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(54) **ELASTIC CUSHION AND FURNITURE**

(57) The present disclosure relates to the furniture field and provides an elastic pad and a furniture. The elastic pad comprises: a pad body including a set of elastic modules and at least one replaceable pad layer stacked in a vertical direction; and an outer covering configured to cover the pad body, wherein the outer covering includes a top covering portion, and a side enclosure covering portion connected via a detachable structure that is configured to allow to disassemble or assemble the side enclosure covering portion, the top covering portion covers a top surface of the pad body, and the side enclosure covering portion encloses and covers side surfaces of the pad body; wherein the side enclosure cov-

ering portion and the top covering portion are connected via the detachable structure. Since the side enclosure covering portion can be disassembled and assembled to allow replacement of the pad layer, it can be accomplished, without changing the set of elastic modules and the top covering portion, to conveniently obtain elastic pads differing in thickness and hardness by combining with different pad layers and side enclosure bodies having different heights, to thus meet personalized needs of different customers for the thickness and hardness of the elastic pad while improving the comfort and cleanliness during use of the elastic pad.

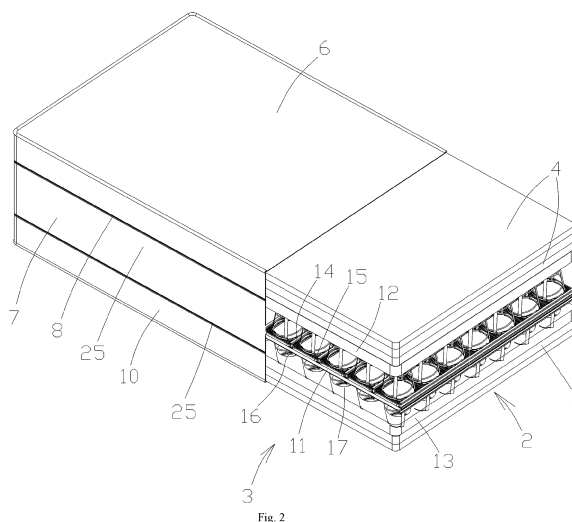


Fig. 2

Description

TECHNICAL FIELD

[0001] The present disclosure relates to the field of furniture, and particularly to an elastic pad and a furniture comprising the same.

BACKGROUND

[0002] Furniture such as beds is an indispensable object in people's life. Most of the conventional large-sized furniture is not easily disassembled or not easily restored after disassembly. However, with the development of modern life, it is required that furniture especially such as beds are able to be disassembled and assembled more and more frequently to meet the needs of population migration and field leisure. During transportation or move, it is very difficult to disassemble and assemble the beds, resulting in that the beds which are still usable are sometimes discarded to reduce the transportation burden.

[0003] A bed normally consists of a bed frame, an elastic pad, and an outer covering. A conventional elastic pad is usually one-piece, non-detachable and integral pad formed from a plurality of superimposed layers and springs. The thickness of the integral pad cannot be adjusted, such that it cannot meet the different individuals' needs for comfort. In addition, the integral pad has the disadvantage of being inconvenient for cleaning.

SUMMARY

[0004] To address at least some of the problems existing in the prior art, the objective of the present disclosure is to enable the elastic pad to meet personalized needs of different customers for the thickness, softness and hardness of the elastic pad, while improving the comfort and cleanliness during the use of the elastic pad.

[0005] In order to achieve the above objective, in the first aspect, the present disclosure provides an elastic pad comprising: a pad body comprising a set of elastic modules and at least one replaceable pad layer stacked in a vertical direction; and an outer covering configured to cover the pad body, wherein the outer covering comprises a top covering portion and a side enclosure covering portion connected via a detachable structure that is configured to allow to disassemble or assemble the side enclosure covering portion, the top covering portion covers a top surface of the pad body, and the side enclosure covering portion encloses and covers side surfaces of the pad body, and wherein the side enclosure covering portion and the top covering portion are connected via the detachable structure.

[0006] In the said technical solution, the pad layer is replaceable, and the side enclosure covering portion is connected to the top covering portion via the detachable structure configured to assemble or disassemble the side

enclosure covering portion so that it is allowed to replace the pad layer as required. In this way, a customer can detach the side enclosure covering portion out of the elastic pad and further remove the pad layer. Then, the consumer can replace a pad layer with a thickness and a hardness as desired according to his own actual need, in order to obtain the elastic pad with the desired thickness and hardness. Moreover, the height of the side enclosure covering portion can be adjusted so that the height of the side enclosure covering portion can correspond to the height of the elastic pad having the replaced pad layer. For example, a clean side enclosure covering portion with a corresponding height is placed in situ and connected to the top covering portion again via the detachable structure, so that the outer covering can cover the pad body, and the replaced side enclosure covering portion can be cleaned afterwards. Therefore, in the elastic pad according to the present disclosure, the pad layer may be varied in thickness and can be matched with the side enclosure covering portion with a corresponding height. Under this situation, unlike the elastic pad with unchangeable thickness and hardness according to the prior art, the elastic pad according to the present disclosure allows the customer to freely collocate and adjust the thickness and hardness of the elastic pad according to the customer's preference. And the elastic pad is conveniently disassembled or assembled by, e.g., detaching the side enclosure covering portion and easily replacing with different pad layers to alter the thickness and the hardness of the elastic pad. As such, the same elastic pad can be varied in thickness, hardness and elasticity. In this way, it can be accomplished that, without changing the set of elastic modules and the top covering portion, elastic pads differing in thickness and hardness is conveniently obtain by combining with different pad layers and side enclosure covering portions having different heights, and thus meet personalized needs of different customers for the thickness and hardness of the elastic pad, while improving the comfort and cleanliness during use of the elastic pad.

[0007] According to an embodiment of the present disclosure, the side enclosure covering portion comprises a plurality of side enclosure covering strips arranged in a thickness direction of the elastic pad, and the adjacent side enclosure covering strips are connected to each other via the detachable structure, wherein, after at least one side enclosure covering strip is detached off, two adjacent connecting edges connected previously to an upper and a lower connecting edges of the detached side enclosure covering strip can be connected via the detachable structure.

[0008] According to an embodiment of the present disclosure, an edge of the top covering portion extends downwards to form an upper side enclosure edge, and the side enclosure covering portion is connected to the upper side enclosure edge via the detachable structure.

[0009] According to an embodiment of the present disclosure, the elastic layer is disposed between the top

covering portion and the set of elastic modules.

[0010] According to an embodiment of the present disclosure, the pad body comprises a pad layer located at a lowermost part of the pad body.

[0011] According to an embodiment of the present disclosure, there are a plurality of sets of elastic modules stacked on one another in a vertical direction.

[0012] According to an embodiment of the present disclosure, a middle spacer is disposed between the two adjacent sets of elastic modules.

[0013] According to an embodiment of the present disclosure, the detachable structure comprises at least one of a zipper structure, a hook & loop, a snap connection, and a button connection.

[0014] According to an embodiment of the present disclosure, the set of elastic modules comprises a bottom support layer, a plurality of elastic modules and a balance pad with a plurality of positioning holes, wherein the bottom support layer is provided at its upper surface with a plurality of mounting frames spaced apart from each other, the plurality of elastic modules are connected between the mounting frames adjacent to each other, and the balance pad is laid over the plurality of the elastic modules to allow a portion of each elastic module of the plurality of elastic modules to enter into a corresponding positioning hole, so that the movement of each elastic module of the plurality of elastic modules in a transverse direction of the balance pad can be restricted.

[0015] According to an embodiment of the present disclosure, the set of elastic modules comprises a middle support layer, an upper balance pad with a plurality of positioning holes, and a lower balance pad with a plurality of positioning holes, wherein the middle support layer is provided at its upper surface with a plurality of upper mounting frames spaced apart from each other, the upper surface of the middle support layer is provided with a plurality of upper elastic modules connected between the adjacent upper mounting frames, and wherein the upper balance pad is laid over the plurality of the upper elastic modules to allow a portion of each upper elastic module of the plurality of upper elastic modules to enter into a corresponding positioning hole, so that the movement of each of the upper elastic modules in a transverse direction of the upper balance pad can be restricted; and wherein the middle support layer is provided at its lower surface with a plurality of lower mounting frames spaced apart from each other, the lower surface of the middle support layer is provided with a plurality of lower elastic modules connected between the adjacent lower mounting frames, and the lower balance pad is laid below the plurality of the lower elastic modules to allow a portion of each lower elastic module of the plurality of lower elastic modules to enter into a respective corresponding positioning hole, so that the movement of each of the lower elastic module in a transverse direction of the lower balance pad is restricted.

[0016] According to an embodiment of the present disclosure, the upper elastic module and the lower elastic

module both have a truncated conical shape, wherein a larger-size end of the upper elastic module is connected to the upper mounting frame, and a smaller-size end of the elastic module is located upwards; a larger-size end of the lower elastic module is connected to the lower mounting frame, and a smaller-size end of the lower elastic module is oriented downwards and is located in a respective one of the positioning holes of the lower balance pad.

[0017] According to an embodiment of the present disclosure, the outer covering comprises a bottom covering portion, and the pad body is placed on the bottom covering portion such that the bottom covering portion covers a bottom surface of the pad body, wherein an upper edge of the side enclosure covering portion is connected with an edge of the top covering portion via the detachable structure, and a lower edge of the side enclosure covering portion is connected with an edge of the bottom covering portion via the detachable structure.

[0018] According to an embodiment of the present disclosure, an edge of the bottom covering portion extends upwards to form a lower enclosure edge, and the side enclosure covering portion is connected with the lower enclosure edge via the detachable structure.

[0019] According to an embodiment of the present disclosure, a pad layer is disposed between the bottom covering portion and the set of elastic modules.

[0020] According to an embodiment of the present disclosure, the side enclosure covering portion and the bottom support layer of the set of elastic modules are connected via the detachable structure.

[0021] According to an embodiment of the present disclosure, the set of elastic modules comprises a middle-layer connecting edge formed in a thickness direction thereof, and the side enclosure covering portion and the middle-layer connecting edge are connected via the detachable structure.

[0022] According to an embodiment of the present disclosure, the plurality of sets of elastic modules are stacked one above another, and except for the lowermost set of elastic modules, peripheral edges of the bottom support layers of other sets of elastic modules located above are used as the middle-layer connecting edges.

[0023] According to an embodiment of the present disclosure, the side enclosure covering portion comprises a plurality of side enclosure covering strips arranged along the thickness direction of the elastic pad, wherein the adjacent side enclosure covering strips are connected via the detachable structure, the lowermost side enclosure covering strip is connected to the bottom support layer via the detachable structure, and the uppermost side enclosure covering strip is connected to the top covering portion via the detachable structure.

[0024] According to an embodiment of the present disclosure, the side enclosure covering portion and the pad layer located at a lowermost part of the pad body are connected via the detachable structure.

[0025] According to an embodiment of the present dis-

closure, the elastic pad is a mattress.

[0026] Further, the present disclosure provides a furniture, comprising the elastic pad according to any one of the embodiments as described above. The furniture is significantly improved in comfort and hygienic environment, and elevated in overall quality.

[0027] The furniture includes, but is not limited to, a bed, a sofa, a chair, a sofa bed, an upholstered bench and the like.

[0028] Obviously, elements or features as described in a single embodiment can be used, alone or in combination, in other embodiment(s).

BRIEF DESCRIPTION OF THE DRAWINGS

[0029] Dimensions and proportions in the drawings do not represent the dimensions and proportions of actual products. The drawings are only provided illustratively, and some unnecessary elements or features are omitted therefrom for clarity.

Fig. 1 is a perspective view exemplarily showing an elastic pad according to a first embodiment of the present disclosure.

Fig. 2 is a schematic view of a structure of a pad body exposed after a portion of an outer covering of the elastic pad in Fig. 1 is removed.

Fig. 3 is a schematic view of a structure of a further pad body after a portion of an outer covering of the elastic pad in Fig. 1 is removed.

Fig. 4 is an exploded view of an outer covering of the elastic pad in Fig. 1.

Fig. 5 is a perspective view exemplarily showing an elastic pad according to a second embodiment of the present disclosure.

Fig. 6 is a schematic view of a structure of a pad body exposed after a portion of an outer covering of the elastic pad in Fig. 5 is removed.

Fig. 7 is a schematic view of a structure of the elastic pad in Fig. 5 where a side enclosure covering portion and a middle-layer connecting edge are connected via a detachable structure.

Fig. 8 is an exploded view of an outer covering and a bottom support layer of a set of elastic modules in the elastic pad in Fig. 5.

Fig. 9 is a perspective view exemplarily showing an elastic pad according to a third embodiment of the present disclosure.

Fig. 10 is a schematic view of a structure of a pad

body exposed where a portion of an outer covering of the elastic pad in Fig. 9 is removed.

Fig. 11 is an exploded view of an outer covering and a bottom support layer of a set of elastic modules in the elastic pad in Fig. 9.

Fig. 12 is a schematic view exemplarily showing an elastic module of an elastic pad according to the present disclosure.

Reference signs

[0030] 1 - elastic pad, 2 - pad body, 3 - set of elastic modules, 4 - pad layer, 5 - outer covering, 6 - top covering portion, 7 - side enclosure covering portion, 8 - upper side enclosure edge, 9 - bottom covering portion, 10 - lower enclosure edge, 11 - middle support layer, 12 - upper balance pad, 13 - lower balance pad, 14 - upper mounting frame, 15 - upper elastic module, 16 - lower mounting frame, 17 - lower elastic module, 18 - bottom support layer, 19 - elastic module, 20 - balance pad, 21 - mounting frame, 22 - middle spacer, 23 - middle-layer connecting edge, 24 - side enclosure covering strip, 25 - spring bracket, 26 - conical spring .

DETAILED DESCRIPTION OF EMBODIMENTS

[0031] Reference now will be made to the drawings to describe in detail an elastic pad according to 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, on the basis of the preferred embodiments, other possible manners which also fall into the scope described herein.

[0032] Fig. 1 exemplarily shows an elastic pad 1 according to an embodiment of the present disclosure, Fig. 5 exemplarily shows an elastic pad 1 according to a further embodiment of the present disclosure, and Fig. 9 exemplarily shows an elastic pad 1 according to a still further embodiment of the present disclosure. Referring to Figs. 1, 2, 3, 5, 8, 9 and 10, the elastic pad 1 according to the present disclosure comprises a pad body 2 and an outer covering 5, wherein, the pad body 2 comprises a set of elastic modules 3 and at least one replaceable pad layer 4 stacked in a vertical direction. The outer covering 5 is configured to cover the pad body 2, where the outer covering 5 includes a top covering portion 6 and a side enclosure covering portion 7 connected via a detachable structure that is configured to allow to disassemble or assemble the side enclosure covering portion 7, the top covering portion 6 covers the top surface of the pad body 2, and the side enclosure covering portion 7 encloses and covers side surfaces of the pad body 2, and wherein, the side enclosure covering portion 7 and the top covering portion 6 are connected via the detachable structure.

[0033] In said technical solution, the pad layer 4 is replaceable, and the side enclosure covering portion 7 is

connected (such as to the top covering portion) via the detachable structure configured to allow to assemble or disassemble the side enclosure covering portion 7 so that it is allowed to replace the pad layer as required. In this way, a customer can detach the side enclosure covering portion 7 out of the elastic pad and further remove the pad layer 4. Then, the consumer can replace a pad layer 4 with a thickness and a hardness as desired according to his own actual need, in order to obtain the elastic pad 1 with the desired thickness and hardness. Moreover, the height of the side enclosure covering portion 7 can be adjusted so that the height of the side enclosure covering portion 7 can correspond to the height of the elastic pad 1 having the replaced pad layer 4. For example, a clean side enclosure covering portion 7 with a corresponding height is placed in situ and connected (such as to the top covering portion) again via the detachable structure, so that the outer covering 5 can cover the pad body 2, and the replaced side enclosure covering portion 7 can be cleaned afterwards. Alternatively, the side enclosure covering portion 7 includes a foldable part configured to be folded or unfolded. After the pad layer 4 is replaced, the height of the side enclosure covering portion 7 can be adjusted correspondingly by folding or unfolding the foldable part. Therefore, in the elastic pad 1 according to the present disclosure, the pad layer 4 may be varied in thickness and can be matched with the side enclosure covering portion 7 with a corresponding height. Under this situation, unlike the elastic pad with unchangeable in thickness and hardness according to the prior art, the elastic pad 1 according to the present disclosure allows the customer to freely collocate and adjust the thickness and hardness of the elastic pad according to the customer's preference. And the elastic pad is conveniently disassembled or assembled by, i.e., detaching the side enclosure covering portion 7 and easily replacing with different pad layers 4 to alter the thickness and the hardness of the elastic pad 1. As such, the same elastic pad 1 can be varied in thickness, hardness and elasticity. In this way, it can be accomplished that, without changing the set of elastic modules 3 and the top covering portion 6, elastic pads differing in thickness and hardness is conveniently obtain by combining with different pad layers and side enclosure covering portions having different heights, and thus meet personalized needs of different customers for the thickness and hardness of the elastic pad 1, while improving the comfort and cleanliness during use of the elastic pad 1.

[0034] In addition, the consumer may separately purchase a pad layer 4 having a different thickness and hardness. Alternatively, the elastic pad 1 *per se* may include a plurality of pad layers 4 with different thickness and hardness as accessories. Of course, when it is required to replace the side enclosure covering portion 7, the elastic pad 1 may also include a plurality of side enclosure cover bodies 7 corresponding to different pad layers 4 as accessories. The pad layer 4 may include multiple layers of sponge bodies varied in hardness and may be

wrapped by a non-woven fabric cover, where the multiple layers of sponge bodies may include a soft sponge layer, a medium-hard sponge layer and a hard sponge layer, and the non-woven fabric cover may be opened to adjust the sequence of the respective sponge layers, to thus obtain an elastic pad layer 4 with a different hardness. Alternatively, the pad layer 4 may include multiple layers of sponge bodies varied in hardness and a further material layer, the further material layer may include a down (including duck or goose down) or a latex layer and may be wrapped by a non-woven fabric cover, the multiple layers of sponge bodies may include a medium-hard sponge layer and a hard sponge layer, and the non-woven fabric cover may be opened to adjust the sequence of the respective layers to obtain an elastic pad layer with a different hardness.

[0035] In addition, in the elastic pad 1, "the side enclosure covering portion 7 can be disassembled and assembled" can be achieved in multiple forms. For example, the side enclosure covering portion 7 can be connected to the pad body 2 via a detachable structure. For instance, the side enclosure covering portion 7 may be connected to the bottom support layer of the set of elastic modules 3 of the pad body 2; or the side enclosure covering portion 7 may be connected to the pad layer 4 at the lowermost part of the pad body 2 via the detachable structure; or the side enclosure covering portion 7 may be connected via the detachable structure to other part of the outer covering 5, for example, a bottom covering portion 9 as will be described below; or the side enclosure covering portion 7 includes a plurality of side enclosure covering strips as will be described below, and the adjacent side enclosure covering strips are connected via the detachable structure, such that the detachable structure can allow one of the side enclosure covering strips, for example, the middle one, to be removed while the remaining side enclosure covering strips are connected again via the detachable structure. This will be described below in detail.

[0036] The consumer may separately purchase a side enclosure covering portion 7 having a different height. Alternatively, in an alternative embodiment, the side enclosure covering portion 7 includes a plurality of side enclosure covering strips arranged in a thickness direction of the elastic pad, and adjacent side enclosure covering strips are connected to each other via the detachable structure, where, after at least one side enclosure covering strip is detached off, two adjacent connecting edges previously connected to the upper and lower connecting edges of the detached side enclosure covering strip can be connected via the detachable structure. In this way, after replacement of the pad layer 4, the height of the pad body 2 is changed correspondingly. At this time, the number of the side enclosure covering strips can be increased or reduced, to make the side enclosure covering portion 7 more flexible in use.

[0037] In addition, the two adjacent connecting edges in "two adjacent connecting edges previously connected

to the upper and lower connecting edges of the removed side enclosure covering strip" may be a lower edge of the upper side enclosure covering strip and an upper edge of the lower side enclosure covering strip, or may be an edge of the top covering portion 6 and an upper edge of the side enclosure covering strip at the lower part, or may be a lower edge of the upper side enclosure covering strip and a connecting edge of the pad layer 4 at the lowermost part of the pad body 2, or may be a lower edge of the upper side enclosure covering strip and a connecting edge of the bottom support layer of the set of elastic modules 3 at the lowermost part of the pad body 2. For example, in an embodiment, the side enclosure covering portion 7 includes an upper side enclosure covering strip, a middle side enclosure covering strip and a lower side enclosure covering strip. After the middle side enclosure covering strip is removed, the upper side enclosure covering strip and the lower side enclosure covering strip can be connected via the detachable structure; or, after the upper side enclosure covering strip is removed, the middle side enclosure covering strip and the connecting edge of the pad layer 4 at the uppermost part of the pad body 2 can be connected via the detachable structure; or, after the lower side enclosure covering strip is removed, the middle side enclosure covering strip and the connecting edge of the pad layer 4 at the lowermost part of the pad body 2 can be connected via the detachable structure, or the middle side enclosure covering strip and the connecting edge of the bottom support layer of the set of elastic modules 3 at the lowermost part of the pad body 2 can be connected via the detachable structure.

[0038] In addition, in the elastic pad 1, the edge of the top covering portion 6 can extend straightly. In this way, at the upper corner edge of the elastic pad 1, the side enclosure covering portion 7 is connected with the edge of the top covering portion 6 by means of the detachable structure. Alternatively, referring to Figs. 1-4, the edge of the top covering portion 6 extends downwards to form an upper side enclosure edge 8, and the side enclosure covering portion 7 is connected to the upper side enclosure edge 8 via the detachable structure. As such, the upper side enclosure edge 8 covers a portion of the peripheral surface of the pad body 2, to make it easier to connect the side enclosure covering portion 7 to the upper side enclosure edge 8 via the detachable structure. Moreover, the top covering portion 6 integrally extends at the upper corner position of the elastic pad 1, thereby improving the flatness and appearance at the upper corner of the elastic pad 1.

[0039] In addition, in the elastic pad 1, the detachable structure may be of multiple types. It would be appreciated that, irrespective of the type, the detachable structure can be employed as long as it can enable the detachable connection of the side enclosure covering portion 7. Therefore, the elastic pad 1 described herein does not confine the detachable structure to one or several types. That is, the elastic pad 1 according to the present

disclosure includes, but is not limited to, the types described below. For example, a type of the detachable structure is a zipper structure where a tooth tape of the zipper structure may be arranged on the side enclosure covering portion 7 while the other tooth tape and the slider may be arranged on a mounting base, for example, the upper side enclosure edge 8 or the pad body 2 or other part of the outer covering 5. With the zipper structure, the side enclosure covering portion 7 can be easily disassembled and assembled to implement replacement of the pad layer 4 with a different thickness and hardness. For example, a further type of the detachable structure is hook & loop, also called touch fasteners or hook & loop tapes, where one tape of the hook & loop may be arranged on the side enclosure covering portion 7 while the other tape of the hook & loop may be disposed on a mounting base, for example, the upper side enclosure edge 8 or the pad body 2 or other part of the outer covering 5. By pulling and hooking the hook & loop, the side enclosure covering portion 7 can be easily disassembled and assembled to implement replacement of the pad layer 4 with a different thickness and hardness. For another example, a still further type of the detachable structure may be a snap or button connection. As such, the snap or button connection can also enable convenient assembling and disassembling of the side enclosure covering portion 7 to implement replacement of the pad layer 4 with a different thickness and hardness.

[0040] In addition, in the elastic pad, the detachable structure is required at multiple locations of the side enclosure covering portion 7. Therefore, the detachable structures at the respective locations may be the same, or may be different. Accordingly, the detachable structures include at least one of the zip structure, hook & loop, the snap connection and the button connection. In this way, the same or different detachable structures may be selected according to the connection locations of the side enclosure covering portion 7, to improve the convenience in assembling and disassembling the side enclosure covering portion 7.

[0041] In addition, in the elastic pad 1, the pad layer 4 may be stacked at any location. For example, the pad layer 4 may be stacked at the bottom of the set of elastic modules 3, or may be stacked between a plurality of sets of elastic modules 3; or referring to Figs. 2-3, 6 and 10, a pad layer 4 is provided between the top covering portion 6 and the set of elastic modules 3. In this way, a user can directly contact the pad layer 4 to further experience the different hardness, thus making the elastic pad 1 more comfortable.

[0042] In addition, in the elastic pad 1, there may be one set of elastic modules 3, or, referring to Figs. 2-3, 6 and 10, there may be a plurality of sets of elastic modules 3 stacked on one another in a vertical direction. In this way, the plurality of stacked sets of elastic modules 3 can effectively improve the elastic pad 1 in terms of thickness and comfort. For example, there may be two or three sets of elastic modules 3.

[0043] In addition, the pad body 2 includes a pad layer 4 located at the lowermost part of the pad body. The lowermost pad layer 4 can implement soft or elastic contact of the elastic pad with a frame body such as a bed frame or the floor, to further improve the comfort of the elastic pad.

[0044] In addition, a middle spacer 22 is disposed between the two adjacent sets of elastic modules 3. In this way, the middle spacers 22 between a plurality of sets of elastic modules 3 can further buffer the pressure between the adjacent sets of elastic modules 3, to further increase the comfort.

[0045] In addition, in the elastic pad, the set of elastic modules 3 may be of multiple types. For example, a type of the set of elastic modules 3 may include a set of spring modules or a set of other elastic material modules, wherein the set of other elastic material modules may be a sponge body having a different hardness, a silicone body, or a rubber body.

[0046] For example, referring to Fig. 2, in one embodiment of the set of elastic modules 3, the set of elastic modules 3 comprises a middle support layer 11, an upper balance pad 12 with a plurality of positioning holes, and a lower balance pad 13 with a plurality of positioning holes; wherein, the middle support layer 11 is provided at its upper surface with a plurality of upper mounting frames 14 spaced apart from each other, for example, upper strip-shaped mounting frames; the upper surface of the middle support surface 11 is provided with a plurality of upper elastic modules 15 connected between the adjacent upper mounting frames 14; the upper balance pad 12 is laid over the plurality of upper elastic modules 15 to allow a portion of each upper elastic module of the plurality of the upper elastic modules 15 to enter into a respective corresponding positioning hole, so that the restrict movement of each upper elastic module 15 in a transverse direction of the upper balance pad 12 can be restricted. The middle support layer 11 is provided at its lower surface with a plurality of lower mounting frames 16 spaced apart from each other, for example, lower strip-shaped mounting frames; the lower surface of the middle support layer 11 at the lower surface is provided with a plurality of lower elastic modules 17 connected between the adjacent lower mounting frames 16; the lower balance pad 13 is laid below the plurality of lower elastic modules 17 to allow a portion of each lower elastic module of the plurality of lower elastic modules 17 to enter into a respective corresponding positioning hole, so that the movement of each lower elastic module 17 in a transverse direction of the lower balance pad 13 is restricted. In this way, with an set of elastic modules 3 of this type, double-layer elasticity can be attained, which can further improve the comfort of the elastic pad.

[0047] In an alternative embodiment, the middle support layer 11 and the side enclosure covering portion 7 can be connected via a detachable structure. For example, when the detachable structure is a zipper structure, a part of the zipper structure is disposed on the peripheral

edge of the middle support layer 11 while the other part of the zipper structure is disposed on the side enclosure covering portion 7.

[0048] In addition, the upper strip-shaped mounting frame and the lower strip-shaped mounting frame can be connected respectively to the upper surface and the lower surface of the middle support layer, for example, by bonding, ultrasonically welding or the like. In an alternative embodiment, in order to improve the integrity of the connection between the upper strip-shaped mounting frame and the corresponding lower strip-shaped mounting frame, the upper strip-shaped mounting frame and the lower strip-shaped mounting frame arranged opposite to each other, and the middle support layer are connected through connectors (not shown) passing through the upper strip-shaped mounting frame, the lower strip-shaped mounting frame and the middle support layer. In this way, the same connectors connect the upper strip-shaped mounting frame, the lower strip-shaped mounting frame and the middle support layer as a whole, thereby further improving the reliability and the integrity of the support for the upper and the lower elastic modules. In addition, the connector may be a connection screw. For example, after being screwed into the upper strip-shaped mounting frame and passing through the middle support layer, the connection screw is further screwed into the lower strip-shaped mounting frame. Alternatively, the connector may include an insertion post and an insertion hole, a connection hole is formed on the middle support layer, the insertion post may be formed on one of the upper and the lower strip-shaped mounting frames while the insertion hole may be formed on the other one of the upper and the lower strip-shaped mounting frames, and the insertion post can pass through the connection hole of the middle support layer and be inserted into the insertion hole such that the upper strip-shaped mounting frame, the lower strip-shaped mounting frame and the middle support layer are connected as a whole. If required, the insertion post can be hot melted. Therefore, after passing through the connection hole, the insertion post is hot melted and then inserted into the insertion hole, thereby improving the mating reliability of the insertion post and the insertion hole.

[0049] The middle support layer 11 may be canvas, or may be a quilted fabric layer.

[0050] The upper mounting frame 14 at two sides may be formed respectively with an engagement slot. An end of the upper elastic module 15 at two sides may be provided respectively with an engagement block. The engagement block can slide and engage in the corresponding engagement slot to cause the upper elastic module 15 to be clamped between the adjacent upper mounting frames 14. Likewise, the lower mounting frame 16 at two sides may be formed respectively with an engagement slot. An end of the lower elastic module 17 at two sides may be formed respectively with an engagement block. The engagement block can slide and engage in the corresponding engagement slot to cause the lower elastic

module 17 to be clamped between the adjacent lower mounting frames 17. The upper mount frame 14 and the lower mounting frame 16 may be strip-shaped frames, and the engagement slots are strip-shaped slots correspondingly.

[0051] In addition, referring to Fig. 2, a pad layer 4 is disposed between the lower balance pad 13 and the bottom covering portion 9. In this way, a soft or elastic contact between a plurality of lower elastic modules 17 and a frame body, such as a bed frame or the floor, can be achieved, thereby further improving the comfort of the elastic pad.

[0052] In addition, the upper elastic module 15 and the lower elastic module 17 may be equal-diameter posts, for example, cylinders or blocks. Alternatively, referring to Fig. 2, the lower elastic module 15 and the lower elastic module 17 both have a truncated conical shape, where a larger-size end of the upper elastic module 15 is connected to the upper mounting frame 14, and a smaller-size end of the upper elastic module 15 is located upwards; a larger-size end of the lower elastic module 17 is connected to the lower mounting frame 16, and a smaller-size end of the lower elastic module is oriented downwards and is located in the respective positioning hole of the lower balance pad 13. In this way, the elastic module having a truncated conical shape can provide a more stable elastic performance, and the lower balance pad 13 can confine the smaller-size ends of the plurality of lower elastic modules 17 together and restrict the transverse movement of the lower elastic modules 17, thus improving the stability.

[0053] In addition, the upper elastic module 15 and the lower elastic module 17 may be of multiple types. For example, the upper elastic module 15 and the lower elastic module 17 may be post-like elastic blocks, such as rubber blocks. Alternatively, referring to Fig. 12, the upper elastic module 15 and the lower elastic module 17 may respectively include a spring bracket 25 and a conical spring 26 disposed within the spring bracket 25. The spring bracket 25 includes a base, a top cover and flexible strips connected between the base and the top cover. The large-diameter end of the conical spring 26 is connected to the base while the small-diameter end thereof is connected to the top cover, the conical spring 26 at the outer peripheral profile is in contact with the flexible strips, and the conical spring 26 is in a pre-compressed state within the spring bracket 25. The middle support layer 11 can be rolled up with the upper mounting frame 14 and the lower mounting frame 16 for storage. In this way, the engagement block on the base can slidably engage in the corresponding engagement slots of the upper mounting frame 14 and the lower mounting frame 16 such that the upper elastic module 15 and the lower elastic module 17 can be detachably mounted onto the upper mounting frame 14 and the lower mounting frame 16 of the rollable middle support layer 11, respectively. When disassembling is performed, the upper balance pad 12 and the lower balance pad 13 are removed, the upper

elastic modules 15 and the lower elastic modules 17 are then removed and sequentially nested and stacked, and the middle support layer 11 can be rolled with the upper mounting frame 14 and the lower mounting frame 16 for storage. Therefore, the set of elastic modules 3 can be easily disassembled, and the disassembled upper elastic modules 15 and lower elastic modules 17 can be compressed or stacked and nested together, which can greatly reduce the space for storage and transport and save efforts in cleaning.

[0054] For example, referring to Fig. 3, in a further embodiment of the set of elastic modules 3, the set of elastic modules 3 includes a bottom support layer 18, a plurality of elastic modules 19, and a balance pad 20 with positioning holes; wherein, a plurality of mounting frames 21 space apart from each other is disposed on the upper side surface of the bottom support layer 18, the plurality of elastic modules 19 are connected between the mounting frames 21 adjacent to each other, and the balance pad 20 is laid over the plurality of elastic modules 19 to allow a portion of each elastic module 19 to enter into a respective corresponding positioning hole, so that the movement of each elastic module 19 in a transverse direction of the balance pad 20 can be restricted. Wherein, a plurality of sets of elastic modules 3 are stacked one above another, and a middle spacer 22 is disposed between adjacent sets of elastic modules 3. As such, the balance pad 20 cannot only restrict movement of the elastic modules in the transverse direction, but can also facilitate rapid recovery of the elastic pad and enable the elastic pad to have a good support performance, thereby improving the stability, recoverability and the support property of the elastic pad when a pressure is applied thereto. Therefore, the elastic pad can provide a higher comfort, a good support performance and a more hygienic environment. In addition, the middle spacers 22 between the plurality of sets of elastic modules 3 can further buffer the pressure between adjacent sets of elastic modules 3, thereby further improving the comfort. Moreover, the elastic module 19 may have the same structure as that of the upper elastic module 15 and the lower elastic module 17 as described above. The description thereof is omitted here for brevity. For example, an engagement block on the base of the elastic module 19 can slidably engage in the corresponding engagement slot on the mounting frame 21, to cause the elastic module 19 to be detachably mounted on the mounting frame 21 of the rollable bottom support layer 18; the elastic modules 19 can be removed and then compressed or stacked and nested together; and the bottom support layer 18 can be rolled with the mounting frame 21 for storage. The bottom support layer 18 may be canvas, or may be a quilted fabric layer.

[0055] Figs. 1-4 show the first embodiment of the elastic pad 1. In addition to the features included in the elastic pad 1 as described above, referring to Fig. 4, the outer covering 5 of the elastic pad 1 includes a bottom covering portion 9, the pad body 2 is placed on the bottom covering

portion 9 such that the bottom covering portion 9 covers the bottom of the pad body 2, the upper edge of the side enclosure covering portion 7 is connected to the edge of the top covering portion 6 via a detachable structure, and the lower edge of the side enclosure covering portion 7 is connected with the edge of the bottom covering portion 9 via a detachable structure. In this way, the outer covering 5 can fully wrap the pad body 2, which can improve the integrity of the elastic pad 1. Meanwhile, the bottom covering portion 9 may also form a protection for the lower surface of the pad body 2 to protect the pad body 2 from wearing or being stained. Thus, when the bottom covering portion 9 needs to be replaced as being worn or unable to be cleaned, only the bottom covering portion 9 is replaced. In addition, this can beautify the whole appearance of the elastic pad 1.

[0056] In addition, in the elastic pad 1, the edge of the bottom covering portion 9 can extend straightly. In this way, at the lower corner edge of the elastic pad 1, the side enclosure covering portion 7 is connected to the edge of the bottom body 9 via a detachable structure. Alternatively, referring to Figs. 1-4, the edge of the bottom covering portion 9 extends upwards to form a lower enclosure edge 10, and the side enclosure covering portion 7 is connected with the lower enclosure edge 10 via a detachable structure. As such, the lower enclosure edge 10 covers a portion of the peripheral side surface of the pad body 2 to make it easier to connect the side enclosure covering portion 7 to the lower enclosure edge 10 via the detachable structure, and the bottom covering portion 9 extends integrally at the lower corner of the elastic pad 1 to thus improve the flatness and appearance at the lower corner of the elastic pad 1.

[0057] In addition, in the elastic pad, referring to Fig. 3, there may be no pad layer 4 between the set of elastic modules 3 and the bottom covering portion 9. Alternatively, as required, a consumer can provide a pad layer 4 between the bottom covering portion 9 and the set of elastic modules 3, referring to Fig. 2. In this way, a soft or elastic contact between the elastic pad and a frame body, such as a bed frame or the floor, thereby further improving the comfort of the elastic pad.

[0058] Figs. 5-8 show a second embodiment of the elastic pad 1. Referring to Figs. 5-8, the set of elastic modules 3 includes a bottom support layer 18, and the side enclosure covering portion 7 and the bottom support layer 18 can be connected via a detachable structure. In this embodiment of the elastic pad 1, the bottom support layer 18 of the set of elastic modules 3 can be fully used to connect the side enclosure covering portion 7. For example, when there is a set of elastic modules 3, the side enclosure covering portion 7 can be connected to the lower corner edge of the set of elastic modules 3, or when there are a plurality of sets of elastic modules 3 stacked one above another, the side enclosure covering portion 7 can be connected to the lower corner edge of the lowermost set of elastic modules 3 via a detachable structure. At this time, since the side enclosure covering por-

tion 7 is connected to the bottom support layer 18, the side enclosure covering portion 7 can from a constraint for the bottom support layer 18 at the peripheral edge of the bottom support layer 18, thus improving the integrity of the bottom support layer 18.

[0059] Referring to Figs. 6 and 7, the set of elastic modules 3 includes a middle-layer connecting edge 23 formed in the thickness direction thereof, and the side enclosure covering portion 7 and the middle-layer connecting edge 23 are connected via a detachable structure. In this way, with the connection between the side enclosure covering portion 7 and the middle-layer connecting edge 23, the integrity and smoothness of the set of elastic modules 3 can be further improved.

[0060] For example, when there is a set of elastic modules 3 that has a great height, the middle-layer connecting edge 23 may be a ring of canvas flange formed at the upper middle position of the set of elastic modules 3. As such, the side enclosure covering portion 7 and the ring of canvas flange can be connected via a detachable structure.

[0061] For another example, referring to Figs. 6, 7 and 8, a plurality of sets of elastic modules 3 are stacked one above another. Except the lowermost set of elastic modules 3, peripheral edges of the bottom support layers 18 of other upper sets of elastic modules 3 act as middle-layer connecting edges 23. At this time, the side enclosure covering portion 7 is connected with the respective set of elastic modules 3, to further improve the integrity and the stability of the respective set of elastic modules 3. Moreover, the side enclosure covering portion 7 connects the plurality of sets of elastic modules 3 together, thereby further improving the stability of the elastic pad. For example, in Fig. 8, there are two sets of elastic modules 3, and the peripheral edge of the bottom support layer 18 of the upper set of elastic modules 3 may act as a middle-layer connecting edge. At this time, when the bottom of the side enclosure covering portion 7 and the bottom support layer 18 of the lower set of elastic modules 3 are connected via a detachable structure, for example, a zipper structure, the side enclosure covering portion 7 at other position, for example, an approximately middle position, is connected with the peripheral edge of the bottom support layer 18 of the upper set of elastic modules via a detachable structure, for example, a zipper structure. This can further improve the integrity and flatness of the upper set of elastic modules 3 while enhancing the stability of the integral elastic pad including two sets of elastic modules 3.

[0062] In addition, in the elastic pad 1 as shown in Figs. 5-8, the set of elastic modules 3 may be of multiple types. For example, the set of elastic modules 3 may include a set of spring modules or a set of other elastic material modules, where the set of other elastic material modules may be a sponge body having a different hardness, a silicone body, or a rubber body.

[0063] In addition, for example, referring to Fig. 6, the set of elastic modules 3 shown in Fig. 6 and that shown

in Fig. 3 have the same structure. Therefore, description about the set of elastic modules 3 in Fig. 6 will be made with reference to Fig. 3. Referring to Figs. 3 and 6, each set of elastic modules 3 includes a plurality of elastic modules 19, and a balance pad 20 with positioning holes. Wherein, the upper side surface of the bottom support layer 18 of each elastic module 19 is provided with a plurality of mounting frames 21 spaced apart to each other, the plurality of elastic modules 19 are connected between the mounting frames 21 adjacent to each other, and the balance pad 20 is laid over the plurality of elastic modules 19 to allow a portion of each elastic module 19 to enter into a respective corresponding positioning hole, to restrict movement of each elastic module 19 in a transverse direction of the balance pad 20. Wherein, a middle spacer 22 is disposed respectively between adjacent sets of elastic modules 3. Therefore, the elastic pad 20 cannot only restrict movement of the elastic modules in the transverse direction, but can also facilitate rapid recovery of the elastic pad and enable the elastic pad to have a good support performance, thereby improving the stability, recoverability and the support property of the elastic pad when a pressure is applied thereto. Therefore, the elastic pad can provide a higher comfort, a good support performance and a more hygienic environment. In addition, the middle spacers 22 between the plurality of sets of elastic modules 3 can further buffer the pressure between adjacent sets of elastic modules 3, thereby further improving the comfort. Moreover, the elastic module 19 may have the same structure as that of the upper elastic module 15 and the lower elastic module 17 as described above. The description thereof is omitted here for brevity. For example, an engagement block on the base of the elastic module 19 can slidably engage into the corresponding engagement slot on the mounting frame 21, to cause the elastic module 19 to be detachably mounted on the mounting frame 21 of the rollable bottom support layer 18; the elastic modules 19 can be removed and then compressed or stacked and nested together; and the bottom support layer 18 can be rolled with the mounting frame 21 for storage.

[0064] Referring to Fig. 8, since the side enclosure covering portion 7 has a great thickness, a decorative ring may be provided approximately at the middle position of the outer periphery of the side enclosure covering portion 7, to beautify the appearance of the side enclosure covering portion 7.

[0065] Figs. 9-11 show a third embodiment of the elastic pad 1. Referring to Figs. 9-11, the side enclosure covering portion 7 includes a plurality of side enclosure covering strips 24 arranged in the thickness of the elastic pad, for example, two side enclosure covering strips 24 as shown in Fig. 11, or other numbers (e.g. 3 or 4) of side enclosure covering strips 24. Wherein, the adjacent side enclosure covering strips 24 are connected via a detachable structure, the lowermost side enclosure covering strip 24 and the bottom support layer 18 are connected via a detachable structure, and the uppermost side en-

closure covering strip 24 and the top covering portion 6 are connected via a detachable structure. Since the side enclosure covering portion 7 is partitioned into a plurality of side enclosure covering strips 24, the height of the elastic body 2 is changed correspondingly when the pad layer 4 is replaced. In this way, the number of the side enclosure covering strips 24 may be increased or reduced, thereby making the side enclosure covering portion 7 more flexible in use.

[0066] In addition, in the elastic pad 1 as shown in Figs. 9-11, the set of elastic modules 3 may be of multiple types. For example, the set of elastic modules 3 may include a set of spring modules or a set of other elastic material modules, wherein the set of other elastic material modules may be a sponge body having a different hardness, a silicone body, or a rubber body.

[0067] For example, referring to Fig. 9, the set of elastic modules 3 shown in Fig. 9 and that shown in Fig. 3 have the same structure. Therefore, description about the set of elastic modules 3 in Fig. 9 will be made in conjunction with Fig. 3. Referring to Figs. 3 and 9, there is a plurality of sets of elastic modules 3 that are stacked one above another, and each set of elastic modules 3 includes a plurality of elastic modules 19, and a balance pad 20 having positioning holes. Wherein, the upper side surface of the bottom support layer 18 of each elastic module 19 is provided with a plurality of mounting frames 21 spaced apart from each other, the plurality of elastic modules 19 are connected between the mounting frames 21 adjacent to each other, and the balance pad 20 is laid over the plurality of elastic modules 19 to allow a portion of each elastic module 19 to enter into a respective corresponding positioning hole, to restrict movement of each elastic module 19 in a transverse direction of the balance pad 20. Wherein, a middle spacer 22 is disposed respectively between adjacent sets of elastic modules 3. Therefore, the elastic pad 20 cannot only restrict movement of the elastic modules in the transverse direction, but can also facilitate rapid recovery of the elastic pad and enable the elastic pad to have a good support performance, thereby improving the stability, recoverability and the support property of the elastic pad when a pressure is applied thereto. Accordingly, the elastic pad can provide a higher comfort, a good support performance and a more hygienic environment. In addition, the middle spacers 22 between the plurality of sets of elastic modules 3 can further buffer the pressure between adjacent sets of elastic modules 3, to thus further improve the comfort. Moreover, the elastic module 19 may have the same structure as that of the upper elastic module 15 and the lower elastic module 17 as described above. The description thereof is omitted here for brevity. For example, an engagement block on the base of the elastic module 19 can slidably engage into the corresponding engagement slot on the mounting frame 21, to cause the elastic module 19 to be detachably mounted on the mounting frame 21 of the rollable bottom support layer 18; the elastic modules 19 can be removed and then compressed or stacked and

nested together; and the bottom support layer 18 can be rolled with the mounting frame 21 for storage.

[0068] In addition, in an embodiment of the elastic pad, the side enclosure covering portion 7 and the lowermost pad layer 4 of the pad body 2 are connected via a detachable structure. At this time, the lowermost pad layer 4 may have a connecting edge, and the lower edge of the side enclosure covering portion 7, for example, the lower edge of the lowermost side enclosure covering strip 24, may be connected with the connecting edge.

[0069] In addition, the elastic pad according to the present disclosure may be used as a mattress, a sofa cushion, or a chair cushion.

[0070] Furthermore, the present disclosure provides a furniture, including the elastic pad 1 according to any one of the embodiments as described above. The furniture is significantly improved in comfort and hygienic environment, and elevated in overall quality.

[0071] The furniture includes, but is not limited to, a bed, a sofa, a chair, a sofa bed, an upholstered bench and the like.

[0072] The scope of protection of the present disclosure is defined only by the appended claims. Given the teaching of the present disclosure, those skilled in the art could easily envision using alternative structures of those disclosed herein as feasible alternative embodiments, and combining the embodiments disclosed herein to form new embodiments, which should all fall into the scope defined by the appended claims.

Claims

1. An elastic pad (1) comprising:

a pad body (2) comprising a set of elastic modules (3) and at least one replaceable pad layer (4) stacked in a vertical direction; and an outer covering (5) configured to cover the pad body (2), wherein the outer covering (5) comprises a top covering portion (6), and a side enclosure covering portion (7) connected via a detachable structure that is configured to allow to disassemble or assemble the side enclosure covering portion (7), the top covering portion (6) covers a top surface of the pad body (2), and the side enclosure covering portion (7) encloses and covers side surfaces of the pad body (2); and

wherein the side enclosure covering portion (7) and the top covering portion (6) are connected via the detachable structure.

2. The elastic pad according to claim 1, wherein the side enclosure covering portion (7) comprises a plurality of side enclosure covering strips arranged in a thickness direction of the elastic pad, and the adjacent side enclosure covering strips are connected to

each other via the detachable structure, wherein, after at least one side enclosure covering strip is detached off, two adjacent connecting edges connected previously to an upper and a lower connecting edges of the detached side enclosure covering strip can be connected via the detachable structure.

3. The elastic pad according to claim 1, wherein an edge of the top covering portion (6) extends downwards to form an upper side enclosure edge (8), and the side enclosure covering portion (7) is connected to the upper side enclosure edge (8) via the detachable structure.

4. The elastic pad according to claim 1, wherein the elastic layer (4) is disposed between the top covering portion (6) and the set of elastic modules (3).

5. The elastic pad according to claim 1, wherein the pad body (2) comprises a pad layer (4) located at a lowermost part of the pad body.

6. The elastic pad according to claim 1, wherein there are a plurality of sets of elastic modules (3) stacked on one another in a vertical direction.

7. The elastic pad according to claim 6, wherein a middle spacer (22) is disposed between the two adjacent sets of elastic modules (3).

8. The elastic pad according to claim 1, wherein the detachable structure comprises at least one of a zipper structure, a hook & loop, a snap connection, and a button connection.

9. The elastic pad according to claim 1, wherein the set of elastic modules (3) comprises a bottom support layer (18), a plurality of elastic modules (19), and a balance pad (20) with a plurality of positioning holes, wherein the bottom support layer (18) is provided at its upper surface with a plurality of mounting frames (21) spaced apart from each other, the plurality of elastic modules (19) are connected between the mounting frames (21) adjacent to each other, and the balance pad (20) is laid over the plurality of the elastic modules (19) to allow a portion of each elastic module of the plurality of elastic modules (19) to enter into a respective corresponding positioning hole, so that the movement of each elastic module of the plurality of elastic modules (19) in a transverse direction of the balance pad (20) can be restricted.

10. The elastic pad according to claim 1, wherein the set of elastic modules (3) comprises a middle support layer (11), an upper balance pad (12) with a plurality of positioning holes, and a lower balance pad (13) with a plurality of positioning holes, wherein:

- the middle support layer (11) is provided at its upper surface with a plurality of upper mounting frames (14) spaced apart from each other, the upper surface of the middle support layer (11) is provided with a plurality of upper elastic modules (15) connected between the adjacent upper mounting frames (14), and wherein the upper balance pad (12) is laid over the plurality of the upper elastic modules (15) to allow a portion of each upper elastic module of the plurality of upper elastic modules (15) to enter into a respective corresponding positioning hole, so that the movement of each upper elastic module of the plurality of upper elastic modules (15) in a transverse direction of the upper balance pad (12) can be restricted; and wherein the middle support layer (11) is provided at its lower surface with a plurality of lower mounting frames (16) spaced apart from each other, the lower surface of the middle support layer (11) is provided with a plurality of lower elastic modules (17) connected between the adjacent lower mounting frames (16), and the lower balance pad (13) is laid below the plurality of the lower elastic modules (17) to allow a portion of each lower elastic module of the plurality of lower elastic modules (17) to enter into a respective corresponding positioning hole, so that the movement of each lower elastic module of the plurality of lower elastic module (17) in a transverse direction of the lower balance pad (13) is restricted.
11. The elastic pad according to claim 10, wherein the upper elastic module (15) and the lower elastic module (17) both have a truncated conical shape, wherein a larger-size end of the upper elastic module (15) is connected to the upper mounting frame (14), and a smaller-size end of the elastic module (15) is located upwards; a larger-size end of the lower elastic module (17) is connected to the lower mounting frame (16), and a smaller-size end of the lower elastic module (17) is oriented downwards and is located in a respective one of the positioning holes of the lower balance pad (13).
 12. The elastic pad according to any one of claims 1-11, wherein the outer covering (5) comprises a bottom covering portion (9), the pad body (2) is placed on the bottom covering portion (9) such that the bottom covering portion (9) covers a bottom surface of the pad body (2), wherein an upper edge of the side enclosure covering portion (7) is connected with an edge of the top covering portion (6) via the detachable structure, and a lower edge of the side enclosure covering portion (7) is connected with an edge of the bottom covering portion (9) via the detachable structure.
 13. The elastic pad according to claim 12, wherein an edge of the bottom covering portion (9) extends upwards to form a lower enclosure edge (10), and the side enclosure covering portion (7) is connected with the lower enclosure edge (10) via the detachable structure.
 14. The elastic pad according to claim 12, wherein a pad layer (4) is disposed between the bottom covering portion (9) and the set of elastic modules (3).
 15. The elastic pad according to any one of claims 1-11, wherein the side enclosure covering portion (7) and a bottom support layer (18) of the set of elastic modules (3) are connected via the detachable structure.
 16. The elastic pad according to claim 15, wherein the set of elastic modules (3) comprises a middle-layer connecting edge (23) formed in a thickness direction thereof, and the side enclosure covering portion (7) and the middle-layer connecting edge (23) are connected via the detachable structure.
 17. The elastic pad according to claim 16, wherein the plurality of the set of elastic modules (3) are stacked one above another, and except for the lowermost set of elastic modules (3), peripheral edges of the bottom support layers (18) of other sets of elastic modules (3) located above are used as the middle-layer connecting edges (23).
 18. The elastic pad according to any one of claims 1-11, wherein the side enclosure covering portion (7) comprises a plurality of side enclosure covering strips (24) arranged along the thickness direction of the elastic pad, wherein the adjacent side enclosure covering strips (24) are connected via the detachable structure, the lowermost side enclosure covering strip (24) is connected to the bottom support layer (18) via the detachable structure, and the uppermost side enclosure covering strip (24) is connected to the top covering portion (6) via the detachable structure.
 19. The elastic pad according to any one of claims 1-11, wherein the side enclosure covering portion (7) and the pad layer (4) located at a lowermost part of the pad body (2) are connected via the detachable structure.
 20. The elastic pad according to claim 1, wherein the elastic pad is a mattress.
 21. A furniture, comprising the elastic pad (1) according to any one of claims 1-20.

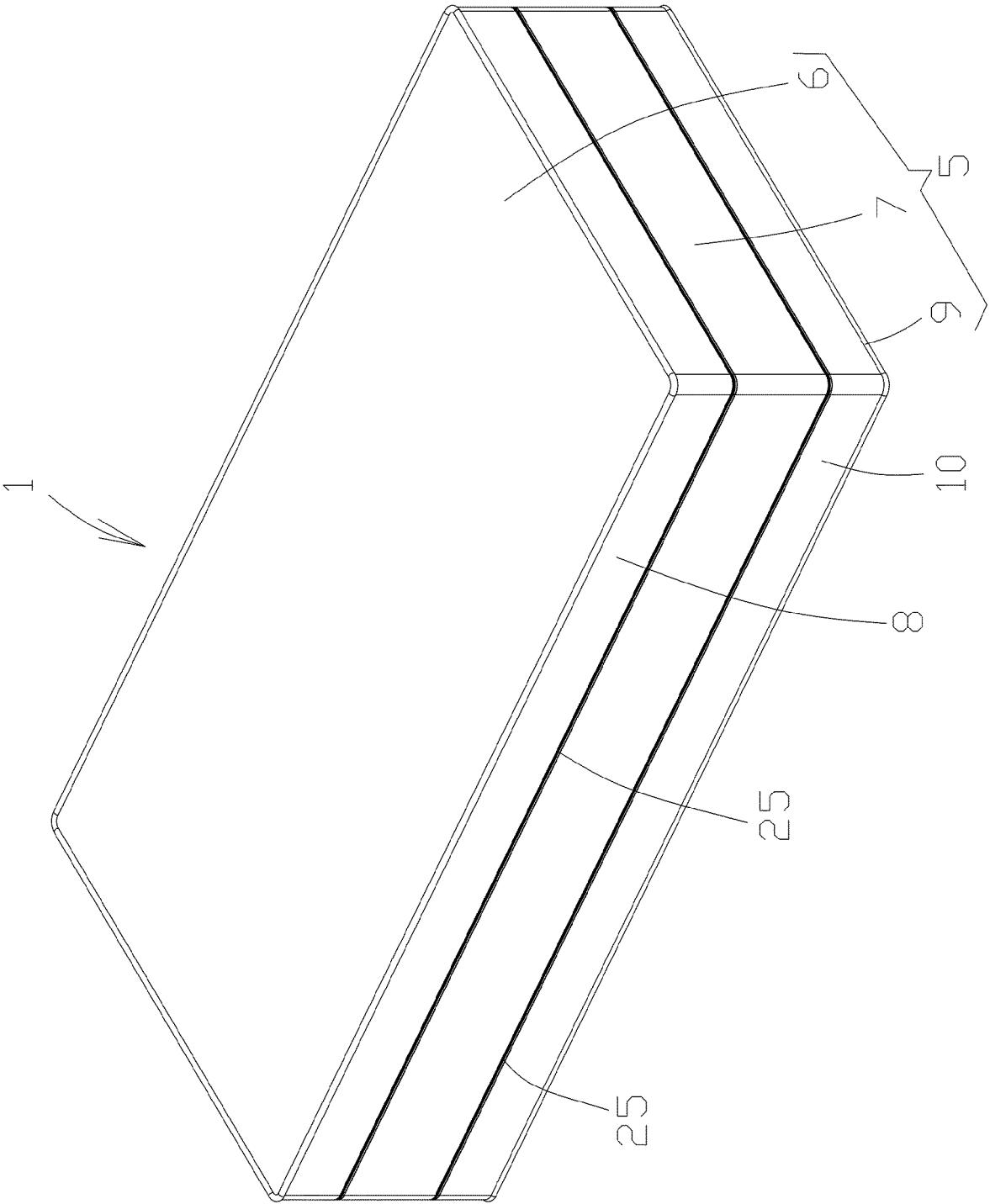


Fig. 1

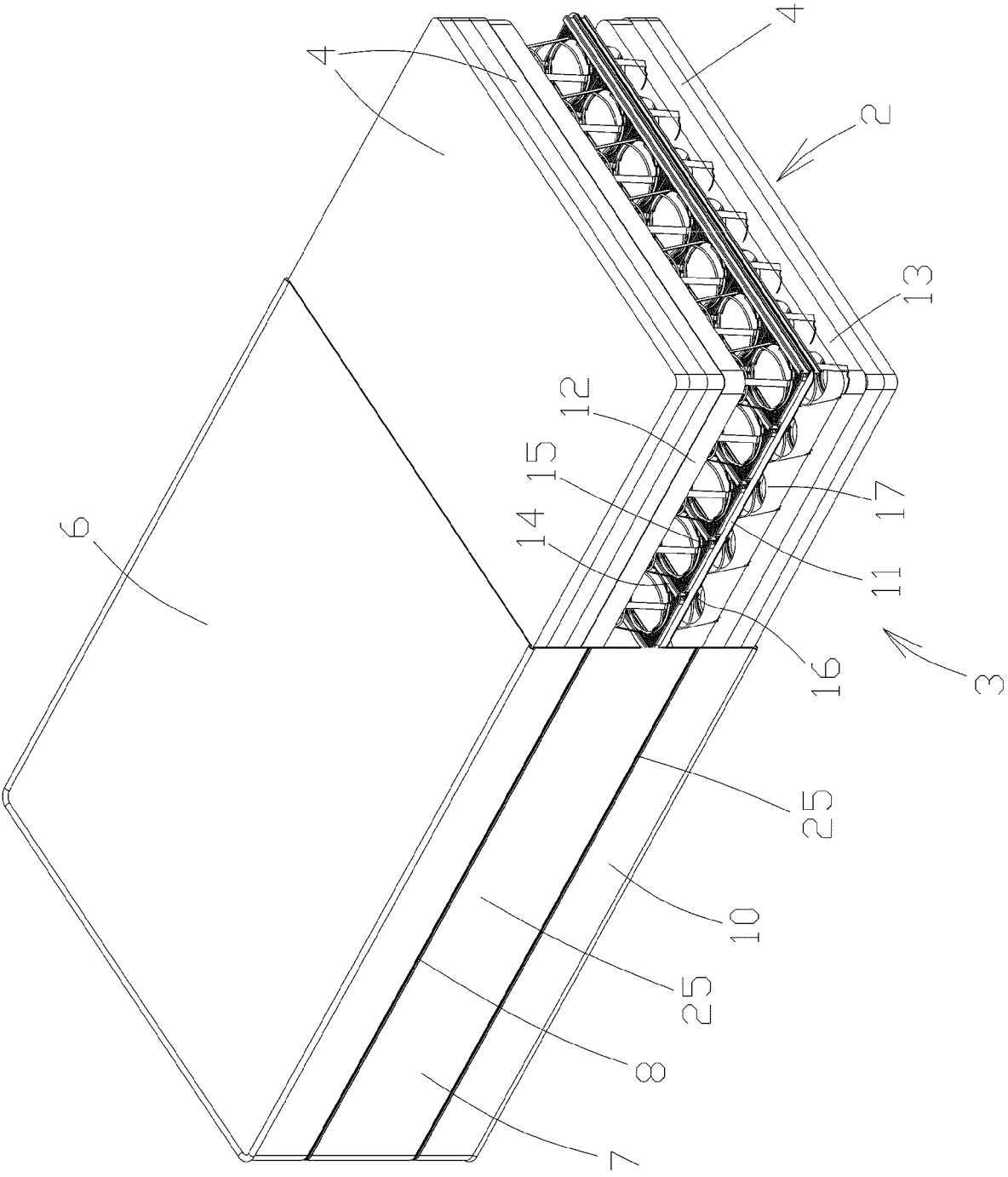


Fig. 2

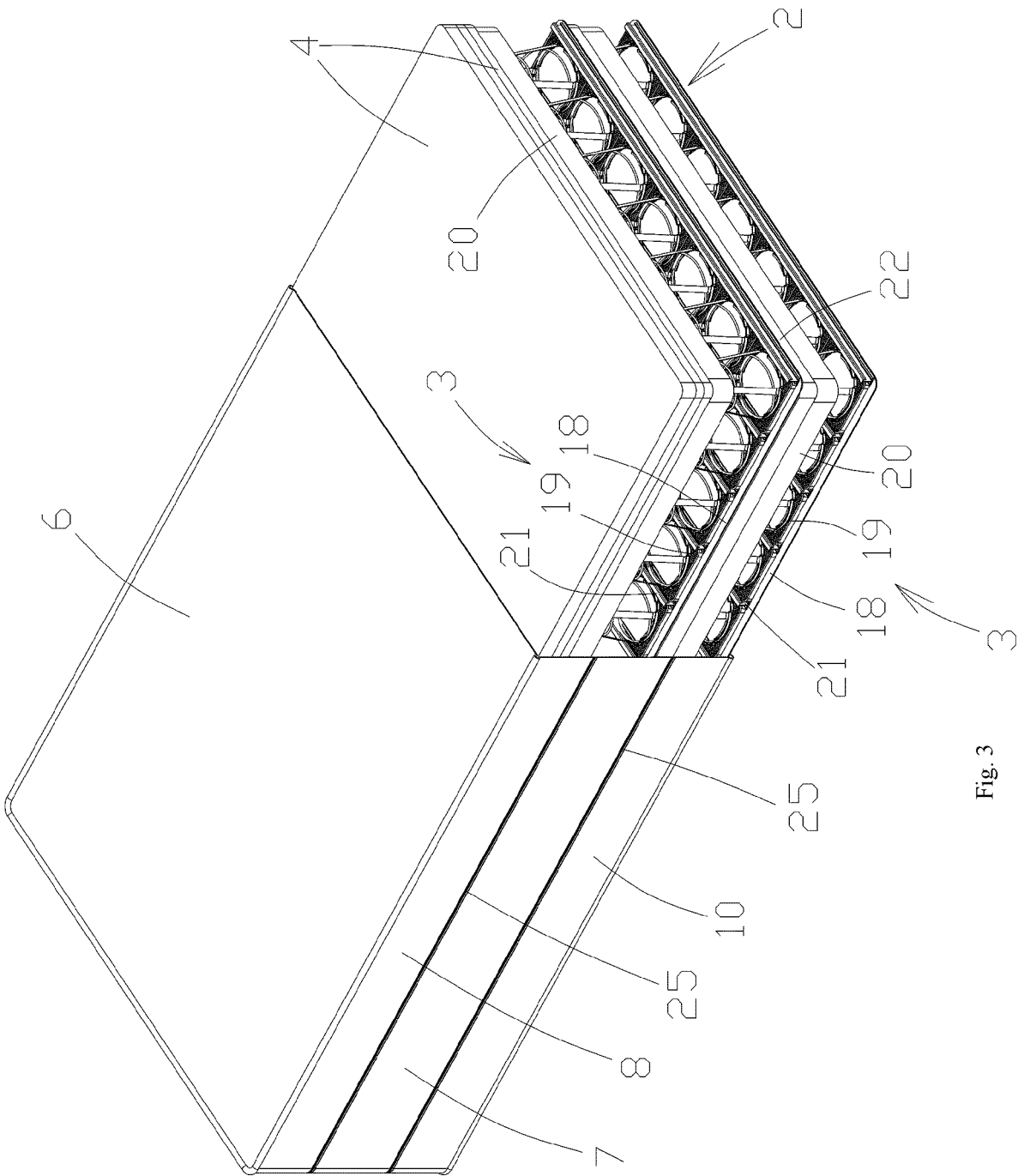


Fig. 3

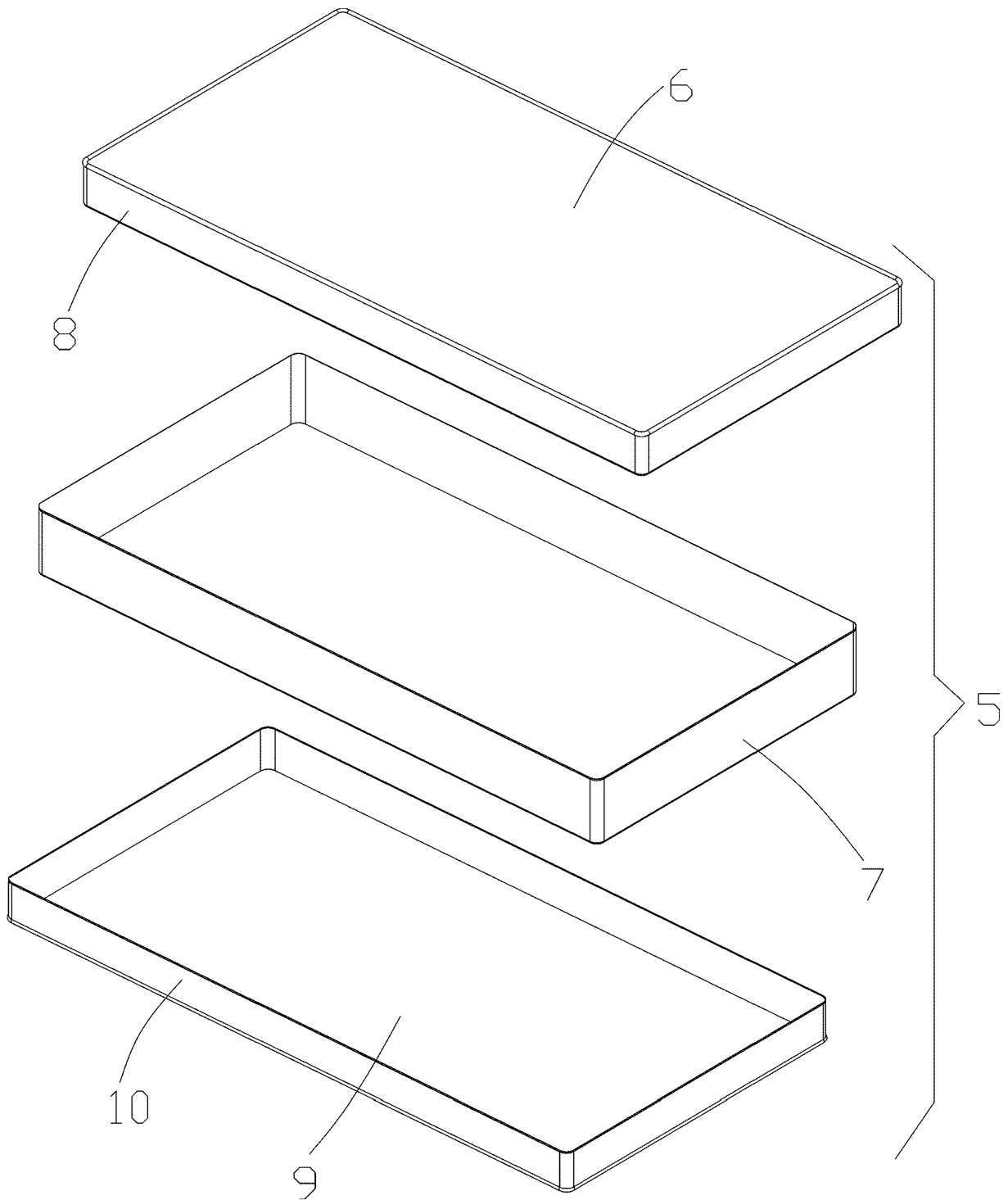


Fig. 4

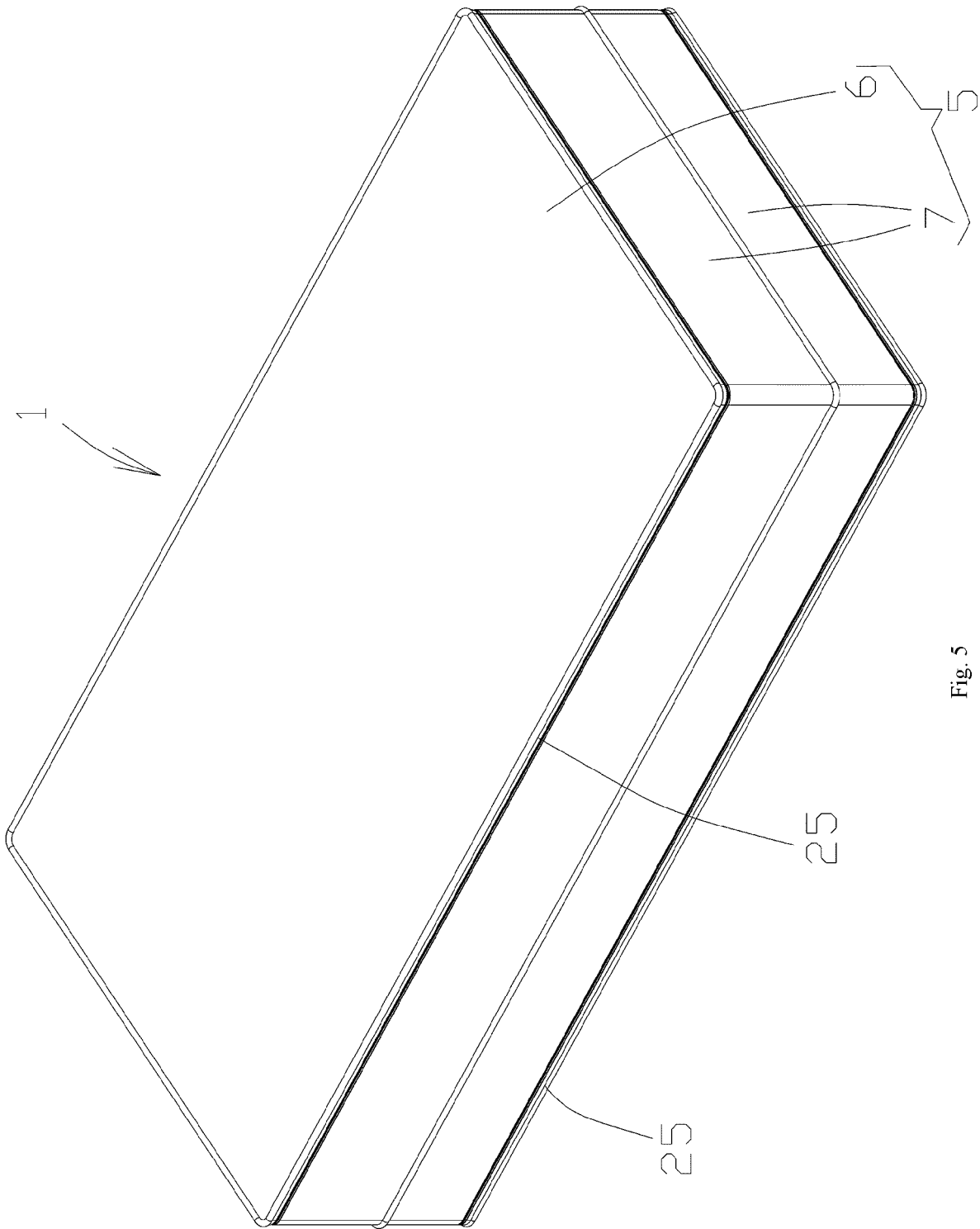


Fig. 5

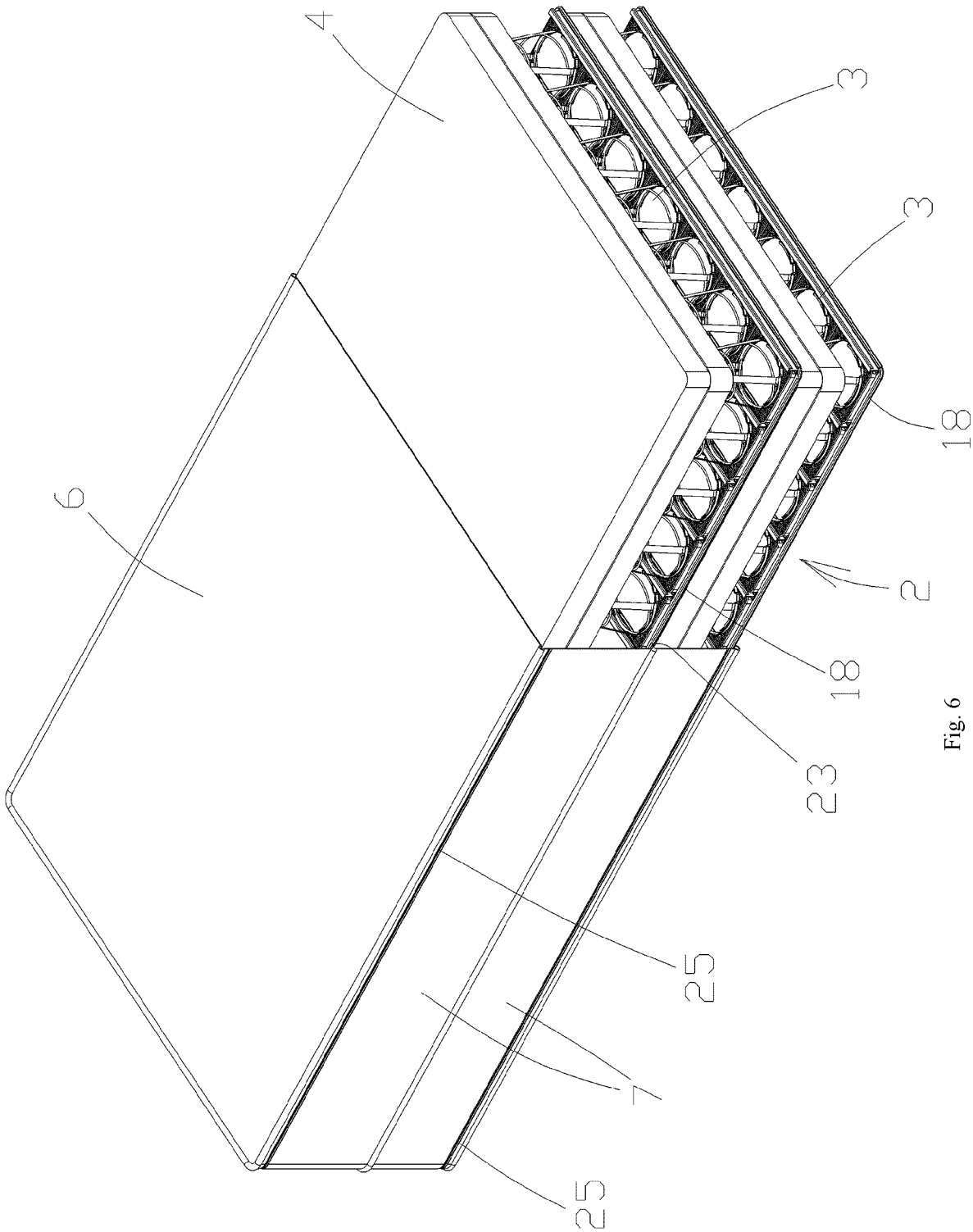


Fig. 6

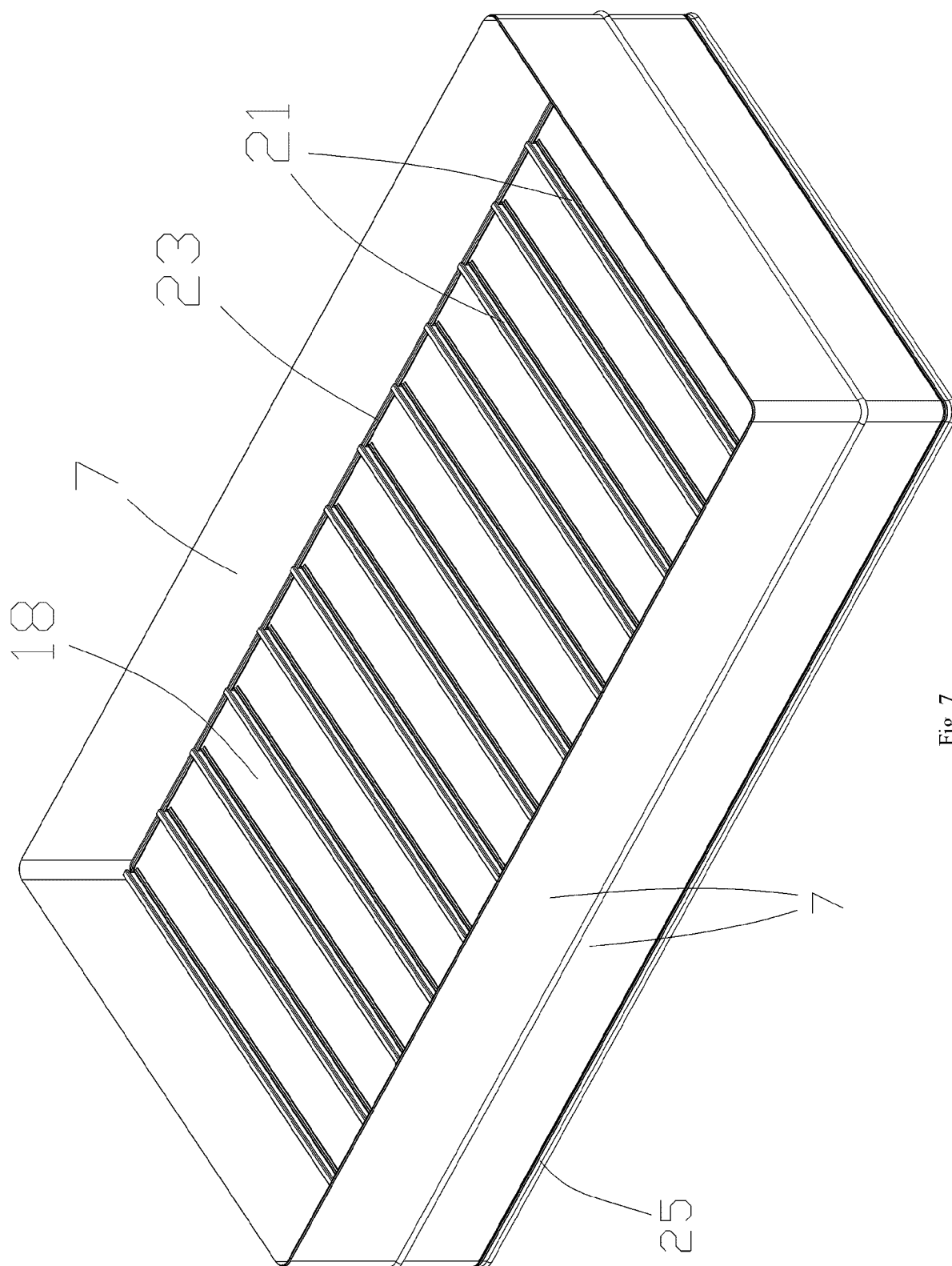


Fig. 7

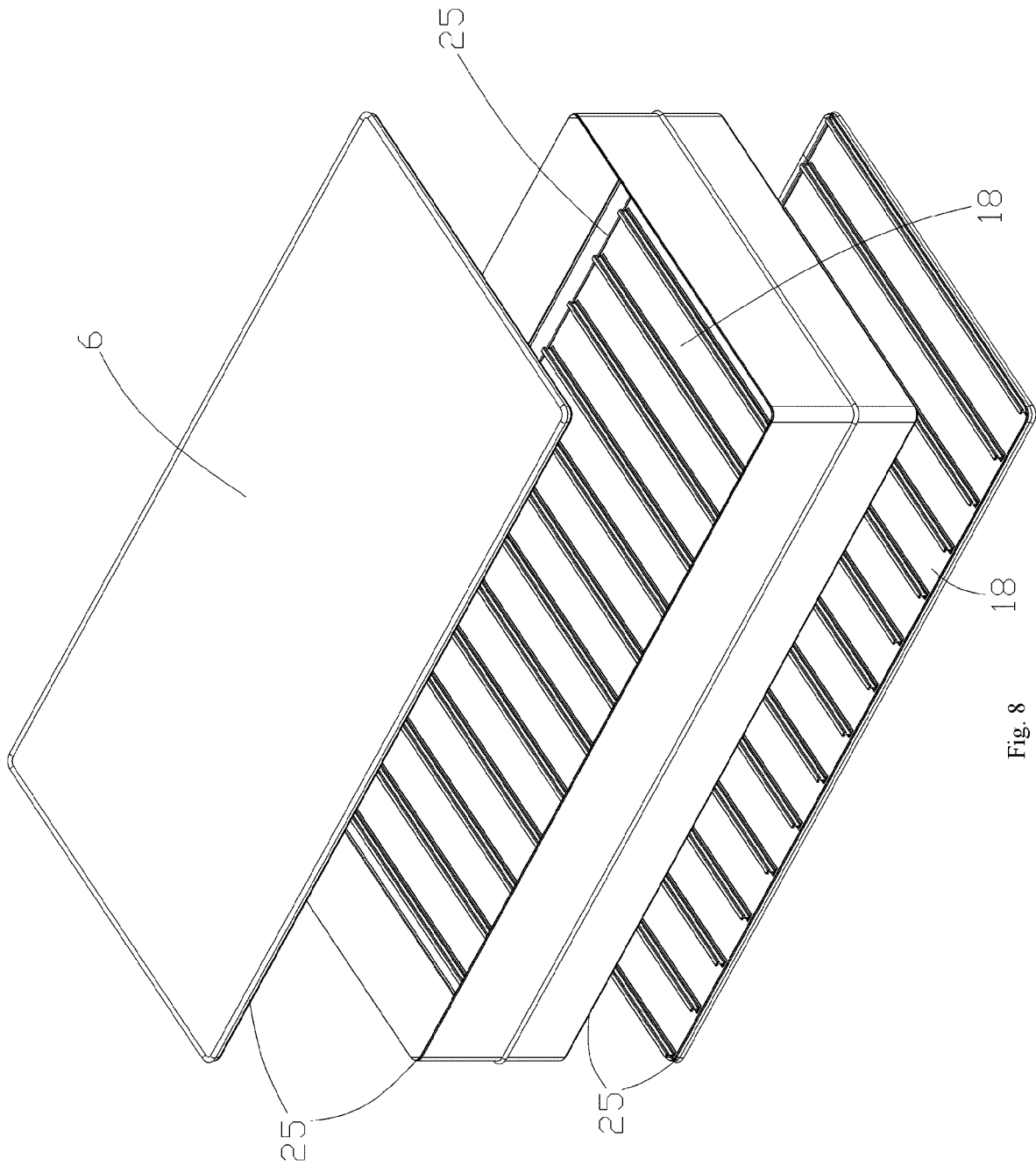


Fig. 8

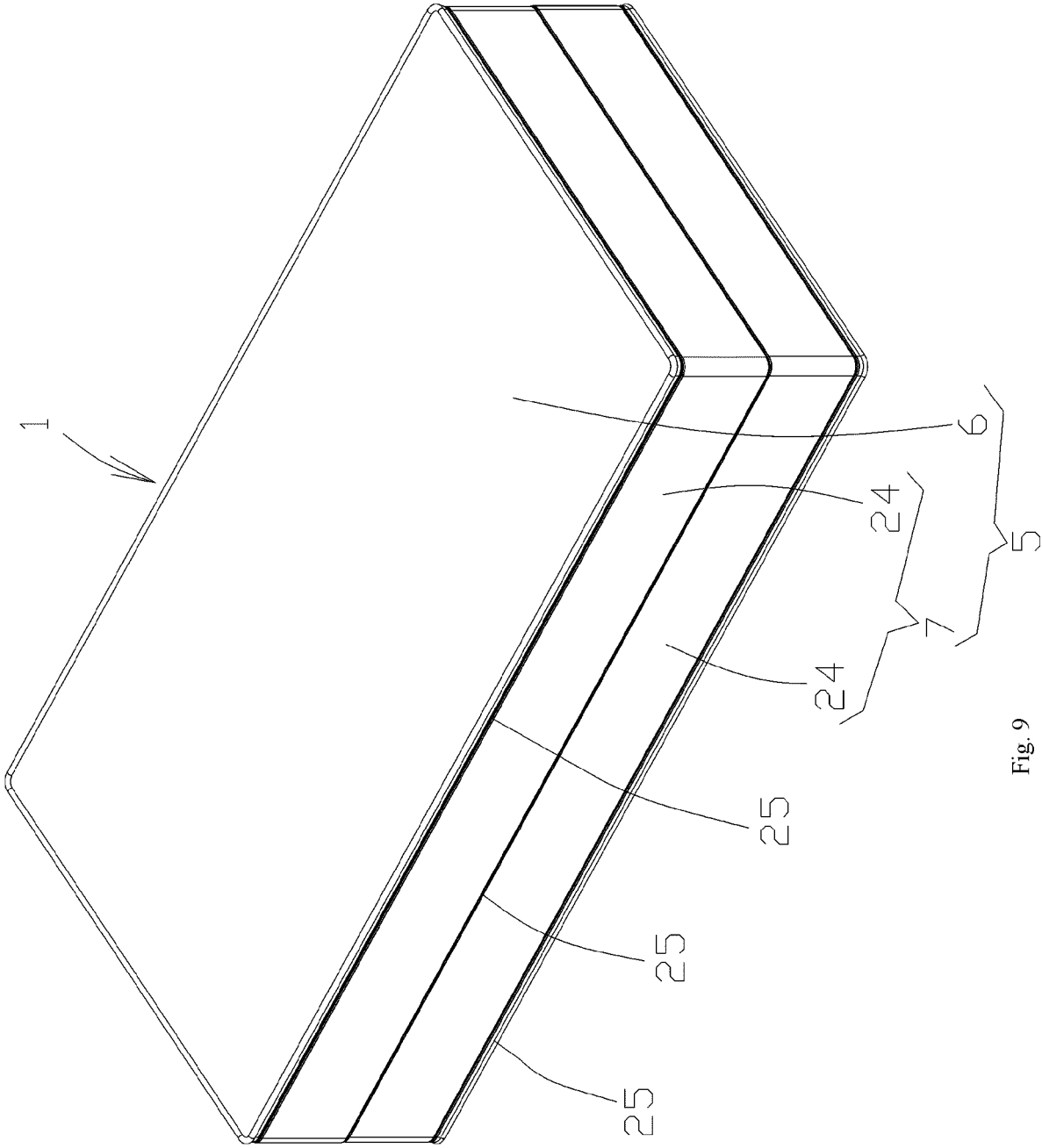


Fig. 9

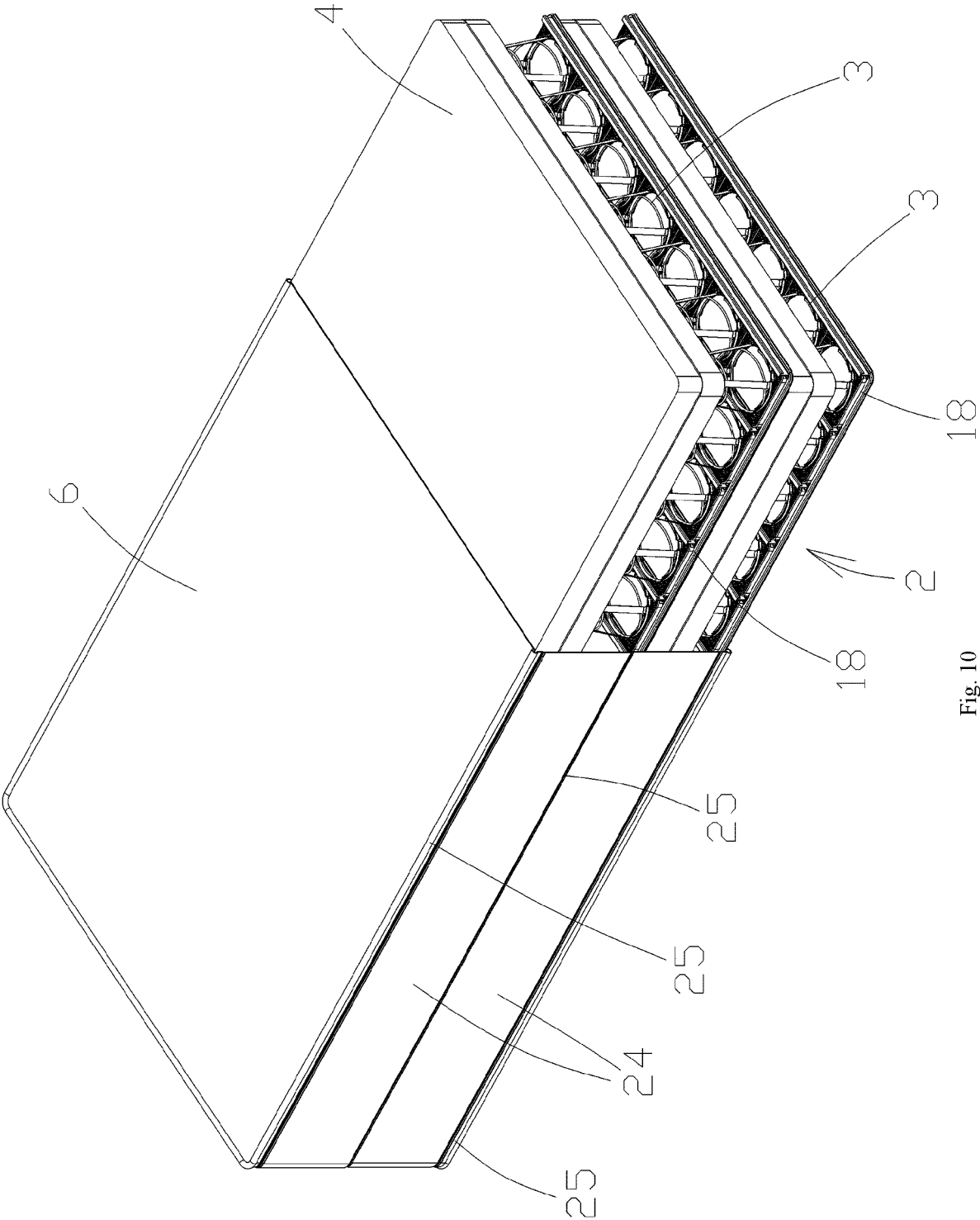


Fig. 10

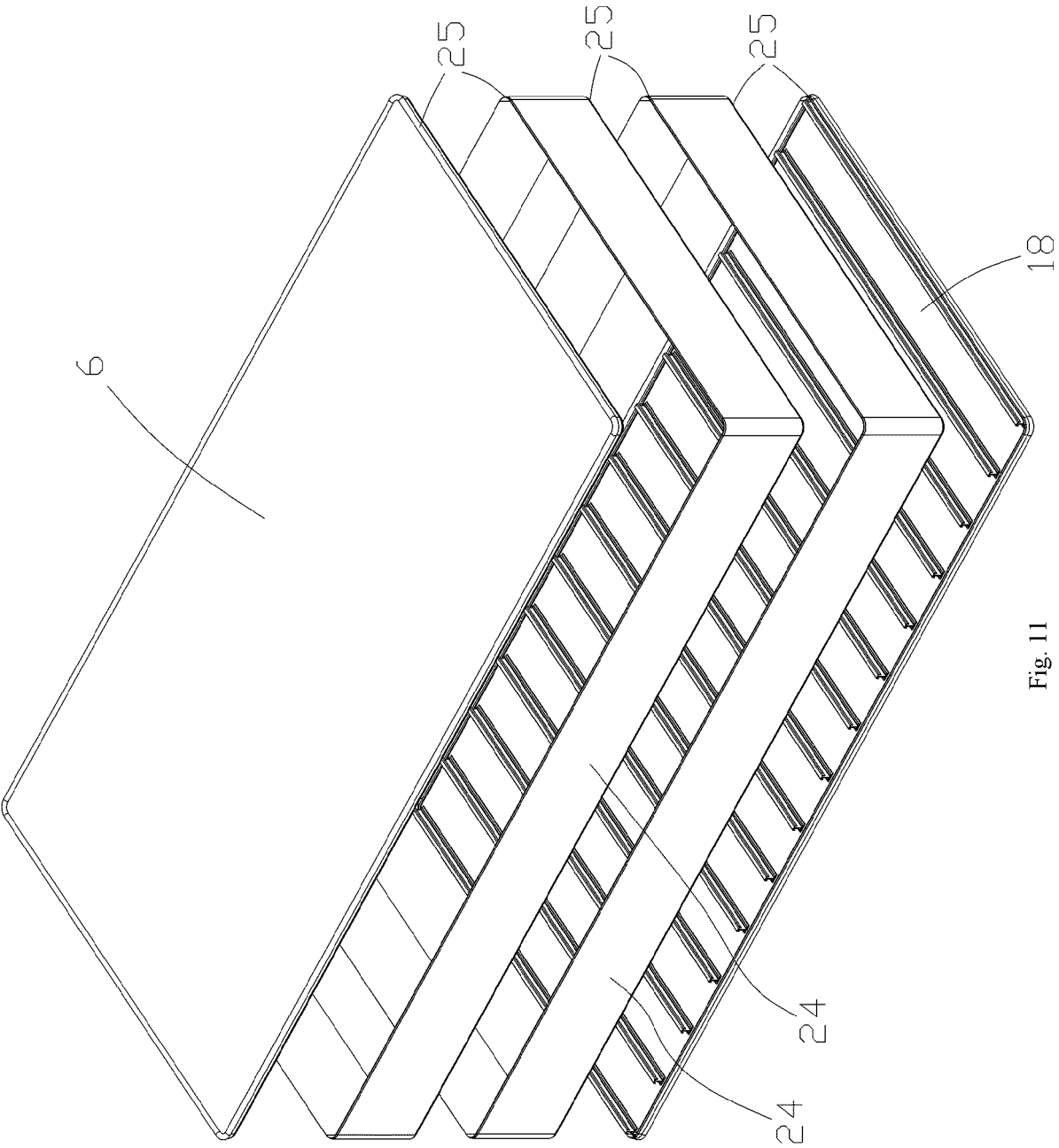


Fig. 11

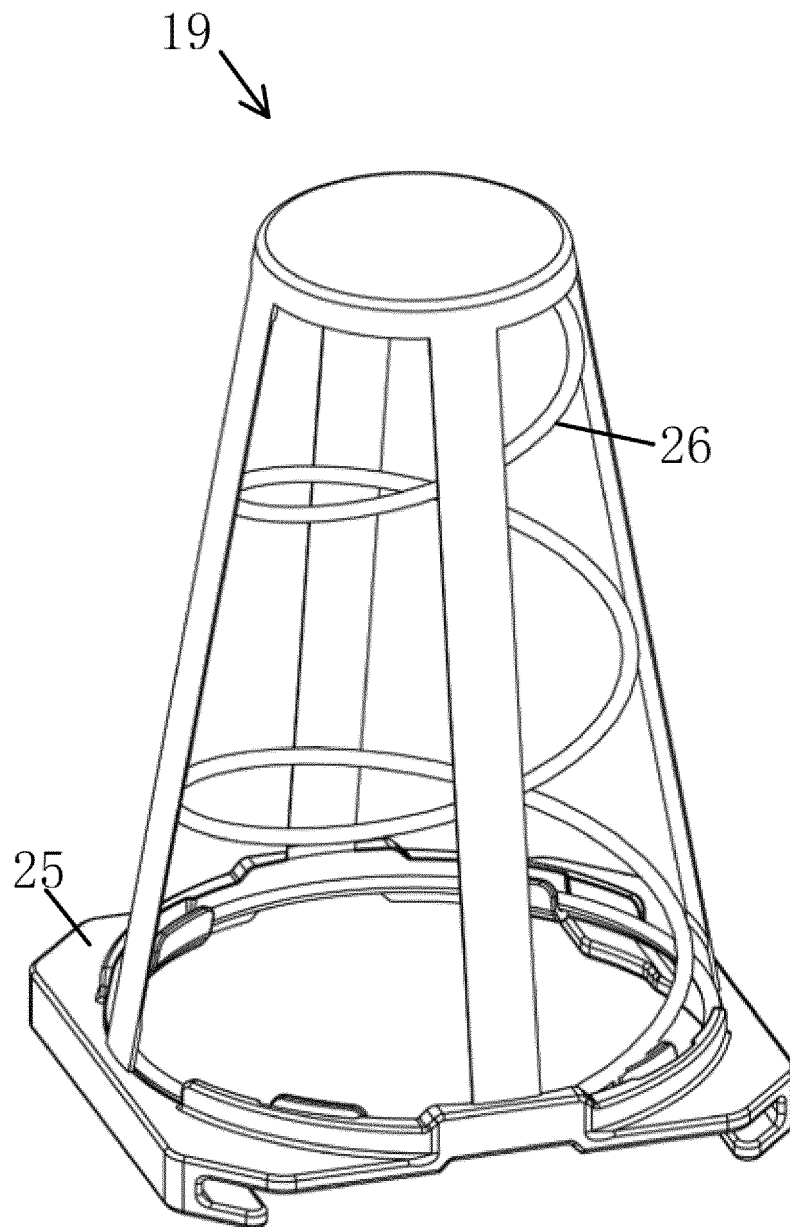


Fig.12

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2022/110294

A. CLASSIFICATION OF SUBJECT MATTER A47C 27/08(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) CNTXT, CNABS, ENTXTC, VEN: 垫, 床垫, 弹性, 弹簧, 罩, 外罩, 拆装, 组装, 侧围, 顶, spring, mattress, elastic, cover+, top, packaging																					
C. DOCUMENTS CONSIDERED TO BE RELEVANT <table border="1"> <thead> <tr> <th>Category*</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>X</td> <td>CN 112674541 A (NEW TEC INTEGRATION XIAMEN CO., LTD.) 20 April 2021 (2021-04-20) claims 1-27, and figures 41A-41D</td> <td>1-21</td> </tr> <tr> <td>X</td> <td>CN 213757509 U (XILINMEN FURNITURE CO., LTD.) 23 July 2021 (2021-07-23) entire document</td> <td>1-21</td> </tr> <tr> <td>A</td> <td>CN 205457541 U (FUJIAN QUANZHOU DAFUHAO FURNITURE CO., LTD.) 17 August 2016 (2016-08-17) entire document</td> <td>1-21</td> </tr> <tr> <td>A</td> <td>CN 112674535 A (NEW TEC INTEGRATION XIAMEN CO., LTD.) 20 April 2021 (2021-04-20) entire document</td> <td>1-21</td> </tr> <tr> <td>A</td> <td>WO 2021073588 A1 (NEW TEC INTEGRATION XIAMEN CO., LTD.) 22 April 2021 (2021-04-22) entire document</td> <td>1-21</td> </tr> <tr> <td>A</td> <td>JP 2010131037 A (FRANCE BED CO., LTD.) 17 June 2010 (2010-06-17) entire document</td> <td>1-21</td> </tr> </tbody> </table>	Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	X	CN 112674541 A (NEW TEC INTEGRATION XIAMEN CO., LTD.) 20 April 2021 (2021-04-20) claims 1-27, and figures 41A-41D	1-21	X	CN 213757509 U (XILINMEN FURNITURE CO., LTD.) 23 July 2021 (2021-07-23) entire document	1-21	A	CN 205457541 U (FUJIAN QUANZHOU DAFUHAO FURNITURE CO., LTD.) 17 August 2016 (2016-08-17) entire document	1-21	A	CN 112674535 A (NEW TEC INTEGRATION XIAMEN CO., LTD.) 20 April 2021 (2021-04-20) entire document	1-21	A	WO 2021073588 A1 (NEW TEC INTEGRATION XIAMEN CO., LTD.) 22 April 2021 (2021-04-22) entire document	1-21	A	JP 2010131037 A (FRANCE BED CO., LTD.) 17 June 2010 (2010-06-17) entire document	1-21
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X	CN 213757509 U (XILINMEN FURNITURE CO., LTD.) 23 July 2021 (2021-07-23) entire document	1-21																			
A	CN 205457541 U (FUJIAN QUANZHOU DAFUHAO FURNITURE CO., LTD.) 17 August 2016 (2016-08-17) entire document	1-21																			
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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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