Claims

1. A locating seat for locating and fixing a battery pack, the locating seat is used to accommodate a locating pin for fixing the battery pack, a side of the locating seat is provided with an opening and a slideway extending from the opening, the opening is used for the locating pin to enter the slideway; wherein the slideway is provided with a first limiting part, the first limiting part is used to restrict the locating pin from separating from the locating seat along the axial direction;

wherein the slideway has a supporting platform, the supporting platform is used to support the locating pin and the first limiting part is arranged on the supporting platform.

2. The locating seat according to claim 1, wherein the section of the first limiting part is one of an arc shape, a V shape or a trapezoid shape.

3. The locating seat according to any one of claims 1-2, wherein the first limiting part is a convex part or the first limiting part is a concave part;

preferably, the convex part has a first limiting surface and a second limiting surface, and the intersection of the first limiting surface and the second limiting surface is the highest point of the convex part;

and/or, the first limiting surface and the second limiting surface are flat or curved.

4. The locating seat according to any one of claims 1-3, wherein the locating seat further includes a cushion part, at least a part of the cushion part is located in the slideway, and when the locating seat is in the location state, the cushion part abuts against the wall surface of the locating pin;

preferably, the cushion part is an elastic pad.

5. A locating seat for locating and fixing the battery pack, the locating seat comprises a locating seat body, a side of the locating seat body is provided with an opening and a slideway extending from the opening, the opening is used for the locating pin of the battery pack to enter the slideway, wherein the locating seat further includes a clamping device which is arranged in the slideway, when the locating pin is at a location point, the clamping device abuts against the locating pin in the vertical direction.

6. The locating seat according to claim 5, wherein the clamping device is provided at the location point of the locating pin in the slideway.

7. The locating seat according to claim 5 or 6, wherein the clamping device includes a swing body and a fixed shaft, the fixed shaft is connected to the locating seat body, and the swing body can rotate around the fixed shaft; when the locating pin is at the location point, the swing body abuts against the outer wall of the locating pin;

preferably, the swing body has an arc surface, and the arc surface abuts against the outer wall of the locating pin;

and/or, when the locating pin does not enter the slideway, the swing body swings toward the entrance of the slideway;

and/or, the clamping device includes two clamping assemblies, each of the clamping assemblies includes one swing body and one fixed shaft, and the two clamping assemblies are symmetrically arranged on both sides of the slideway;

preferably, when the locating pin is located at the location point, the center line of the locating pin is coplanar with the center lines of the two fixed shafts;

preferably, the clamping device further includes an elastic part disposed between the locating seat body and the swing body, and the elastic part acts on the swing body so that when the swing body is not under force, an abutting surface of the swing body faces the direction into which the locating pin slides;

preferably, one end of the elastic part is inserted into the swing body, and the other end of the elastic part abuts against the locating seat body;

and/or, the elastic part is a spring.

8. The locating seat according to any one of claims 5-7, wherein the locating seat further includes a cushion part, at least a part of the cushion part is located in the slideway, and when the locating pin is at the location point, the cushion part abuts against the wall surface of the locating pin;

preferably, the cushion part is an elastic pad.

9. A locating pin, the locating pin is connected to the battery pack, wherein the locating pin is used to cooperate with the locating seat according to any one of claims 1-4, and the locating pin is provided with a second limiting part which is used to cooperate with the first limiting part to limit movement of the battery pack along the axial direction of the locating pin.

10. The locating pin according to claim 9, wherein the first limiting part is a

concave part, the second limiting part is a convex part, and the number of the second limiting parts is multiple, multiple convex parts are arranged along the axial direction of the locating pin, or the plural convex parts are arranged along the radial direction of the locating pin.

11. The locating pin according to claim 9 or 10, wherein the second limiting part and the locating pin are an integral structure;

or, the second limiting part is detachably connected to the locating pin;

preferably, the second limiting part is sleeved on the locating pin;

preferably, the second limiting part is rotatable relative to the locating pin;

and/or, the locating pin further includes a shaft stop provided on an end surface of the locating pin, which is used to prevent the second limiting part from moving in the axial direction of the locating pin;

and/or, the second limiting part is a shaft sleeve which is in transition fit with the slideway.

12. A locating mechanism for locating and fixing the battery pack, wherein the locating mechanism includes the locating seat according to any one of claims 1-4 and the locating pin according to any one of claims 9-11, the locating pin is arranged on the battery pack, and the locating mechanism is used to restrict the battery pack from separating from the locating seat along the axial direction of the locating pin;

or, the locating mechanism includes a locating pin and the locating seat according to any one of claims 5-8, the locating pin is arranged on the battery pack, and the locating pin enters the slideway from the opening.

13. A quick-change support assembly for installing the battery pack, the quick-change support assembly includes a quick-change support, wherein the quick-change support assembly further includes the locating mechanism according to claim 12, and the locating seat is arranged on the quick-change support.

14. A quick-change support assembly for installing the battery pack to an electric automobile, the quick-change support assembly includes a quick-change support, a locking mechanism, and a locating mechanism, the locking mechanism and the locating mechanism are both arranged on the quick-change support, wherein the locking mechanism is used to lock the battery pack with the electric automobile and restrict the

battery pack from moving in the driving direction of the electric automobile; the locating mechanism is used to restrict the battery pack from moving in the direction perpendicular to the driving direction in the horizontal plane and/or restrict the battery pack from moving in the vertical direction；

wherein the locating mechanism includes a slideway locating mechanism which is used to restrict the movement of the battery pack in the direction perpendicular to the driving direction in the horizontal plane;

the slideway locating mechanism comprises a slideway seat, which is connected to the quick-change support for cooperating with the slideway pin on the battery pack;

a side of the slideway seat is provided with an opening and a slideway extending from the opening, and the opening is used for allowing the slideway pin to enter the slideway;

the slideway of the slideway seat is provided with a first limiting part, the slideway pin is used to cooperate with the first limiting part to limit movement of the battery pack along the axial direction of the slideway pin.

15. The quick-change support assembly according to claim 14, wherein the slideway pin is provided with a second limiting part which is used to cooperate with the first limiting part to limit movement of the battery pack along the axial direction of the slideway pin;

preferably, the slideway seat is arranged on the left side or the right side of the quick-change support;

and/or, the first limiting part is a convex part or the first limiting part is a concave part;

and/or, the first limiting part is a concave part, the second limiting part is a convex part, and the number of the second limiting parts is multiple, multiple convex parts are arranged along the axial direction of the slideway pin, or the multiple convex parts are arranged along the radial direction of the slideway pin.

16. The quick-change support assembly according to any one of claims 14-15, wherein the locating mechanism includes a double swing locating mechanism which is used to restrict the movement of the battery pack in the vertical direction;

preferably, the double swing locating mechanism is symmetrically arranged on

one or both of the left side and the right side of the quick-change support;

and/or, the double swing locating mechanism comprises a double swing seat and a double swing pin, the double swing seat is connected to the quick-change support, and the double swing pin is connected to the battery pack;

a side of the double swing seat is provided with an opening and a slideway extending from the opening, and the opening is used for allowing the double swing pin to enter the slideway;

the double swing seat also includes a clamping device, which is arranged in the slideway, when the double swing pin is at a location point, the clamping device butts against the double swing pin in the vertical direction to limit the movement of the battery pack in the vertical direction.

17. The quick-change support assembly according to claim 16, wherein the clamping device is provided at the location point of the double swing pin in the slideway, the clamping device includes a swing body and a fixed shaft, the fixed shaft is connected to the double swing seat body, and the swing body can rotate around the fixed shaft; when the double swing pin is at the location point, the swing body abuts against the outer wall of the double swing;

preferably, the clamping device includes two clamping assemblies, each of the clamping assemblies includes one swing body and one fixed shaft, and the two clamping assemblies are symmetrically arranged on both sides of the slideway;

preferably, when the double swing pin is located at the location point, the center line of the double swing pin is coplanar with the center lines of the two fixed shafts;

and/or, the clamping device further includes an elastic part disposed between the double swing seat body and the swing body, the elastic part acts on the swing body so that when the swing body is not under force, the abutting surface of the swing body faces the direction into which the double swing pin slides; one end of the elastic part is inserted into the swing body, and the other end of the elastic part abuts against the double swing seat body.

18. An electric automobile, wherein it includes a battery pack and a quick-change support assembly according to any one of claims 13-17.