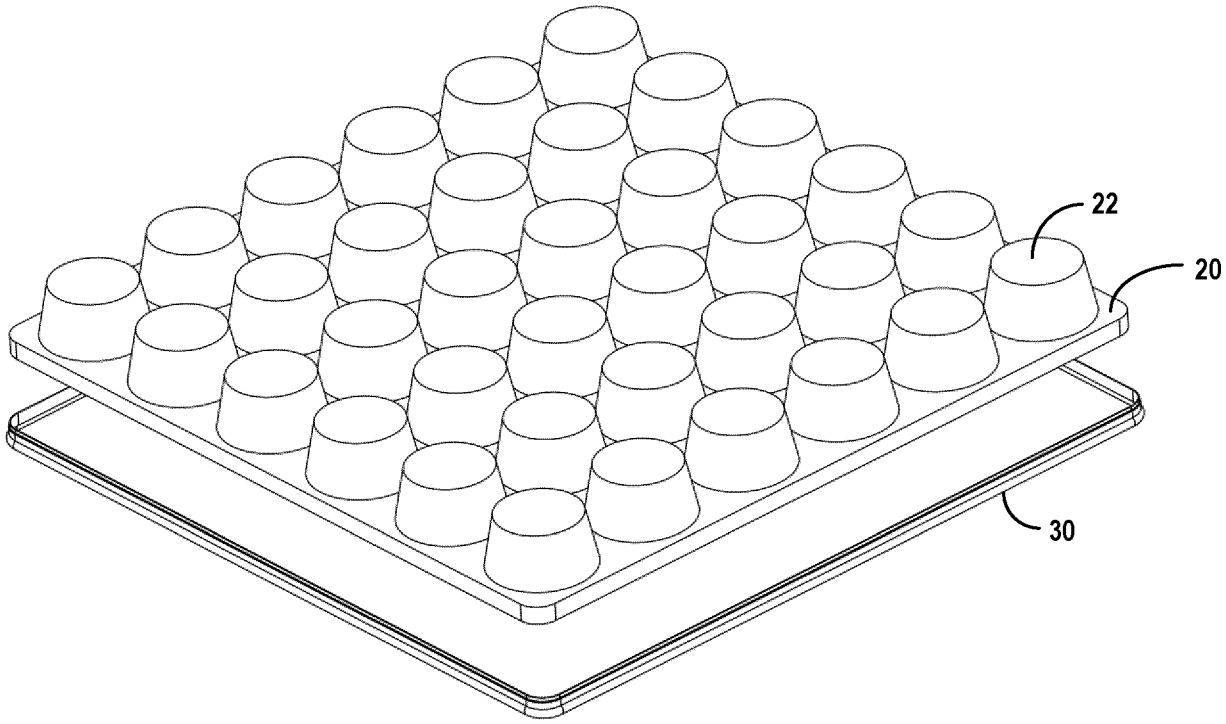

Fig.7A

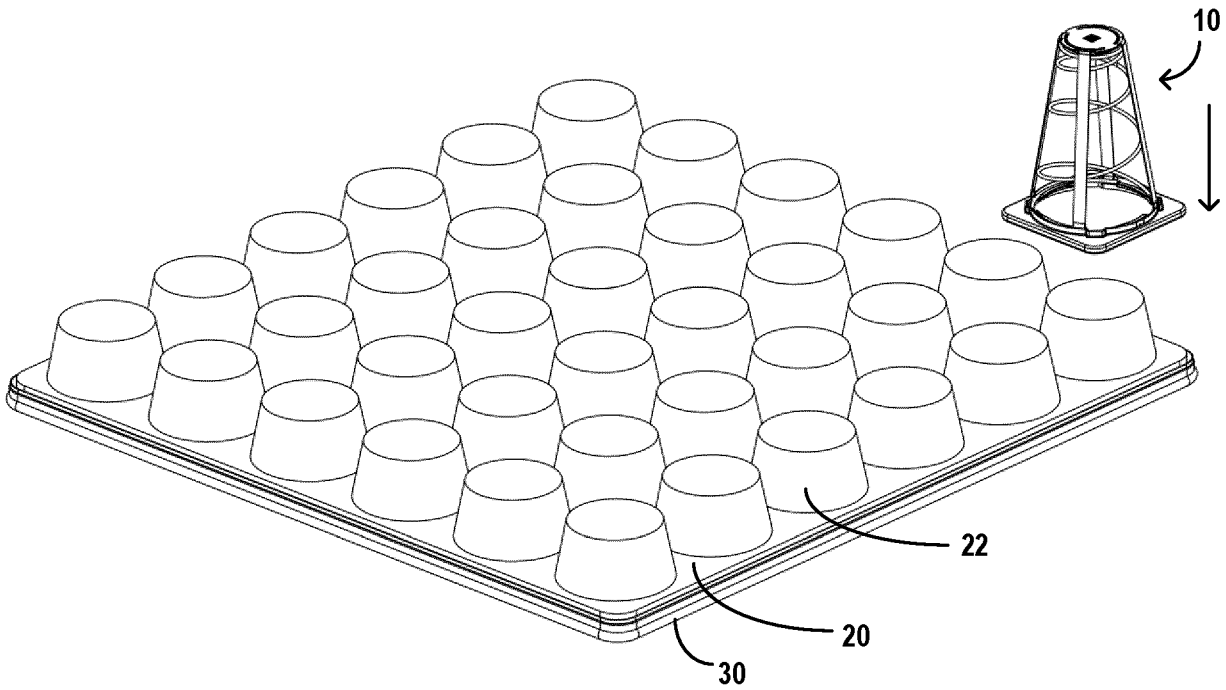

Fig.7B

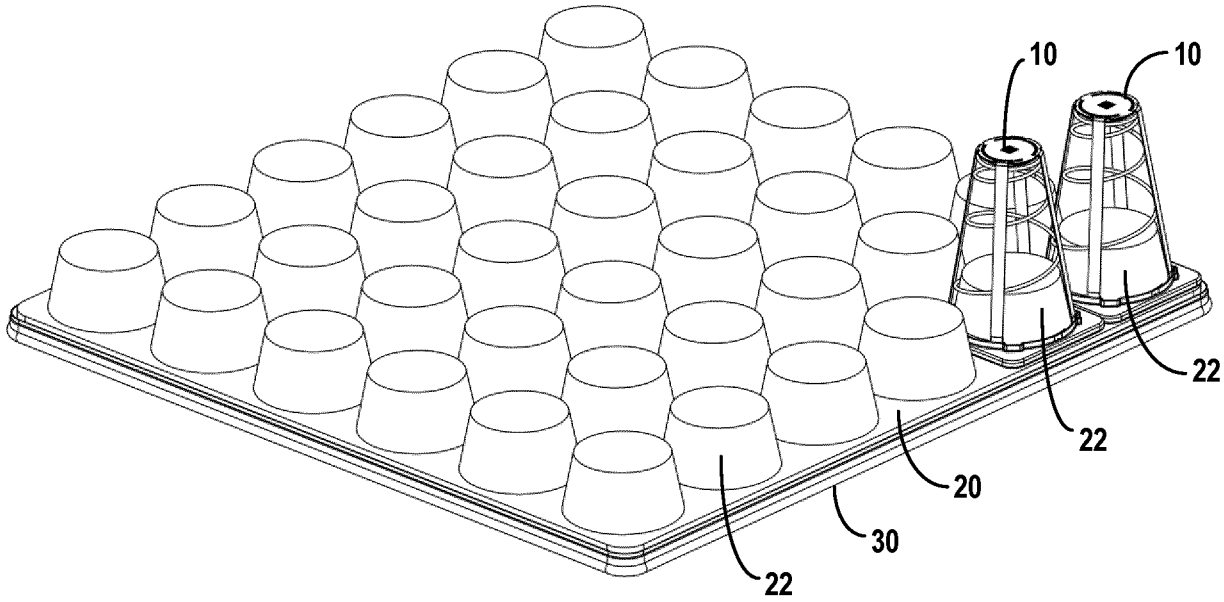

Fig.7C

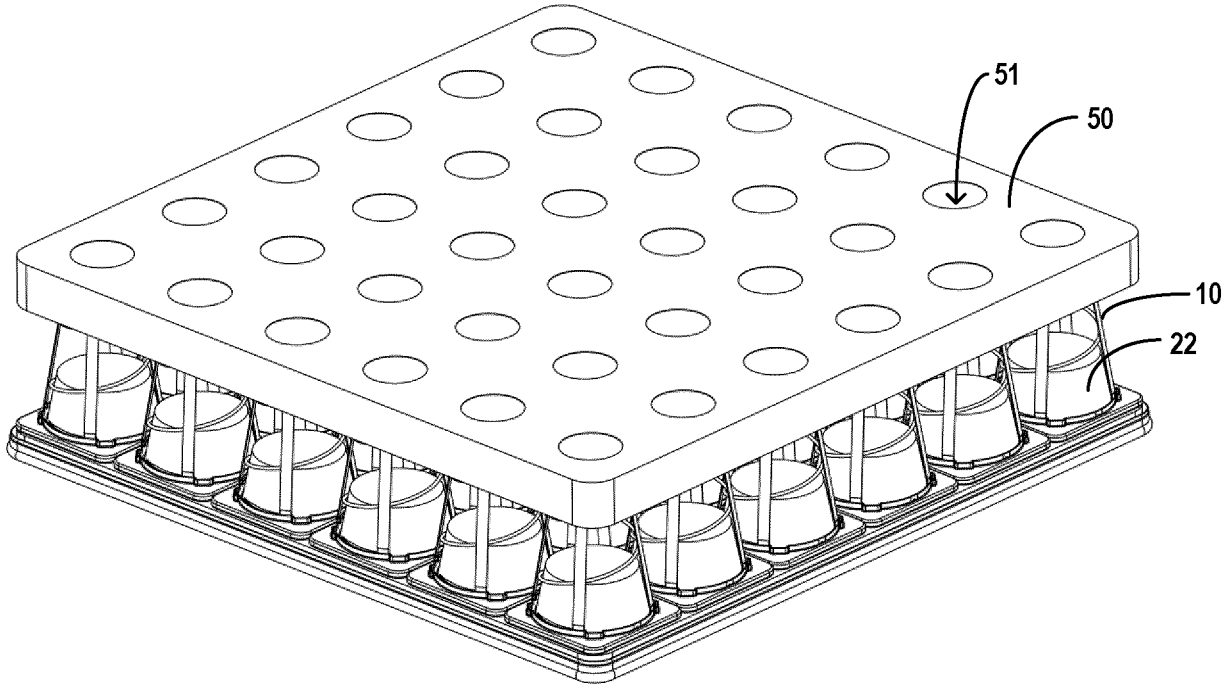

Fig.7D

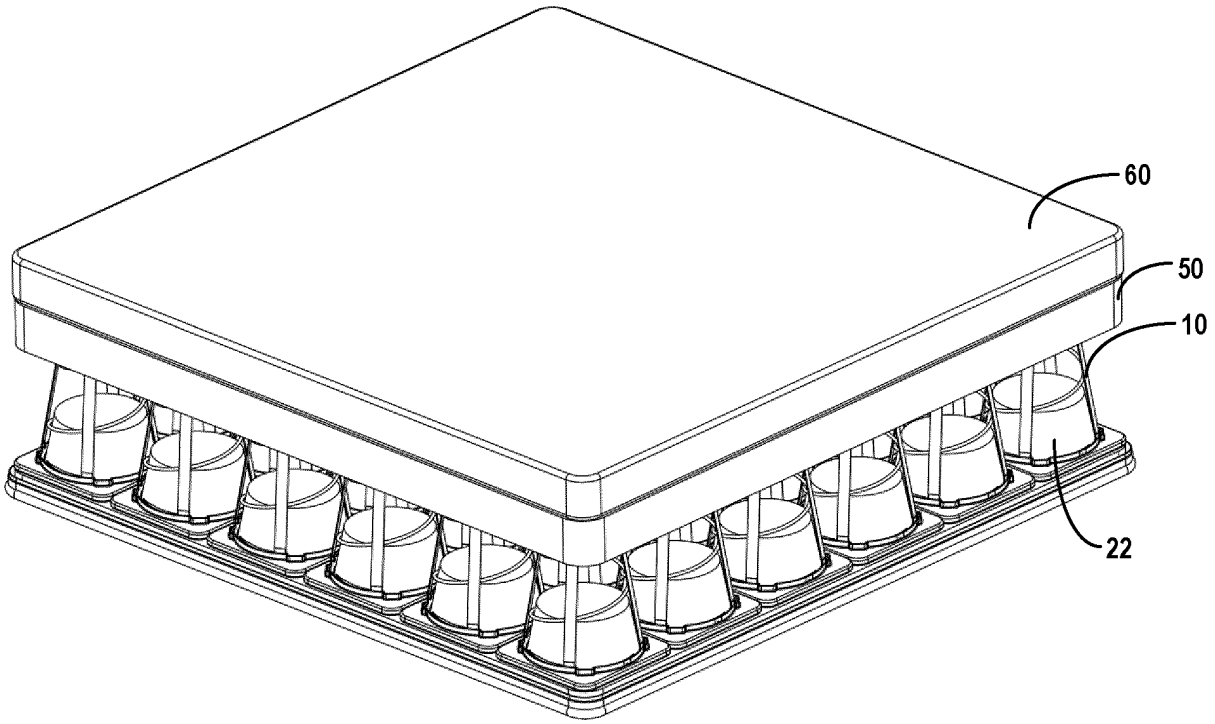

Fig.7E

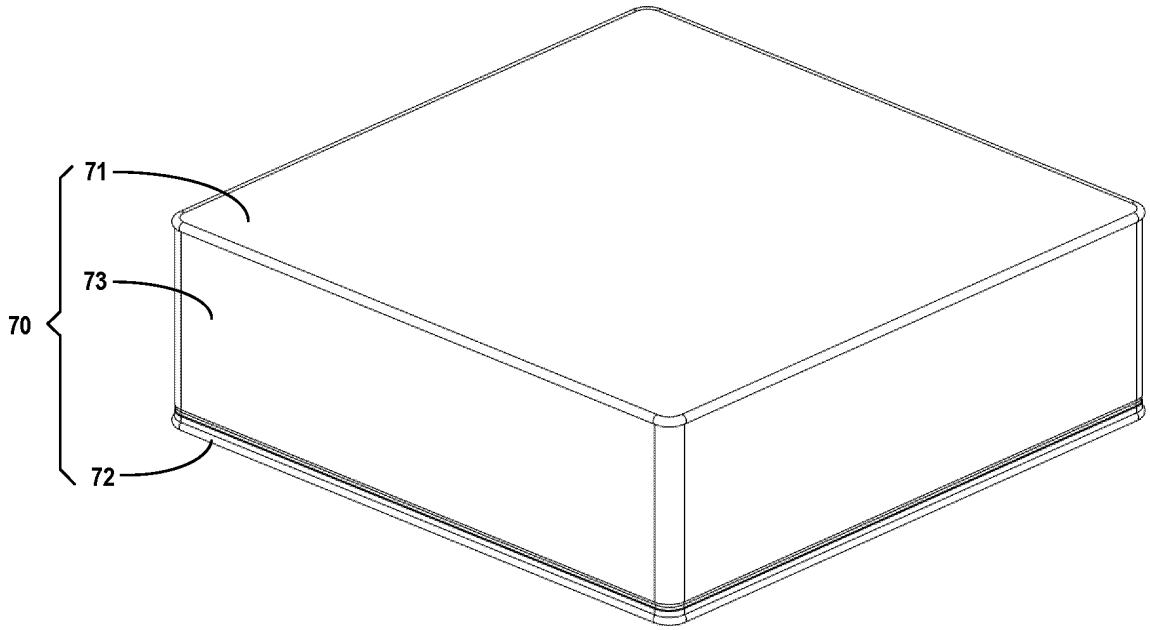

Fig.7F

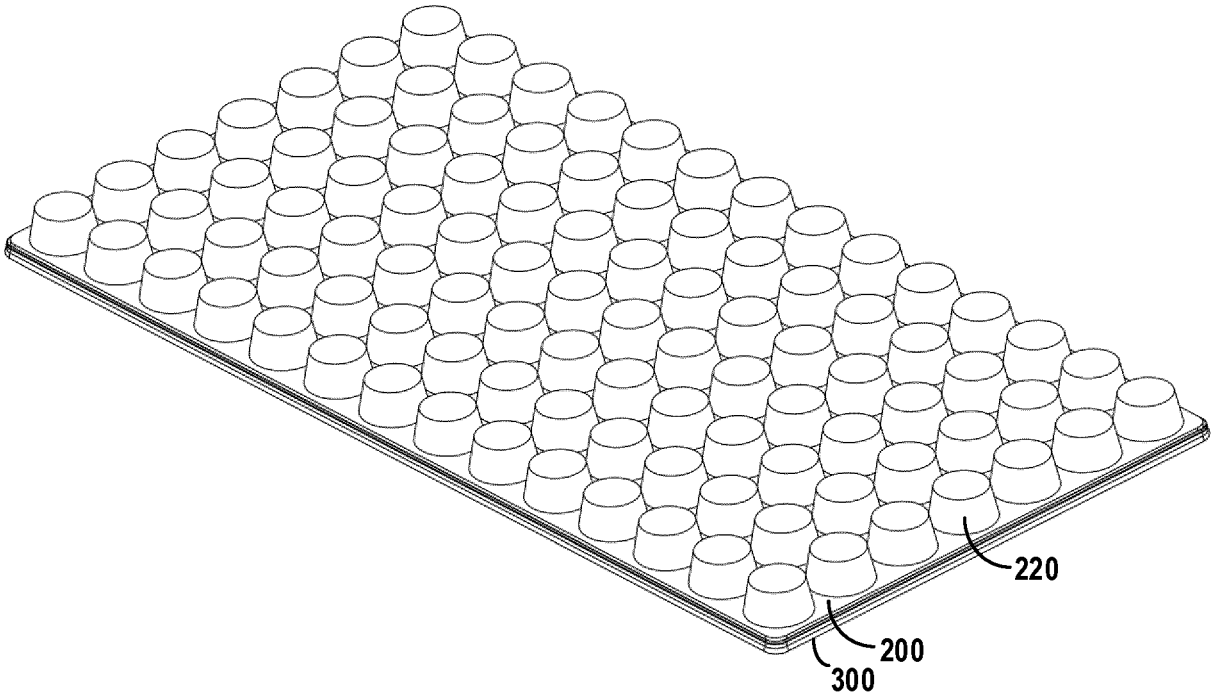

Fig.8A

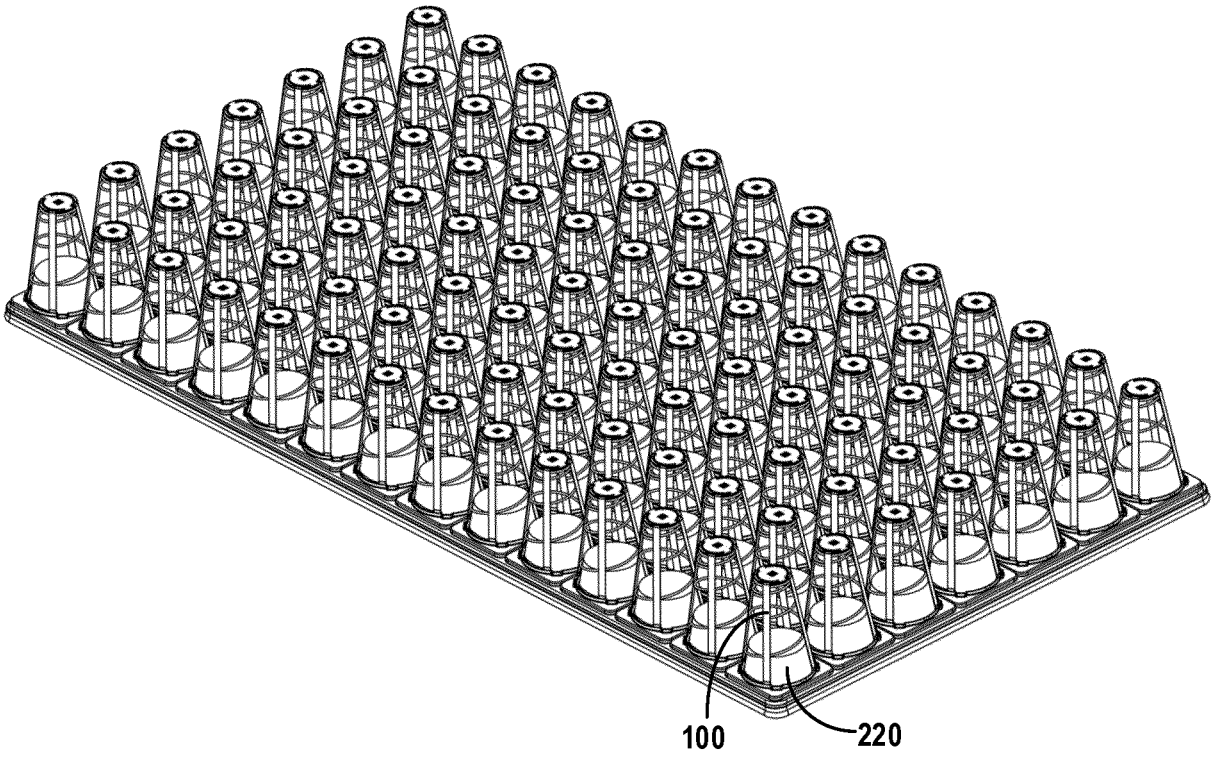

Fig.8B

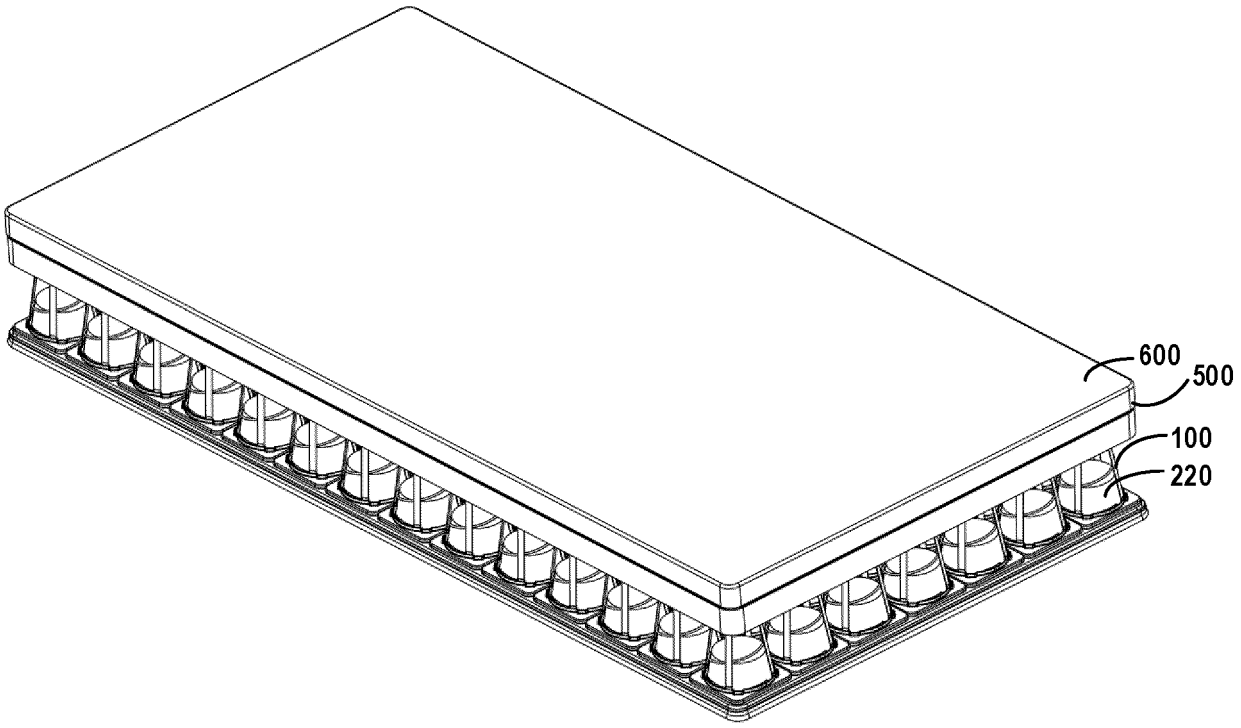

Fig.8C

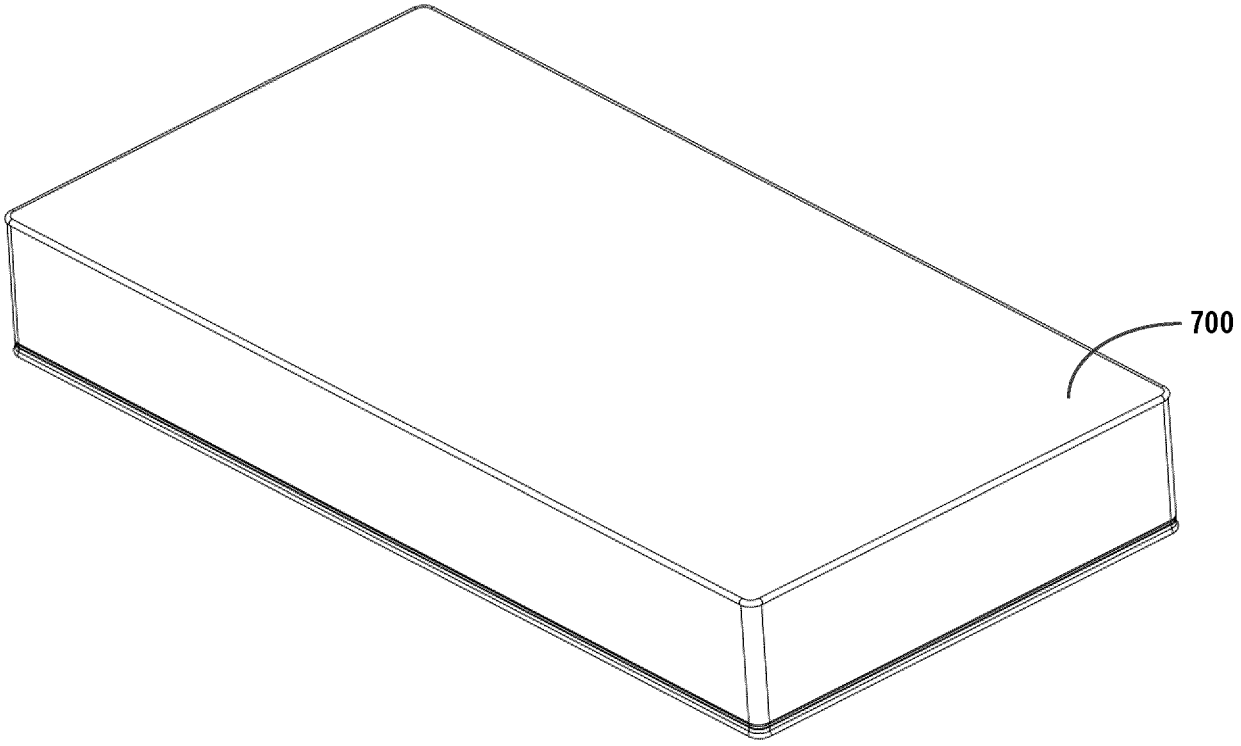

Fig.8D

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2022/132462

A. CLASSIFICATION OF SUBJECT MATTER

A47C 27/06(2006.01)i

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)

A47C

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 practicable, search terms used)

CNPAT, CNKI, WPI, EPODOC: 家具, 弹性垫, 安装层, 凸起块, 弹性模块, 平衡网, 柔性套, 圆锥形, 轮廓, 空心, 无纺布, 容纳, 超声, 焊接, 侧围挡, 弹簧, 支架, furniture, elastic cushion, installation layer, bulge, elastic module, balanced net, flexible sleeve, cone, contour, hollow, nonwoven, accommodation, ultrasound, weld, side fence, spring, support

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	CN 112674537 A (NEW TEC INTEGRATION XIAMEN CO., LTD.) 20 April 2021 (2021-04-20) description, paragraphs [0230]-[0347], and figures 1A-51C	1-17
Y	CN 109452797 A (ANHUI HUARUI FURNITURE MANUFACTURING CO., LTD.) 12 March 2019 (2019-03-12) description, paragraphs [0018]-[0023], and figures 1-4	1-17
A	CN 112674539 A (NEW TEC INTEGRATION XIAMEN CO., LTD.) 20 April 2021 (2021-04-20) entire document	1-17
A	CN 204812973 U (WENZHOU HAOMENGBAO HOME FURNISHING CO., LTD.) 02 December 2015 (2015-12-02) entire document	1-17
A	CN 208582066 U (JIAXING TAIEN SPRINGS CO., LTD.) 08 March 2019 (2019-03-08) entire document	1-17
A	CN 101959443 A (TECHNOGEL ITALIA S. R. L.) 26 January 2011 (2011-01-26) entire document	1-17

☑ Further documents are listed in the continuation of Box C. ☑ See patent family annex.

* Special categories of cited documents:
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"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
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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
17 December 2022	**22 December 2022**
Name and mailing address of the ISA/CN **China National Intellectual Property Administration (ISA/CN)** **No. 6, Xitucheng Road, Jimenqiao, Haidian District, Beijing 100088, China** Facsimile No. **(86-10)62019451**	Authorized officer Telephone No.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2022/132462

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 03041537 A1 (ABSORPTION-TECH WORLD INC.) 22 May 2003 (2003-05-22) entire document	1-17

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2022/132462

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				WO	2021073598	A1	22 April 2021
				AU	2020366477	A1	12 May 2022
				EP	4046543	A1	24 August 2022
CN	109452797	A	12 March 2019	CN	209474212	U	11 October 2019
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CN	204812973	U	02 December 2015		None		
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