

Honeycomb plate Structure with Joining Assembly

BACKGROUND OF THE INVENTION

(a) Field of the invention

5 The invention relates to a honeycomb plate structure with joining assembly, particularly one that is capable of forming a dust-free chamber by free combination, and a user is capable of changing its integral area in a convenient way.

(b) Description of the Prior Art

10 High-tech industries involving sophisticated production, especially those engaged in the production of computer chips, must be conducted in a working environment that is free from contamination. At the present, most dust-free chambers are constructed using honeycomb plates or the like.

15 FIG. 1 illustrates a section view of a prior art of honeycomb plate structure with joining assembly, which uses a plurality of honeycomb plates 10 that are dovetailed and a layer of adhesive 11 to assemble an integral area and scale of a dust-free chamber (not shown in drawing).

20 However, the honeycomb plates 10 are glued to each other by the adhesive 11, so the glued honeycomb plates 10 could not be disassembled for reuse. In case the user wishes to change the integral scale and area of the dust-free chamber, he or she must purchase new honeycomb plates 10 and reassemble them. That means waste of time and resources, as well as increased assembling costs.

25 Therefore, the prior art of honeycomb plate structure does involve inconveniences and shortcomings that need improvement.

To seek effective improvement on the aforementioned shortcomings, the inventor has come up with the present invention of "honeycomb plate structure with joining assembly".

5 SUMMARY OF THE INVENTION

The primary purpose of the invention is to provide a honeycomb plate structure with joining assembly, using honeycomb plates that can be conveniently assembled and disassembled to enable a user to assemble them easily or change the integral scale of a dust-free chamber, achieving the purpose of increasing or reducing the integral area of a dust-free chamber, reducing waste of resources and significantly reduce assembling costs, and effectively upgrade the user's convenience in use.

To achieve the above purpose, the present invention provides a honeycomb plate structure with joining assembly, including a plurality of honeycomb plates, a top rail, a bottom rail, a first cover, a second cover, an inside cover and a screw. The top side and bottom side of the honeycomb plate are connected with the grooves of the top rail and the bottom rail, respectively. On two sides of the honeycomb plate is a formation of a plurality of connector units. The first cover, the second cover, the inside cover and the screw are used to join a plurality of honeycomb plates. The first cover and the second cover serve to cover the connector units at two ends of the honeycomb plates, thereby avoiding an ugly appearance of depression where the honeycomb plates are joined, and upgrading the entirety and beautiful look of the dust-free chamber.

To enable better understanding of the aforementioned objectives, characteristics and features of the present invention, the following preferred embodiment is explained in details with accompanying drawing:

BRIEF DESCRIPTION OF DRAWINGS

FIG. 1 is a section view of a prior art of honeycomb plates and joining structure.

FIG. 2 is a front view of the invention when disassembled.

10 FIG. 3 is a cutaway view of the invention when assembled.

FIG. 4 is a view of the invention in application.

FIG. 5 is a lateral view of the invention.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

15 As shown in FIGS. 2 and 4, the present invention relates to a honeycomb plate structure with joining assembly, particularly one that is conveniently assembled by user, including a plurality of honeycomb plates 20, a top rail 21, a bottom rail 22, a first cover 23, a second cover 24, an inside cover 25 and a screw 26.

20 Please refer to FIG. 4; the top and bottom of the honeycomb plate 20 are fitted to grooves (not shown in drawing) of the top rail 21 and the bottom rail 22 to form an integral dust-free chamber (not shown in drawing).

Please refer to FIG. 5, the bottom of honeycomb plate 20 is
25 connected with a third clasp 203 that is roughly shaped like an "H", a "reversed U" iron 204 and an adjusting unit 205. The bottom of the

honeycomb plate 20 is accommodated in the upper half of the third clasp 203. The lower half of the third clasp 203 envelops the two exterior sides of the bottom rail 22. The bottom rail 22 is shaped like a "U". The two opposing interior sides of the bottom rail 22 accommodate the reversed U iron 204. The reversed U iron 204 allows insertion by the adjusting unit 205 before they are tightened to the third clasp 203, so the bottom of the honeycomb plate 20 is firmly connected with the groove of the bottom rail 22. Then, the top of the honeycomb plate 20 is connected with the groove of the top rail 21, so the honeycomb plate 20 is erected steadily.

Please refer to FIGS. 2 and 3; the two sides of the honeycomb plate 20 formed a plurality of connector units 201. The first cover 23 and the second cover 24 serve to cover the connector units 201 that join the two ends of the plurality of honeycomb plates 20, thereby avoiding an ugly appearance of depression where the plurality of honeycomb plates 20 are joined.

The first cover 23 is shaped like a "T". Inside the first clasp 231 extending from the first cover 23 is a thread 232. The thread 232 serves the purpose of tightening with the screw 26.

The inside cover 25 is installed between the first cover 23 and the second cover 24. The inside cover 25 is shaped like a "ø". The inside cover 25 has a slot hole 251 and a snap part 252. The slot hole 251 accommodates the insertion of the screw 26, enabling the screw 26 to tighten to the thread 232 of the first cover 23.

The snap part 252 of the inside cover 25 joins the snap unit 242 on the second clasp 241 extending from the second cover 24. The second

cover 24 is shaped like a reversed "T", to enable convenient connection between the snap unit 242 of the second cover 24 with the snap part 252 of the inside cover 25.

By fitting the top and the bottom of the honeycomb plate 20 to the
5 grooves of the top rail 21 and the bottom rail 22, the honeycomb plate 20 can stand firmly. The first cover 23 and the second cover 24, which can be conveniently assembled or disassembled, cover the connector units 201 where a plurality of honeycomb plates 20 are joined, avoiding an ugly appearance of depressions on the joints between the
10 honeycomb plates 20. Using the screws 26 that can be conveniently tightened or loosened, the user is capable of changing the integrated scale of a dust-free chamber. With such characteristics as free adjustment of the area of a dust-free chamber, effective reduction of waste of resources, significant reduction of assembling costs, and
15 effective upgrading of convenience in application for the user, the present invention is indeed industrially applicable.

To conclude, with its industrial applicability, novelty, inventive step, and the fact that the innovative structure of the present invention has not yet been seen in similar products or used in public, nor has it been
20 disclosed publications as of this date, this application is duly filed in accordance with the patent law. Your favorable consideration will be appreciated.

Although the present invention has been illustrated and described with reference to the preferred embodiment thereof, it should be
25 understood that it is in no way limited to the details of such embodiment but is capable of numerous modifications within the scope of the

appended claims.

CLAIM



What is claimed is:

1. A honeycomb plate structure with joining assembly, comprising:

a plurality of honeycomb plates each having connector units at two
5 sides thereon;

a top rail connected with a top side of each of the honeycomb
plates;

a bottom rail connected with a bottom side of each of the
honeycomb plates;

10 a first cover covering on the connector unit at one side of each of
the honeycomb plates;

a second cover, covering on the connector unit at another side of
each of the honeycomb plates;

15 an inside cover installed between the first cover and the second
cover, having a slot hole thereon; and

a screw being inserted inside the slot hole of the inside cover, and
tightened with a thread inside the first cover.

2. The honeycomb plate structure with joining assembly as claimed in

claim 1, wherein the bottom of each of the honeycomb plates is joined

20 to a clasp, a reversed U iron and an adjusting unit, an upper half of the
clasp serving to accommodate the honeycomb plates, a lower half of
the clasp serving to envelop two external sides of the bottom rail, an
inside of the bottom rail serving to accommodate the reversed U iron,
the reserved U iron serving to accommodate the adjusting unit before

25 they are tightened onto the clasp.

3. The honeycomb plate structure with joining assembly as claimed in



claim 1, wherein the second cover has an extension of a snap unit, and the inside cover has a snap part thereon; the snap unit of the second cover being designed to be fastened to the snap part of the inside cover.

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