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- (71) Applicant: BYD COMPANY LIMITED [CN/CN]; No. 3009, BYD Road, Pingshan, Shenzhen, Guangdong 518118 (CN).
- (72) Inventors: YAN, Shengli; No. 3009, BYD Road, Pingshan, Shenzhen, Guangdong 518118 (CN). ZENG, Wei; No. 3009, BYD Road, Pingshan, Shenzhen, Guangdong 518118 (CN). YI, Bengang; No. 3009, BYD Road, Pingshan, Shenzhen, Guangdong 518118 (CN). YANG, Feng; No. 3009, BYD Road, Pingshan, Shenzhen, Guangdong 518118 (CN).
- (74) Agent: TSINGYIHUA INTELLECTUAL PROPERTY LLC; Room 301, Trade Building, Zhaolanyuan, Tsinghua

University, Qinghuayuan, Haidian District, Beijing 100084 (CN).

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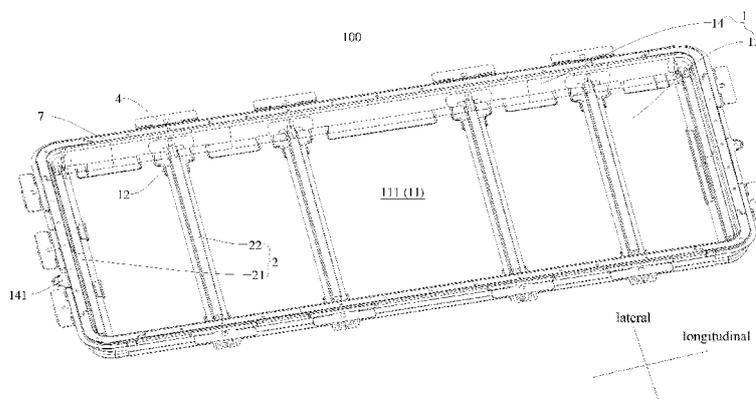


Fig. 1

(57) Abstract: A battery accommodating assembly, a battery module and a vehicle having the same are provided. The battery accommodating assembly includes: a base defining a mounting space which has an open upper end; a plurality of separators disposed on an inner bottom surface of the base to partition the mounting space into a plurality of receiving recesses for receiving batteries, each separator being detachably connected with the base and consisting of a plurality of components detachably assembled with one another; a sealing plate disposed on an upper end surface of the base to close the mounting space.

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**BATTERY ACCOMMODATING ASSEMBLY, BATTERY MODULE AND VEHICLE
HAVING THE SAME**

CROSS-REFERENCE TO RELATED APPLICATIONS

5 This application claims priority to and benefits of Chinese Patent Application No. 201410127575.X, filed with the State Intellectual Property Office of P. R. China on March 31, 2014, and the entire content of the above-identified application is incorporated herein by reference.

FIELD

10 Embodiments of the present disclosure relates to a battery field, more particularly to a battery accommodating assembly, a battery module and a vehicle having the same.

BACKGROUND

15 The statements in this section merely provide background information related to the present disclosure and may not constitute prior art.

 Commonly, once a battery accommodating assembly is designed, it is only adapted to a corresponding vehicle model, and cannot be modified, varied and combined to be adapted to other kinds of vehicle models.

20 Moreover, the versatility of parts of the battery accommodating assembly is low, i.e., the parts in a battery accommodating assembly cannot be used in other battery accommodating assemblies of other kinds of vehicle modules, thus increasing a design difficulty, a manufacturing cycle and a cost of the battery accommodating assembly. Furthermore, the conventional battery accommodating assembly usually has large weight, which causes bad effect on a dynamic performance of the vehicle, such as a driving range.

25

SUMMARY

 Embodiments of the present disclosure seek to solve at least one of the problems existing in the prior art to at least some extent.

30 Embodiments of a first aspect of the present disclosure provide a battery accommodating assembly. The battery accommodating assembly according to embodiments of the present disclosure includes: a base defining a mounting space which has an open upper end; a plurality of

separators disposed on an inner bottom surface of the base to partition the mounting space into a plurality of receiving recesses for receiving batteries, each separator being detachably connected with the base and consisting of a plurality of components detachably assembled with one another; a sealing plate disposed on an upper end surface of the base to close the mounting space.

5 With the battery accommodating assembly according to embodiments of the present disclosure, since the separator consists of the plurality of components detachably assembled with one another, each component may have a universal structure, such that design and manufacture requirements of battery accommodating assemblies can be satisfied, and thus the battery accommodating assembly has high universality, a short design and manufacture cycle and low
10 manufacturing cost.

Embodiments of a second aspect of the present disclosure further provide a battery module including the above-identified battery accommodating assembly.

Embodiments of a third aspect of the present disclosure further provide a vehicle including the above-identified battery module.

15 Additional aspects and advantages of embodiments of present disclosure will be given in part in the following descriptions, become apparent in part from the following descriptions, or be learned from the practice of the embodiments of the present disclosure.

BRIEF DESCRIPTION OF THE DRAWINGS

20 These and other aspects and advantages of embodiments of the present disclosure will become apparent and more readily appreciated from the following descriptions made with reference to the accompanying drawings, in which:

Fig. 1 is a schematic view of a battery accommodating assembly according to an embodiment of the present disclosure;

25 Fig. 2 is an exploded view of a middle separator of a battery accommodating assembly according to an embodiment of the present disclosure;

Fig. 3 is a schematic view of a middle separator of a battery accommodating assembly according to an embodiment of the present disclosure;

30 Fig. 4 is an exploded view of an outmost separator of a battery accommodating assembly according to an embodiment of the present disclosure;

Fig. 5 is a schematic view of an outmost separator of a battery accommodating assembly

according to an embodiment of the present disclosure;

Fig. 6 is a schematic view of an outer longitudinal beam of a battery accommodating assembly according to an embodiment of the present disclosure;

Fig. 7 is a schematic view of a fastener of a battery accommodating assembly according to an
5 embodiment of the present disclosure;

Fig. 8 is an exploded view of a reinforcing plate and a reinforcing plate connector of a battery accommodating assembly according to an embodiment of the present disclosure;

Fig. 9 is a schematic view of a reinforcing plate and a reinforcing plate connector assembled
with each other of a battery accommodating assembly according to an embodiment of the present
10 disclosure; and

Fig. 10 is a schematic view of a sealing plate and a pressing plate assembled with each other
of a battery accommodating assembly according to an embodiment of the present disclosure.

DETAILED DESCRIPTION

15 Reference will be made in detail to embodiments of the present disclosure. The embodiments described herein with reference to drawings are explanatory, illustrative, and used to generally understand the present disclosure. The embodiments shall not be construed to limit the present disclosure. The same or similar elements and the elements having same or similar functions are denoted by like reference numerals throughout the descriptions.

20 In the specification, it should be understood that, the terms such as “central”, “longitudinal”, “lateral”, “width”, “thickness”, “above”, “below”, “front”, “rear”, “right”, “left”, “vertical”, “horizontal”, “top”, “bottom”, “inner”, “outer”, “clockwise”, “counter-clockwise” should be construed to refer to the orientation as then described or as shown in the drawings. These terms are merely for convenience and concision of description and do not alone indicate or imply that the
25 device or element referred to must have a particular orientation. Thus, it cannot be understood to limit the present disclosure.

In addition, terms such as “first” and “second” are used herein for purposes of description and are not intended to indicate or imply relative importance or significance or impliedly indicate quantity of the technical feature referred to. Thus, the feature defined with “first” and “second”
30 may comprise one or more this feature. In the description of the present disclosure, “a plurality of” means two or more than two this features, unless specified otherwise.

In the present disclosure, unless specified or limited otherwise, the terms “mounted,” “connected,” “coupled,” “fixed” and the like are used broadly, and may be, for example, fixed connections, detachable connections, or integral connections; may also be mechanical or electrical connections; may also be direct connections or indirect connections via intervening structures; may also be inner communications of two elements, which can be understood by those skilled in the art according to specific situations.

In the present disclosure, unless specified or limited otherwise, a structure in which a first feature is “on” or “below” a second feature may include an embodiment in which the first feature is in direct contact with the second feature, and may also include an embodiment in which the first feature and the second feature are not in direct contact with each other, but are contacted via an additional feature formed therebetween. Furthermore, a first feature “on,” “above,” or “on top of” a second feature may include an embodiment in which the first feature is right or obliquely “on,” “above,” or “on top of” the second feature, or just means that the first feature is at a height higher than that of the second feature; while a first feature “below,” “under,” or “on bottom of” a second feature may include an embodiment in which the first feature is right or obliquely “below,” “under,” or “on bottom of” the second feature, or just means that the first feature is at a height lower than that of the second feature.

A battery accommodating assembly 100 according to embodiments of the present disclosure will be described below with reference to Figs. 1-10. It should be noted that the battery accommodating assembly 100 is configured to receive batteries. In an embodiment of the present disclosure, the battery accommodating assembly 100 may receive power batteries of an electrical vehicle so as to form a power battery module which may be used in the vehicle to provide power for driving the vehicle.

In some embodiments, as shown in Fig. 1 and combined with Fig.10, the battery accommodating assembly 100 includes a base 1, a plurality of separators 2 and a sealing plate 8.

The base 1 defines a mounting space 11 which has an open upper end. The plurality of the separators 2 are disposed on an inner bottom surface of the base 1 to partition the mounting space 11 into a plurality of receiving recesses 111 for receiving batteries. The sealing plate 8 is provided on an upper end surface of the base 1 to close the mounting space 11.

In other words, the battery may be provided in the receiving recess 111. In some embodiments, the receiving recess 111 can receive a single battery module, and certainly the

receiving recess 111 may also receive a battery assembly, which is determined according to actual conditions.

By setting the sealing plate 8, the battery received in the receiving recess 111 may be protected effectively. In some embodiments, a fireproof layer and a sound insulation layer may be provided between the battery accommodating assembly 100 and a mounting body, thereby providing a great sound insulation and fire resistance between the battery accommodating assembly 100 and the mounting body. In some embodiments, the mounting body is configured as a frame, a floor or a roof of the vehicle.

In some embodiments, each separator 2 is detachably connected with the base 1 and consists of a plurality of components detachably assembled with one another. That is, each separator 2 may be constituted by more than one component, and the components are manufactured separately and then assembled together into the separator 2. And then, the separator 2 is assembled with the base 1 to constitute the battery accommodating assembly 100. After the batteries are disposed within the battery accommodating assembly 100, the battery accommodating assembly 100 is mounted in a corresponding mounting body of the vehicle, such as the frame, the floor or the roof of the vehicle.

In the related art, once the battery accommodating assembly is designed, only mounting size requirements of a corresponding vehicle module can be satisfied, and the battery accommodating assembly for a different vehicle module is needed to be designed and manufactured again, i.e., parts of different types of battery accommodating assemblies are not universal, which increases a R & D cost and manufacturing cost of a product, thus resulting in a high total cost.

With the battery accommodating assembly according to embodiments of the present disclosure, since the separator consists of the plurality of components detachably assembled with one another, each component may have a universal structure, such that design and manufacture requirements of different types of battery accommodating assemblies can be satisfied, and thus the battery accommodating assembly has high universality, a short design and manufacture cycle and low manufacturing cost.

The separator 2 will be described in the following with reference to Figs. 1 to 5. It should be noted that, a shape of the battery accommodating assembly 100 may be varied. For example, in an embodiment of the present disclosure as shown in Fig. 1, the battery accommodating assembly 100 may be configured to have a rectangular shape, and the plurality of the separators 2 are extended in

a lateral direction (a width direction of the battery accommodating assembly 100) and spaced from each other in a longitudinal direction (a length direction of the battery accommodating assembly 100). A length of the separator 2 is substantially equal to a lateral length of the mounting space 11. It may be interpreted that " a length of the separator 2 is substantially equal to a lateral length of the mounting space 11" means that the length of the separator 2 may be equal to or substantially equal to the lateral length dimension of the mounting space 11.

In some embodiments, the battery accommodating assembly 100 may have other shapes, such as a circular shape, an oval shape, a triangular shape and a trapezoidal shape, and a particular shape of the battery accommodating assembly 100 may be specifically designed according to actual requirements. In order to describe the present disclosure conveniently, the battery accommodating assembly 100 is configured to have a rectangular in the following.

In some embodiments as shown in Figs. 1 to 5, the base 1 may be configured as a mounting tray. The mounting tray includes a bottom plate 13 and a side plate 14. The side plate 14 is disposed at and along an outer periphery of the bottom plate 13. And the mounting space 11 is defined by the bottom plate 13 and the side plate 14.

In some embodiments, an extending edge is extended outwards from an upper end of the side plate 14. A plurality of mounting positioning portions 141 spaced from each other are extended outwards from the extending edge. The plurality of mounting positioning portions 141 are configured to position the battery accommodating assembly 100 on the mounting body. In some embodiments, a mounting hole is provided in the mounting positioning portion 141.

In some embodiments, a corner of the side plate 14 is a round corner, and thus it is avoided to scratch a human body or other components. In addition, the bottom plate 13 and the side plate 14 are formed integrally by punching, and by configuring the corner of the side plate 14 as the round corner, it is in favor of the feasibility of a punching process. Certainly, the present disclosure is not limited to this, and the corner of the side plate 14 may not be the round corner.

The plurality of the separators 2 include: two outmost separators 21 disposed in the longitudinal direction; and a middle separator 22 disposed between the two outmost separators 21.

In some embodiments, the two outmost separators 21 are disposed at two ends of the mounting space 11 in the longitudinal direction and connected with the inner bottom surface of the base 1 and corresponding side walls of the base 1 in the lateral direction. By providing the two outmost separators 21 at the two ends of the mounting space 11 in the longitudinal direction, the

mounting space 11 is divided by the two outmost separators 21, and the two outmost separators 21 also play a role in strengthening the side plate 14, so that a structural strength of the battery accommodating assembly 100 is ensured.

In some embodiments, the outmost separator 21 includes a first partitioning beam 211 and first partitioning beam connectors 212, and the first partitioning beam connectors 212 are disposed at two ends of the first partitioning beam 211. The first partitioning beam 211 is disposed in the mounting space 11 via the first partitioning beam connectors 212. In some embodiments, a cross-section of the partitioning beam 211 is of a stepped shape. That is, a shape of the cross-sectional of the first partitioning beam 211 in the entire longitudinal direction is constant. For example, the first partitioning beam 211 may be a rolling member which may be cut out into a part of any length according to a size requirement, thereby providing a high universality with the first partitioning beam 211, and the first partitioning beam 211 may be used in different types of battery accommodating assemblies. In some embodiments, the first partitioning beam connector 212 may be configured as a universal stamping part, i.e., for different types of battery accommodating assemblies 100, the first partitioning beam connector 212 may have a same size and shape, thereby improving the universality of the first partitioning beam connector 212 and reducing the R & D cost.

In an embodiment as shown in Fig. 1, a shape of the first partitioning beam connector 212 is adapted to that of a corner of the mounting space 11, so that the corner of the mounting space 11 can be strengthened by the first partitioning beam connector 212.

In some embodiments, the middle separator 22 includes a second partitioning beam 221 and second partitioning beam connectors 222. The second partitioning beam connectors 222 are disposed at two ends of the second partitioning beam 221. The second partitioning beam 221 is disposed in the mounting space 11 via the second partitioning beam connectors 222. As shown in Fig. 1, the middle separator 22 is disposed between and spaced from the two outmost separators 22. In addition, there may be one or more middle separators 22, and the middle separators 22 are spaced from each other, and thus the receiving recess 111 for receiving the battery is defined between two adjacent middle separators 22 or between a separator 22 and an adjacent outmost separator 21.

In some embodiments, a cross-section of the second partitioning beam 221 is of a substantially inverted U shape. Similarly, a shape of the cross-section of the second partitioning

beam 221 in the entire longitudinal direction is constant. For example, the second partitioning beam 221 may be a rolling member which may be cut out into a part of any length according to a size requirement, thereby providing a high universality with the second partitioning beam 221, and the second partitioning beam 221 may be used in different types of battery accommodating assemblies. In some embodiments, the second partitioning beam connector 222 may be configured as a universal stamping part, i.e., for different types of battery accommodating assemblies 100, the second partitioning beam connector 222 may have a same size and shape, thereby improving the universality of the second partitioning beam connector 222 and reducing the R & D cost.

In some embodiments, as shown in Fig. 1, the second partitioning beam connector 222 is connected with the inner bottom surface of the base 1 and a longitudinal side wall of the base 1, thereby fixing the second partitioning beam 221 in mounting space 11 stably. In some embodiments, the second partitioning beam connector 222 includes a connector body 2221, an inner bottom surface connecting portion 2222 and a side wall connecting portion 2223. A cross-section of the connector body 2221 is of a substantially inverted U shape, and an inner end of the connector body 2221 is extended into the second partitioning beam 221, so that a shape of the connector body 2221 is adapted to that of the second partitioning beam 221 and a connection therebetween is more stable. The inner bottom surface connecting portion 2222 is disposed on an outside of the connector body 2221 and connected to the inner bottom surface of the base 1. The side wall connecting portion 2223 is disposed on the outside of the connector body 2221 and connected with the longitudinal side wall of the base 1. In some embodiments, the inner bottom surface connecting portion 2222 and the side wall connecting portion 2223 are disposed at different sides of the connector body 2221, and thus the connector body 2221 can be connected with the inner bottom surface and the longitudinal side wall of the base 1.

In some embodiments, the battery accommodating assembly 100 further includes a positioning portion 12 for positioning the separator 2. The positioning portion 12 is disposed on the inner bottom surface of the base 1. By setting the positioning portion 12, it is convenient to position the separator 2 in the mounting space 11. In some embodiments, the positioning portion 12 is disposed on an outer periphery of the inner bottom surface of the base 1, and thus the positioning portion 12 will not affect the receiving recess 111 in the mounting space 11, and thus a more reasonable structure is provided. In some embodiments, the positioning portion 12 may be configured as a protrusion projected upwards from the inner bottom surface of the base 1. A

horizontal projection of the positioning portion 12 has a substantially inverted T shape or a rectangular shape, which may ensure a structural strength of the positioning portion 12, thus ensuring a fitting strength between the separator 2 and the positioning portion 12.

In some embodiments, the battery accommodating assembly 100 further includes an outer longitudinal beam 3. The outer longitudinal beam 3 is disposed on an outer bottom surface of the base 1 and extended in the longitudinal direction. In other words, the outer longitudinal beam 3 is disposed on the outer bottom surface of the base 1 and extended in a length direction of the battery accommodating assembly 100. By setting the outer longitudinal beam 3, the structural strength of the base 1 can be enhanced by the outer longitudinal beam 3, so that an overall structural strength of the battery accommodating assembly 100 also can be improved. Furthermore, the outer longitudinal beam 3 may also prevent the battery from being scratched and contributes to adding a bottom protective steel plate (not shown) to the base 1 in a later period.

In some embodiments, there may be a plurality of outer longitudinal beams 3 and the plurality of outer longitudinal beams 3 are disposed in the lateral direction and spaced from each other. In some embodiments, a number of the outer longitudinal beams 3 may be determined according to a width of the base 1. A length of the outer longitudinal beams 3 is substantially equal to a size of the base 1 in the longitudinal direction. It may be interpreted that, " a length of the outer longitudinal beams 3 is substantially equal to a size of the base 1 in the longitudinal direction " means that the length of the outer longitudinal beams 3 may be equal to or substantially equal to the size of the base 1 in the longitudinal direction, thereby enhancing a strength effect of the base 1 by the outer longitudinal beam 3.

In some embodiments, as shown in Fig. 7, the battery accommodating assembly 100 further includes a plurality of fasteners 4. The fasteners 4 are spaced from each other and disposed on an outer surface of the base 1 along an outer periphery of the base 1 so as to fix the base 1 on the mounting body. That is, by providing the fastener 4, the base 1 may be fixed to the mounting body, and thus it is more convenient to mount the base 1 on the mounting body with a stable structure. In some embodiments, the fasteners 4 are disposed along the outer periphery of the base 1 and spaced from each other.

In some embodiments, each fastener 4 is corresponding to an end of the separator 2 or an end of the outer longitudinal beam 3 respectively. That is, on an outer surface of the base 1, the fastener 4 is disposed in a position where the end of the separator 2 or the end of the outer

longitudinal beam 3 is. Since the fastener 4 is corresponding to the end of the separator 2 or the end of the outer longitudinal beam 3 respectively, a force acted on the fastener 4 is spread over the separator 2 and the outer longitudinal beam 3, when the base 1 is mounted to the mounting body, thus resulting in a reasonable force distribution and a stable installation.

5 In some embodiments, as shown in Fig. 7, the fastener 4 includes a fixing base 41 and a fixing plate 42. The fixing base 41 is disposed on an outer bottom surface of the base 1. An outer end (i.e., an end away from a center of the fixing base 41) of the fixing base 41 is extended upwards and outwards so that an upper surface of the fixing base 41 is substantially flush with the upper end surface of the base 1. The fixing plate 42 is disposed on the upper surface of the outer end of the fixing base 41. The fixing plate 42 is disposed on the upper surface of the outer end of the fixing base 41, and a cavity is defined by the fixing base 41 and the fixing plate 42. In some
10 embodiments, the fixing base 41 has a concave portion recessed downwards, and the fixing plate 42 closes the cavity. By defining the cavity, a structural strength of the fastener 4 is ensured. In some embodiments, the fastener 4 may be connected to the mounting body by a bolt (not shown).
15 Specifically, the bolt may pass through the fixing base 41 from bottom to top, then pass through the fixing plate 42 and finally connect the mounting body.

In some embodiments, the fastener 4 may further include a bolt sleeve (not shown). The bolt sleeve is disposed in the fixing base 41 and fixing plate 42. Specially, the bolt sleeve may pass through the fixing base 41 from bottom to top and then pass through the fixing plate 42, and the
20 bolt may be disposed in the bolt sleeve.

In some embodiments, the battery accommodating assembly 100 further includes a reinforcing plate 5. As shown in Figs. 8 and 9, the reinforcing plate 5 is disposed on the outer surface of the base 1 along the outer periphery of the base. In some embodiments, a shape of the reinforcing plate 5 is adapted to that of the outer surface of the base 1. The reinforcing plate 5 is
25 divided into a plurality of sections, and each section of reinforcing plate 5 is disposed between two adjacent fasteners 4. By providing the reinforcing plate 5, the structural strength of the base 1 is further enhanced, and thus stability and safety of the battery accommodating assembly 100 are improved, and the battery accommodating assembly 100 can provide better protection to the batteries therein.

30 In some embodiments, as shown in Figs. 8 and 9, the battery accommodating assembly 100 further includes a reinforcing plate connector 6. The reinforcing plate connector 6 is disposed on

the outer surface of the base 1 and located at a corner of the base 1 to connect two adjacent reinforcing plates 5. By setting the reinforcing plate connector 6, the structural strength of the corner of the base 1 is enhanced. In some embodiments, the reinforcing plate 5 may have a straight stripe shape, and the reinforcing plate connector 6 may have a substantially arc shape, and thus the reinforcing plate 5 and the reinforcing plate connector 6 may be combined according to the size of the base 1.

In some embodiments, as shown in Fig. 10, the battery accommodating assembly 100 further includes a pressing plate 7. The pressing plate 7 is configured to press the sealing plate 8 against an upper end of the base 1. In some embodiments, the pressing plate 7 is configured to have a multi-segment stripe structure and disposed at an outer edge of the sealing plate 8. By providing the pressing plate 7, the sealing plate can be stably disposed on the base 1.

In some embodiments, as shown in Fig. 10, the pressing plate 7 includes a plurality of straight strip plates 71 and a plurality of curved plates 72. The straight strip plate 71 is disposed on the base 1 in the longitudinal and lateral directions. The curved plate 72 is disposed at the corner of the base 1 and connected with two adjacent straight strip plates 71. By dividing the pressing plate 7 into the plurality of straight strip plates 71 and the plurality of curved plates 72, the pressing plate 7 may be designed according to the size of the base 1, thereby improving a universality of the pressing plate 7.

Embodiments of the present disclosure further provide a battery module including the above-identified battery accommodating assembly 100 and batteries received in the receiving recesses 111. The battery module has a high universality, a short design and manufacture cycle and a low manufacturing cost.

Embodiments of the present disclosure further provide a vehicle including the above-identified battery module. Other configurations such as a driving system, a turning system and a braking system are well known to those skilled in the related art, and thus details thereof are omitted herein.

Reference throughout this specification to “an embodiment,” “some embodiments,” “one embodiment,” “another example,” “an example,” “a specific example,” or “some examples,” means that a particular feature, structure, material, or characteristic described in connection with the embodiment or example is included in at least one embodiment or example of the present disclosure. Thus, the appearances of the phrases such as “in some embodiments,” “in one

embodiment”, “in an embodiment”, “in another example,” “in an example,” “in a specific example,” or “in some examples,” in various places throughout this specification are not necessarily referring to the same embodiment or example of the present disclosure. Furthermore, the particular features, structures, materials, or characteristics may be combined in any suitable
5 manner in one or more embodiments or examples.

Although explanatory embodiments have been shown and described, it would be appreciated by those skilled in the art that the above embodiments cannot be construed to limit the present disclosure, and changes, alternatives, and modifications can be made in the embodiments without departing from spirit, principles and scope of the present disclosure.

What is claimed is:

1. A battery accommodating assembly, comprising:

a base defining a mounting space which has an open upper end;

5 a plurality of separators disposed on an inner bottom surface of the base to partition the mounting space into a plurality of receiving recesses for receiving batteries, each separator being detachably connected with the base and consisting of a plurality of components detachably assembled with one another;

a sealing plate disposed on an upper end surface of the base to close the mounting space.

10

2. The battery accommodating assembly of claim 1, wherein a positioning portion for positioning the separator is disposed on the inner bottom surface of the base.

3. The battery accommodating assembly of claim 2, wherein the positioning portion is
15 disposed on an outer periphery of the inner bottom surface of the base.

4. The battery accommodating assembly of claim 2, wherein the positioning portion is configured as a protrusion projected upwards from the inner bottom surface of the base.

20 5. The battery accommodating assembly of claim 4, wherein a horizontal projection of the positioning portion has an inverted T shape or a rectangular shape.

6. The battery accommodating assembly according to any one of claims 1-5, wherein the base is configured as a mounting tray.

25

7. The battery accommodating assembly of claim 6, wherein the mounting tray comprises:

a bottom plate;

a side plate disposed at and along an outer periphery of the bottom plate;

wherein the mounting space is defined by the bottom plate and the side plate.

30

8. The battery accommodating assembly of claim 7, wherein an extending edge is extended

outwards from an upper end of the side plate.

9. The battery accommodating assembly of claim 7, wherein
a plurality of mounting positioning portions spaced from each other are extended outwards
5 from the extending edge.

10. The battery accommodating assembly of claim 7, wherein a corner of the side plate is
configured as a round corner.

10 11. The battery accommodating assembly of claim 7, wherein
the plurality of the separators are spaced from each other in a longitudinal direction and each
separator is extended in a lateral direction, and a length of the separator is substantially equal to a
length of the mounting space in the lateral direction.

15 12. The battery accommodating assembly of claim 11, wherein the plurality of separating
members includes:
two outermost separators disposed in the longitudinal direction respectively; and
a middle separator disposed between the two outermost separators.

20 13. The battery accommodating assembly of claim 12, wherein the two outermost separators
are disposed at two ends of the mounting space in the longitudinal direction, and connected with
the inner bottom surface of the base and corresponding lateral side walls of the base.

25 14. The battery accommodating assembly of claim 13, wherein the outermost separator
comprises:
a first partitioning beam; and
first partitioning beam connectors disposed at two ends of the partitioning beam respectively,
wherein the first partitioning beam is disposed in the mounting space via the first partitioning
beam connectors.

30 15. The battery accommodating assembly of claim 14, wherein a cross-section of the first

partitioning beam is of a stepped shape.

16. The battery accommodating assembly of claim 14, wherein a shape of the first partitioning beam connector is adapted to that of a corner of the mounting space.

5

17. The battery accommodating assembly of claim 12, wherein the middle separator comprises:

a second partitioning beam; and

10 second partitioning beam connectors disposed at two ends of the second partitioning beam respectively,

wherein the second partitioning beam is disposed in the mounting space via the second partitioning beam connectors.

18. The battery accommodating assembly of claim 17, wherein a cross-section of the second 15 partitioning beam is of a substantially inverted U shape.

19. The battery accommodating assembly of claim 17, wherein the second partitioning beam connector is connected with the inner bottom surface of the base and a longitudinal side wall of the base.

20

20. The battery accommodating assembly of claim 17, wherein the middle partitioning beam connector comprises:

a connector body having a cross-section in a shape of a substantially inverted U and an inner end extended into the second partitioning beam;

25 an inner bottom surface connecting portion disposed on an outside of the connector body and connected to the inner bottom surface of the base; and

a side wall connecting portion, disposed on the outside of the connector body and connected with the longitudinal side wall of the base.

30 21. The battery accommodating assembly of claim 1, further comprising an outer longitudinal beam disposed on an outer bottom surface of the base and extended in

the longitudinal direction.

22. The battery accommodating assembly of claim 21, wherein there are a plurality of outer longitudinal beams spaced from each other in the lateral direction.

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23. The battery accommodating assembly of claim 22, wherein a length of the outer longitudinal beam is substantially equal to a size of the base in the longitudinal direction.

24. The battery accommodating assembly of claim 21, further comprising
10 a plurality of fasteners disposed on an outer surface of the base along an outer periphery of the base and spaced from each other.

25. The battery accommodating assembly of claim 24, wherein the plurality of fasteners are corresponding to ends of the separators and ends of the outer longitudinal beam respectively.

15

26. The battery accommodating assembly of claim 1, wherein the fastener comprises:
a fixing base, disposed on an outer bottom surface of the base and defining an outer end extended upwards and outwards so that an upper surface of the outer end of the fixing base is flush with an upper end surface of a side wall of the base; and
20 a fixing plate, disposed on the upper surface of the outer end of the fixing base, wherein a cavity is defined by the fixing base and the fixing plate.

27. The battery accommodating assembly of claim 26, wherein the fixing base has a concave portion recessed downwards, and the fixing plate closes the cavity.

25

28. The battery accommodating assembly of claim 1, further comprising
a reinforcing plate, disposed on an outer surface of the base along an outer periphery of the base.

29. The battery accommodating assembly of claim 28, wherein a shape of the reinforcing plate is adapted to that of the outer surface of the base.

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30. The battery accommodating assembly of claim 28, wherein the reinforcing plate is divided into a plurality of sections, each section of the reinforcing plate is disposed between two adjacent fasteners.

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31. The battery accommodating assembly of claim 30, further comprising a reinforcing plate connector, disposed on the outer surface of the base and located at a corner of the base so as to connect two adjacent reinforcing plates.

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32. The battery accommodating assembly of claim 1, further comprising a pressing plate to press the sealing plate against an upper end of the base.

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33. The battery accommodating assembly of claim 32, wherein the pressing plate is configured to have a multi-segment stripe structure and disposed at an outer edge of the sealing plate.

20

34. The battery accommodating assembly of claim 33, wherein the pressing plate comprises: a plurality of straight strip plates, disposed on the base in longitudinal and lateral directions; and a plurality of curved plates, disposed at corners of the base and connected with two adjacent straight strip plates.

25

35. A battery module, comprising: a battery accommodating assembly of any one of the claims 1-34; and batteries received in the receiving recesses.

36. A vehicle, comprising a battery module according to claim 35.

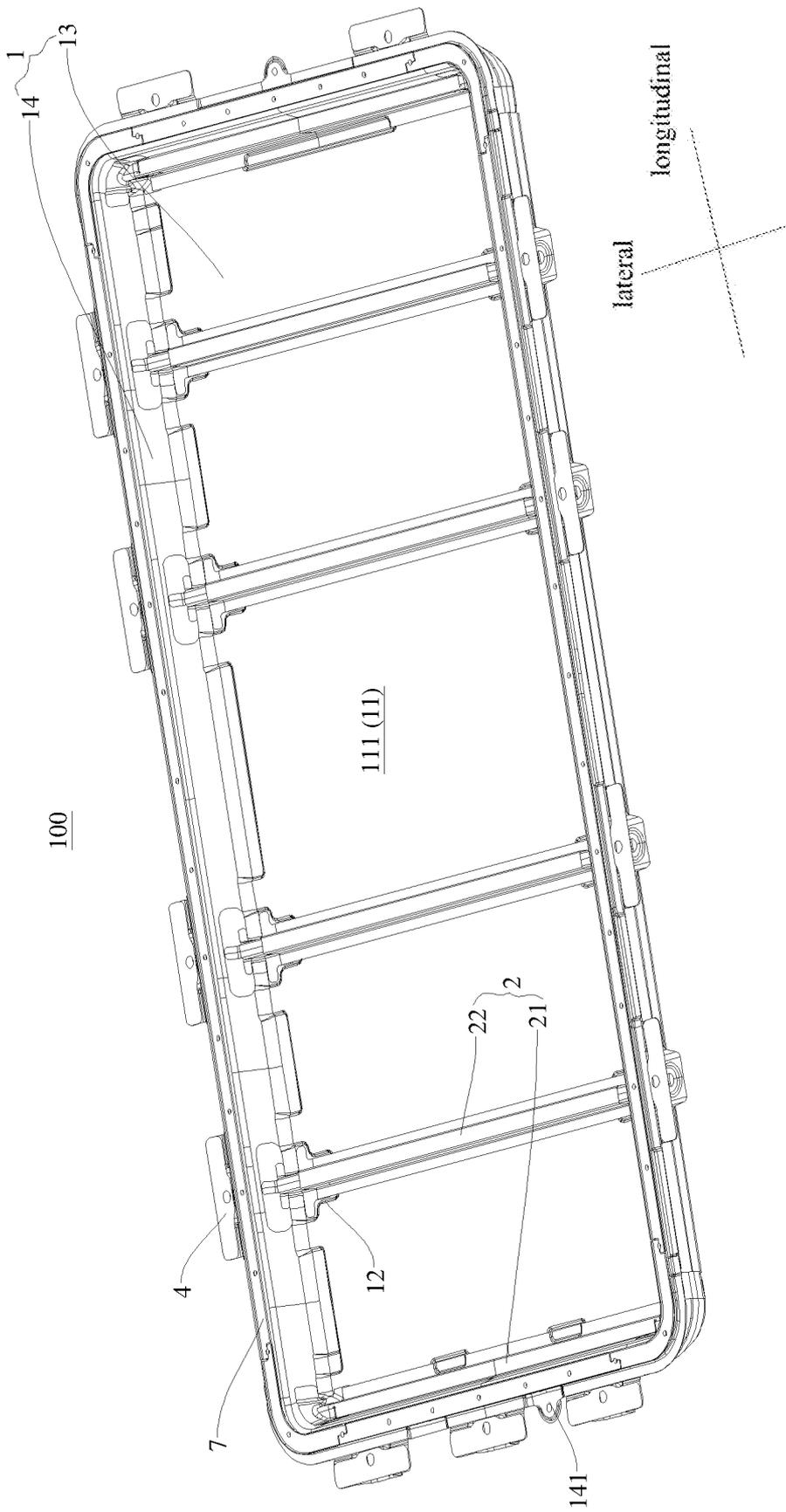


Fig. 1

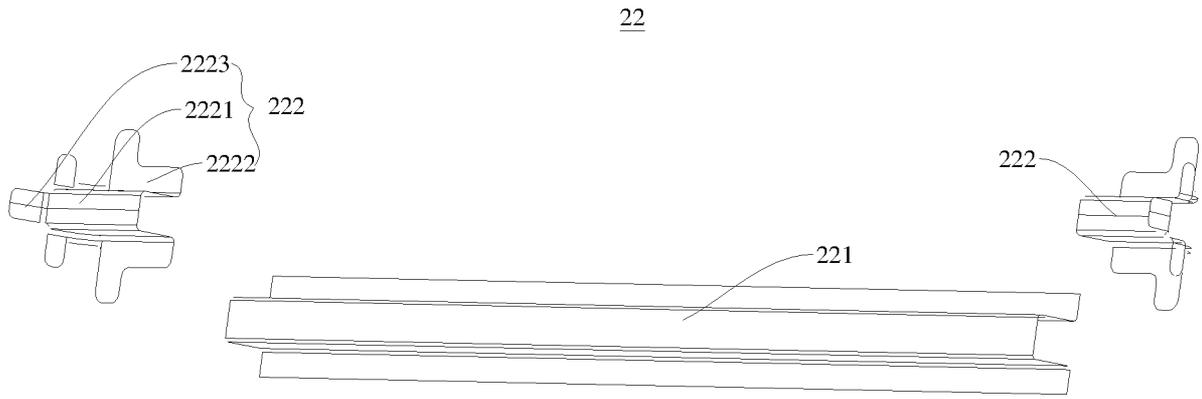


Fig. 2

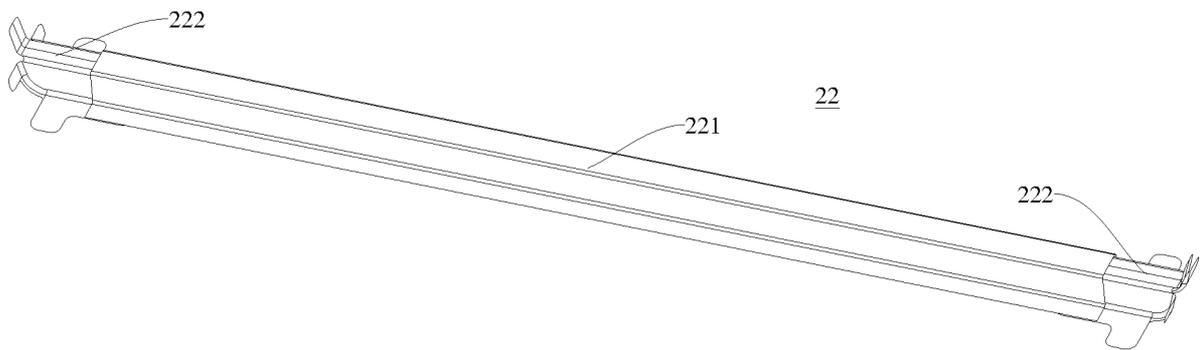


Fig. 3

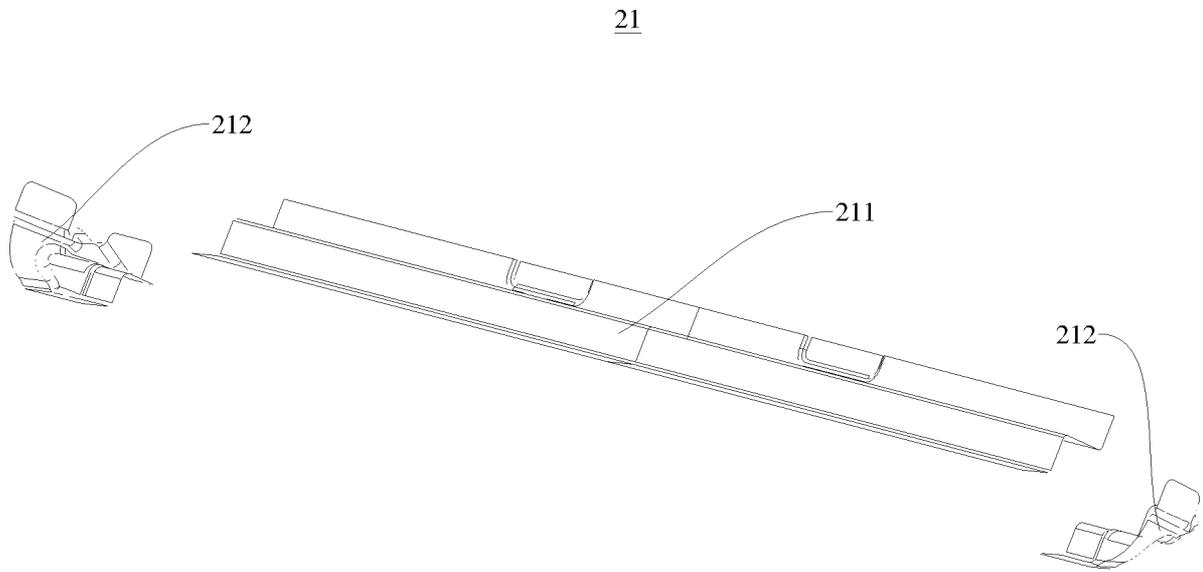


Fig. 4

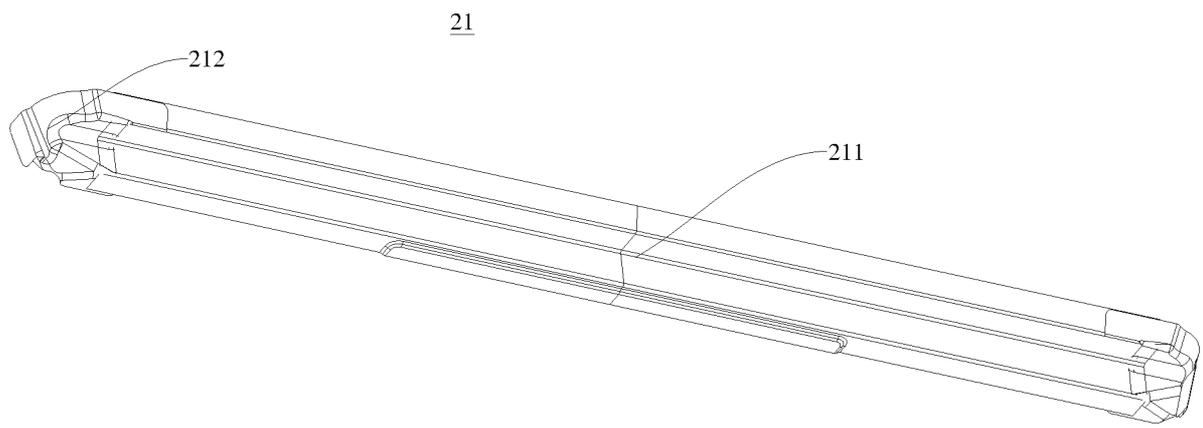


Fig. 5

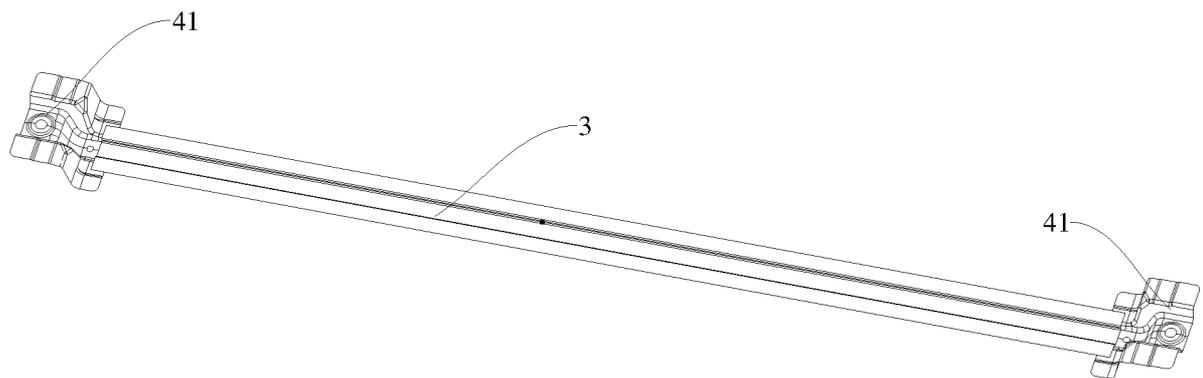


Fig. 6

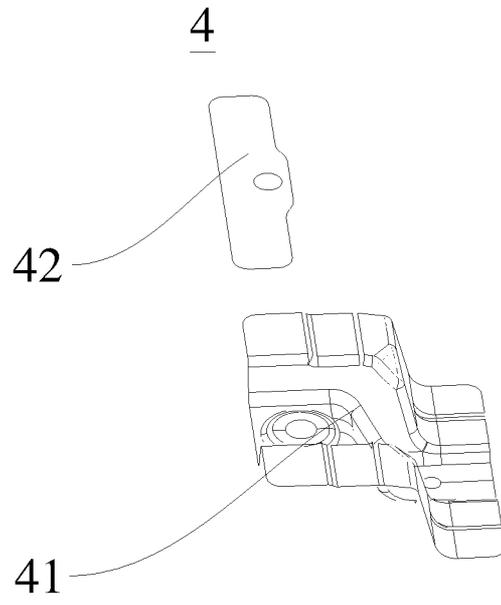


Fig. 7

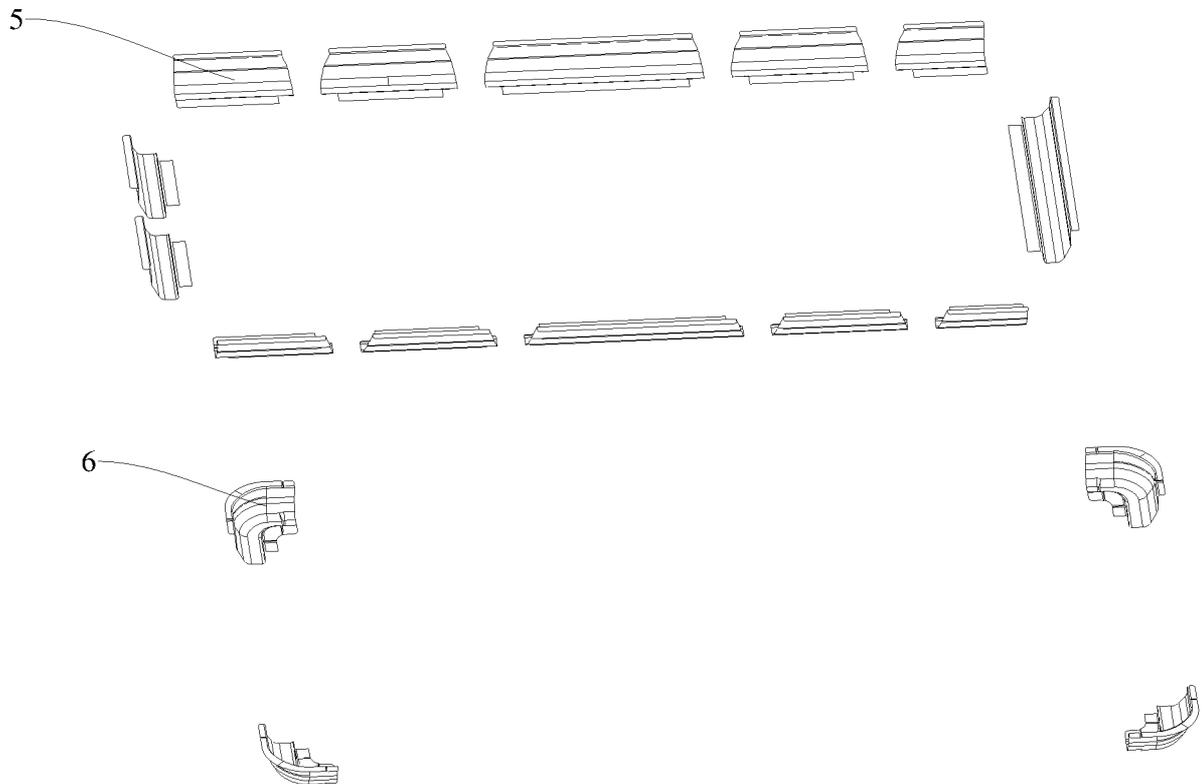


Fig. 8

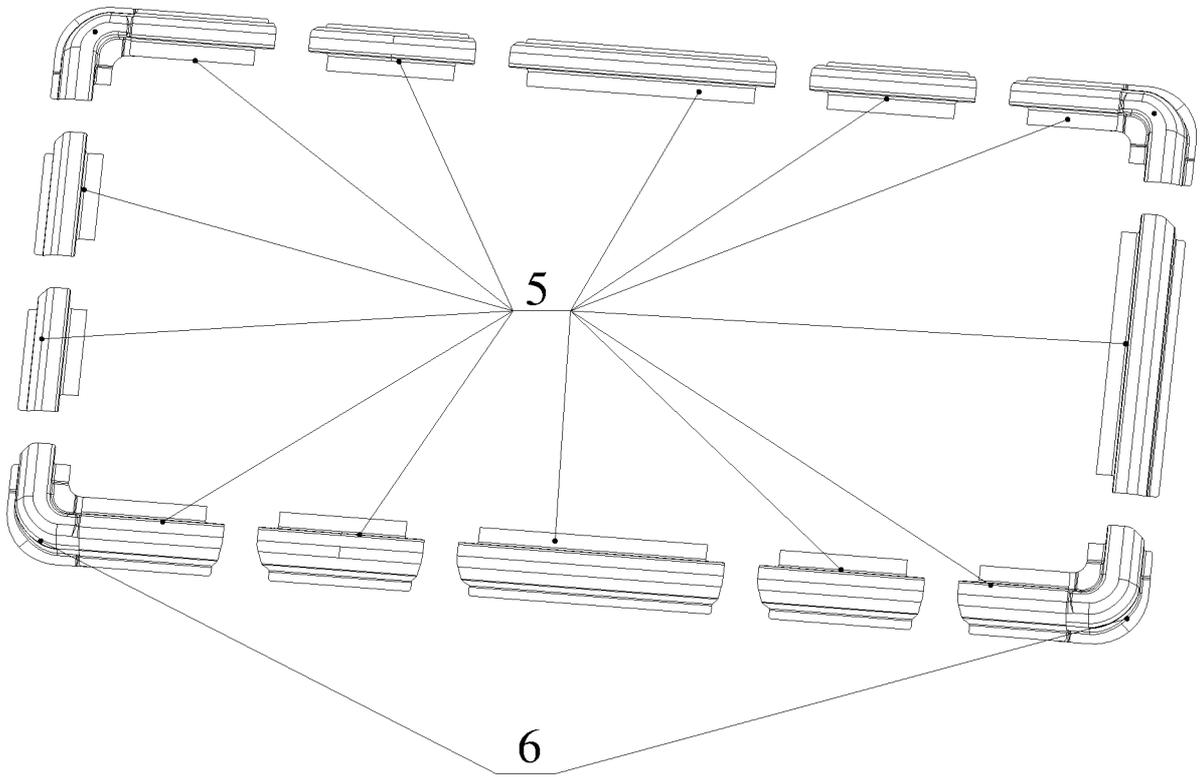


Fig. 9

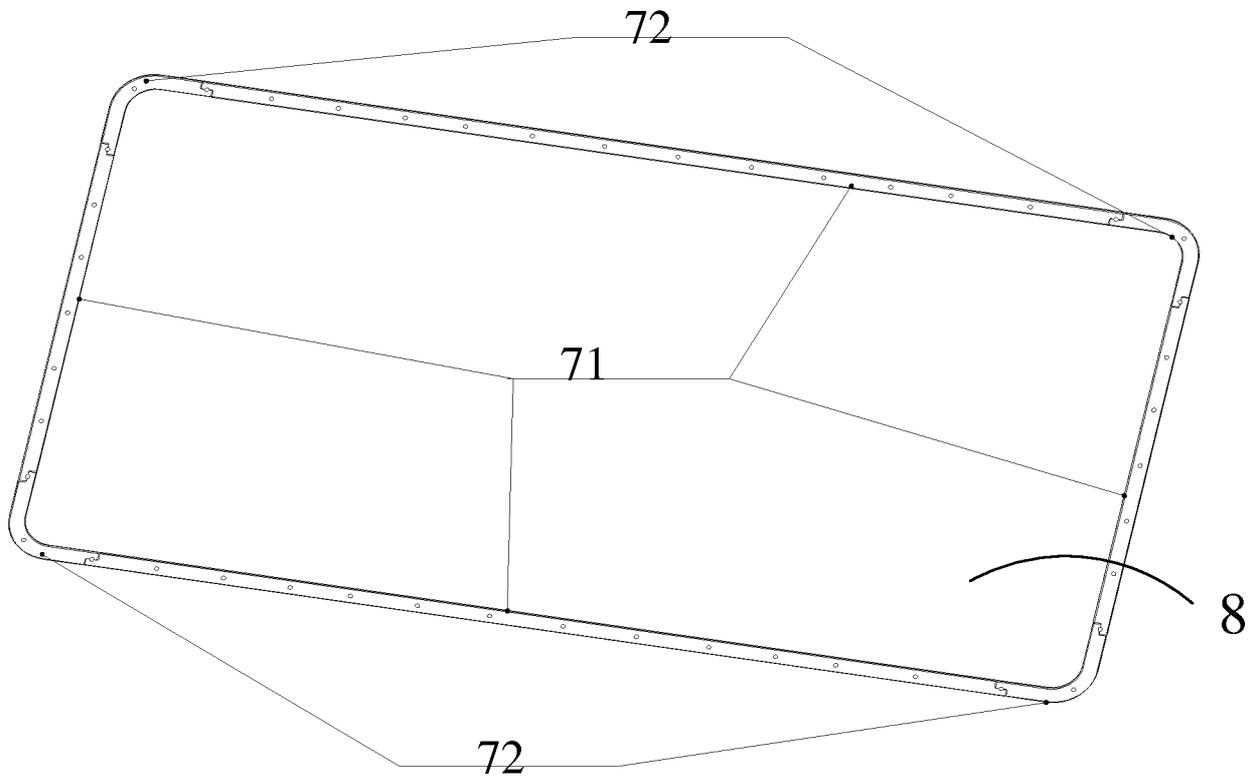


Fig. 10

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2015/075303

A. CLASSIFICATION OF SUBJECT MATTER		
H01M 2/02(2006.01)i; H01M 2/10(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)		
H01M		
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)		
CNABS, CNTXT, DWPI, SIPOABS:case, can, house, separat+, battery, cell, versatility, power		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN 102362371 A (ICEL SYSTEMS KOREA INC ET AL.) 22 February 2012 (2012-02-22) claims 1-12, description, paragraphs [0082]-[0092] and figures 3-12	1-36
A	CN 203192921 U (WANG, JIAXIAN) 11 September 2013 (2013-09-11) the whole document	1-36
A	CN 101246969 A (ZHUANG, BINGMING) 20 August 2008 (2008-08-20) the whole document	1-36
A	US 2005158613 A1 (TZU-SHAN LIU ET AL.) 21 July 2005 (2005-07-21) the whole document	1-36
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
* Special categories of cited documents:		
“A”	document defining the general state of the art which is not considered to be of particular relevance	“T” later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
“E”	earlier application or patent but published on or after the international filing date	“X” document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
“L”	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	“Y” document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
“O”	document referring to an oral disclosure, use, exhibition or other means	“&” document member of the same patent family
“P”	document published prior to the international filing date but later than the priority date claimed	
Date of the actual completion of the international search		Date of mailing of the international search report
03 June 2015		22 July 2015
Name and mailing address of the ISA/CN		Authorized officer
STATE INTELLECTUAL PROPERTY OFFICE OF THE P.R.CHINA 6, Xitucheng Rd., Jimen Bridge, Haidian District, Beijing 100088, China		WU,Junxia
Facsimile No. (86-10)62019451		Telephone No. (86-10)62089301

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2015/075303

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