VEHICLE BODY ASSEMBLY OF VEHICLE, AND VEHICLE

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application is based on and claims priority to Chinese Patent Application No. 202410378348.8, filed on March 29, 2024, the entire contents of which are incorporated herein by reference.

FIELD

[0002] The present disclosure relates to, but is not limited to, the field of vehicles, and in particular, to a vehicle body assembly of a vehicle and a vehicle.

BACKGROUND

[0003] In the related art, a power battery and a body of a vehicle exist separately as two independent systems and are not associated with each other. Since both the power battery and the body have relatively large weights, a weight of the whole vehicle is heavy, which is unfavorable for improving endurance mileage of the vehicle.

SUMMARY

[0004] The following description is a summary of the subject matter described in detail herein. This summary is not intended to limit the scope of the claims.

[0005] An embodiment of the present disclosure is to provide a vehicle body assembly of a vehicle, which is beneficial to a lightweight design of the vehicle and an improvement in ride comfort of the vehicle.

[0006] The present disclosure further provides a vehicle having the above vehicle body assembly.

[0007] The vehicle body assembly of the vehicle according to the present disclosure includes: a vehicle main body having a mounting notch, in which the vehicle main body includes a sill beam defining a receiving cavity; a battery pack disposed at the vehicle main body, shielding the mounting notch, and configured to form at least part of a floor of the vehicle body assembly; a sealing assembly and a dash panel connected to the sealing assembly, in which the dash panel and the sealing assembly form an annular structure, at least part of the sealing assembly and at least part of the dash panel being both located between the vehicle main body and the battery pack to seal a gap between the vehicle main body and the battery pack, and the sealing assembly being connected to the sill beam; and a reinforcement beam disposed in the receiving cavity.

[0008] For the vehicle body assembly according to the present disclosure, by configuring the battery pack to form the at least part of the floor of the vehicle body assembly, a part of a floor of a conventional body can be eliminated, which is beneficial to the lightweight design of the vehicle and an improvement in endurance mileage of the vehicle. Moreover, the gap between the vehicle main body and the battery pack can be sealed through the sealing assembly and the dash panel, which can improve sealing performance of a passenger compartment, and thus is beneficial to the improvement of the ride comfort of the vehicle.

[0009] The vehicle according to the present disclosure includes the vehicle body assembly as described above.

[0010] For the vehicle according to the present disclosure, by configuring the battery pack to form the at least part of the floor of the vehicle body assembly, a part of the floor of the conventional body can be eliminated, which is beneficial to the lightweight design of the vehicle and the improvement of the endurance mileage of the vehicle. Moreover, the gap between the vehicle main body and the battery pack can be sealed through the sealing assembly and the dash panel, which can improve the sealing performance of the passenger compartment, and thus is beneficial to the improvement of the ride comfort of the vehicle.

[0011] Additional aspects and advantages of the present disclosure will be provided in part in the following description, or will become apparent in part from the following description, or can be learned from practicing of the present disclosure.

[0012] Other aspects may be apparent upon reading and understanding the drawings and

detailed descriptions.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] FIG. 1 is a top view of a vehicle body assembly according to an embodiment of the present disclosure.

[0014] FIG. 2 is a bottom view of a vehicle body assembly according to an embodiment of the present disclosure.

[0015] FIG. 3 is a schematic assembly view of a sealing assembly and a dash panel according to an embodiment of the present disclosure.

[0016] FIG. 4 is an enlarged view of part U in FIG. 3.

[0017] FIG. 5 is an enlarged view of part V in FIG. 3.

[0018] FIG. 6 is a schematic cross-sectional view of a vehicle body assembly according to an embodiment of the present disclosure.

[0019] FIG. 7 is a schematic enlarged view of a partial structure in FIG. 3.

[0020] FIG. 8 is a schematic assembly view of partial structures of a battery pack and a sealing assembly according to an embodiment of the present disclosure.

[0021] FIG. 9 is a schematic view of a vehicle body assembly according to an embodiment of the present disclosure.

[0022] FIG. 10 is a schematic view of a vehicle body assembly (without omitting a second connection member) from another angle according to an embodiment of the present disclosure.

[0023] FIG. 11 is a schematic view of a vehicle body assembly (with a second connection member omitted) from another angle according to an embodiment of the present disclosure.

[0024] FIG. 12 is a schematic view of a vehicle body assembly from another angle according to an embodiment of the present disclosure.

[0025] FIG. 13 is a rear view of a vehicle body assembly according to an embodiment of the present disclosure.

[0026] FIG. 14 is a bottom view of a vehicle body assembly according to an embodiment of the present disclosure.

[0027] FIG. 15 is a left view of a vehicle body assembly according to an embodiment of

the present disclosure.

[0028] FIG. 16 is a schematic assembly view of a vehicle body assembly and a seat mounting cross beam according to an embodiment of the present disclosure.

[0029] FIG. 17 is an enlarged view of part A in FIG. 16.

[0030] FIG. 18 is a schematic view of a vehicle body assembly according to an embodiment of the present disclosure.

[0031] FIG. 19 is a schematic view of a vehicle body assembly according to an embodiment of the present disclosure.

[0032] FIG. 20 is a schematic cross-sectional view of partial structures of a vehicle body assembly and a seat mounting cross beam according to an embodiment of the present disclosure.

[0033] FIG. 21 is a schematic cross-sectional view of a vehicle body assembly according to an embodiment of the present disclosure.

[0034] FIG. 22 is a schematic assembly view of a middle channel, a dash middle cross beam, a longitudinal beam, and a dash panel according to an embodiment of the present disclosure.

[0035] FIG. 23 is a schematic assembly view of a middle channel, a dash middle cross beam, a longitudinal beam, and a dash panel from another angle according to an embodiment of the present disclosure.

[0036] FIG. 24 is a schematic assembly view of a middle channel, a dash middle cross beam, a longitudinal beam, and a dash panel (with the dash panel partially omitted) according to an embodiment of the present disclosure.

[0037] FIG. 25 is a schematic assembly view of a middle channel, a dash middle cross beam, a longitudinal beam, and a dash panel (with the dash panel partially omitted) from another angle according to an embodiment of the present disclosure.

[0038] FIG. 26 is a schematic view of a middle channel according to an embodiment of the present disclosure.

[0039] FIG. 27 is a schematic view of a middle channel from another angle according to an embodiment of the present disclosure.

[0040] FIG. 28 is a schematic view of a middle channel from yet another angle according to an embodiment of the present disclosure.

[0041] FIG. 29 is a cross-sectional view taken along line A-A in FIG. 28.

[0042] FIG. 30 is a schematic structural view of a vehicle body assembly according to an embodiment of the present disclosure.

[0043] FIG. 31 is a side view of a vehicle body assembly according to an embodiment of the present disclosure.

[0044] FIG. 32 is a schematic structural view of a structural reinforcement member according to an embodiment of the present disclosure.

[0045] FIG. 33 is a schematic structural view of an energy absorption box according to an embodiment of the present disclosure.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0046] Embodiments of the present disclosure will be described in detail below with reference to examples thereof as illustrated in the accompanying drawings, throughout which same or similar elements, or elements having same or similar functions, are denoted by same or similar reference numerals. The embodiments described below with reference to the drawings are illustrative only, and are intended to explain, rather than limiting, the present disclosure.

[0047] A vehicle body assembly 100 of a vehicle according to the embodiments of the present disclosure is described below with reference to FIG. 1 to FIG. 33.

[0048] As shown in FIG. 1 to FIG. 8, the vehicle body assembly 100 of the vehicle according to the embodiments of the present disclosure includes a vehicle main body 6, a battery pack 5, a sealing assembly 7, a dash panel 621, and a reinforcement beam 42.

[0049] The vehicle main body 6 has a mounting notch 61 that may extend through the vehicle main body 6 in a height direction of the vehicle main body 6 (i.e., a Z-direction shown in FIG. 6). The battery pack 5 is disposed at the vehicle main body 6, shields the mounting notch 61, and is configured to form at least part of a floor of the vehicle body assembly 100. In some embodiments of the present disclosure, at least part of a structure of the battery pack 5 may be located in the mounting notch 61. Moreover, a top cover of the battery pack 5 may be configured to form the at least part of the floor of the vehicle body assembly 100. By providing the vehicle main body 6 with the mounting notch 61 and configuring the battery pack 5 to form

the at least part of the floor of the vehicle body assembly 100, a part of a floor of a conventional body can be eliminated, which can reduce a weight of the vehicle main body 6, and is beneficial to a lightweight design of the vehicle and an improvement in endurance mileage of the vehicle.

[0050] In a first direction of the vehicle main body 6 (i.e., an X-direction shown in FIG. 1, i.e., a length direction of the vehicle), the dash panel 621 is located at a front side of the sealing assembly 7, and is connected to the sealing assembly 7 to form an annular structure. At least part of the sealing assembly 7 is located between the vehicle main body 6 and the battery pack 5. In some embodiments of the present disclosure, a part of the sealing assembly 7 is located between the vehicle main body 6 and the battery pack 5. In some embodiments of the present disclosure, the sealing assembly 7 is located between the vehicle main body 6 and the battery pack 5. The sealing assembly 7 is capable of sealing a gap between the vehicle main body 6 and the battery pack 5.

[0051] At least part of the dash panel 621 is located between the vehicle main body 6 and the battery pack 5. In some embodiments of the present disclosure, a part of the dash panel 621 is located between the vehicle main body 6 and the battery pack 5. In some embodiments of the present disclosure, the dash panel 621 is located between the vehicle main body 6 and the battery pack 5. The dash panel 621 is capable of sealing the gap between the vehicle main body 6 and the battery pack 5.

[0052] It should be explained that since the battery pack 5 is configured to form the at least part of the floor of the vehicle body assembly 100, a gap may exist between the battery pack 5 and the vehicle main body 6. This gap between the battery pack 5 and the vehicle main body 6 causes a passenger compartment to communicate with an outside world through the gap, resulting in significant noise, vibration and the like perceived by a passenger in the passenger compartment, and also allowing a large amount of dust to enter the passenger compartment through the gap between the battery pack 5 and the vehicle main body 6, which impairs ride comfort of the passenger. By sealing the gap between the vehicle main body 6 and the battery pack 5 through the sealing assembly 7 and the dash panel 621, sealing performance of the passenger compartment can be improved, which can reduce the noise and vibration perceived by the passenger in the passenger compartment, can prevent a large amount of dust from entering the passenger compartment through the gap between the battery pack 5 and the vehicle

main body 6, and is beneficial to an improvement in the ride comfort of the vehicle.

[0053] Moreover, by connecting the sealing assembly 7 and the dash panel 621 to form the annular structure, the gap between the vehicle main body 6 and the battery pack 5 can be reliably sealed.

[0054] The vehicle main body 6 includes a sill beam 40 defining a receiving cavity 41. The reinforcement beam 42 is disposed in the receiving cavity 41. The sealing assembly 7 is connected to the sill beam 40. By connecting the sealing assembly 7 to the sill beam 40, the sealing assembly 7 can be connected to the vehicle main body 6, which can allow the sealing assembly 7 to be firmly mounted, thereby enabling the sealing assembly 7 to reliably seal the gap between the vehicle main body 6 and the battery pack 5 and improving the sealing performance of the passenger compartment. By providing the reinforcement beam 42 in the receiving cavity 41 of the sill beam 40, it is possible to improve a structural strength of the sill beam 40, improve side collision performance of the vehicle, and reduce a probability of deformation of the sealing assembly 7 in the event of a side collision of the vehicle, and it is beneficial to an improvement in operational reliability of the sealing assembly 7. Moreover, a probability of the battery pack 5 being crushed in the event of a side collision of the vehicle can be reduced, which is beneficial to an improvement in safety of the vehicle.

[0055] Therefore, by configuring the battery pack 5 to form the at least part of the floor of the vehicle body assembly 100, a part of the floor of the conventional body can be eliminated, which is beneficial to the lightweight design of the vehicle and the improvement of the endurance mileage of the vehicle. Moreover, the gap between the vehicle main body 6 and the battery pack 5 can be sealed through the sealing assembly 7 and the dash panel 621, which can improve the sealing performance of the passenger compartment, thereby making it beneficial to the improvement of the ride comfort of the vehicle.

[0056] In some embodiments of the present disclosure, as shown in FIG. 1 to FIG.8, the annular structure has one of a sealing protrusion 71 and a sealing groove 56, and the battery pack 5 has the other one of the sealing protrusion 71. The sealing protrusion 71 and the sealing groove 56 are engaged in a sealing manner.

[0057] In some embodiments of the present disclosure, with reference to FIG. 8, the sealing protrusion 71 is formed at the annular structure, the battery pack 5 has the sealing groove 56,

and the sealing protrusion 71 and the sealing groove 56 are engaged in a sealing manner. For example, the annular structure has a sealing protrusion 71 protruding towards the battery pack 5, the battery pack 5 has a sealing groove 56 recessed in a direction away from the annular structure, and the sealing protrusion 71 and the sealing groove 56 are engaged in a sealing manner.

[0058] In some embodiments of the present disclosure, the annular structure has the sealing groove 56, the battery pack 5 is provided with the sealing protrusion 71, and the sealing protrusion 71 and the sealing groove 56 are engaged in a sealing manner. For example, the battery pack 5 has a sealing protrusion 71 protruding towards the annular structure, the annular structure has a sealing groove 56 recessed in a direction away from the battery pack 5, and the sealing protrusion 71 and the sealing groove 56 are engaged in a sealing manner.

[0059] In some embodiments of the present disclosure, with reference to FIG. 8, a foam seal may be sandwiched between the sealing protrusion 71 and the sealing groove 56.

[0060] In some embodiments of the present disclosure, at least part of the sealing protrusion 71 is located in the sealing groove 56.

[0061] In some embodiments of the present disclosure, in the case of that the foam seal is sandwiched between the sealing protrusion 71 and the sealing groove 56, the sealing protrusion 71 may be partially located in the sealing groove 56. Alternatively, the sealing protrusion 71 may be completely located in the sealing groove 56. Alternatively, the sealing protrusion 71 may not be located in the sealing groove 56.

[0062] By providing the annular structure with one of the sealing protrusion 71 and the sealing groove 56 and providing the battery pack 5 with the other one of the sealing protrusion 71 and the sealing groove 56, positioning of relative positions of the battery pack 5 and the annular structure can be facilitated, which can reduce assembly difficulty of the battery pack 5 and the annular structure. Moreover, with such an arrangement, the sealing performance can be further improved.

[0063] In some embodiments of the present disclosure, the battery pack 5 may serve as a front floor of the vehicle body assembly 100.

[0064] In some embodiments of the present disclosure, the battery pack 5 may serve as a front floor of the vehicle body assembly 100.

[0065] In some embodiments of the present disclosure, as shown in FIG. 8, the vehicle body assembly 100 may further include a flexible sealing member 55 sandwiched between the sealing protrusion 71 and the sealing groove 56.

[0066] In some embodiments of the present disclosure, at least part of the flexible sealing member 55 may be located in the sealing groove 56. For example, the entire structure of the flexible sealing member 55 is located in the sealing groove 56. The flexible sealing member 55 is compressed (or may be understood as being squeezed) between the sealing protrusion 71 and the sealing groove 56. By disposing the flexible sealing member 55 between the sealing protrusion 71 and the sealing groove 56, the flexible sealing member 55 is compressed by the battery pack 5 and the annular structure, and the compressed flexible sealing member 55 can achieve an excellent sealing effect. Moreover, by locating the at least part of the flexible sealing member 55 in the sealing groove 56, the flexible sealing member 55 can be firmly disposed, which can reduce a probability of displacement of the flexible sealing member 55, and thus can effectively seal the gap between the vehicle main body 6 and the battery pack 5.

[0067] In some embodiments of the present disclosure, the at least part of the sealing protrusion 71 is located in the sealing groove 56.

[0068] In some embodiments of the present disclosure, a partial structure or the entire structure of the sealing protrusion 71 is located in the sealing groove 56. With such an arrangement, the positioning of the relative positions of the battery pack 5 and the annular structure can be facilitated, and the assembly difficulty of the battery pack 5 and the annular structure can be reduced. Moreover, with such an arrangement, the sealing performance can be further improved.

[0069] In some embodiments of the present disclosure, each of the sealing protrusion 71 and the sealing groove 56 is constructed as an annular shape.

[0070] It should be explained that the dash panel 621 is connected to the sealing assembly 7 to form the annular structure. Moreover, each of the sealing protrusion 71 and the sealing groove 56 is constructed as an annular shape. That is, structural forms of the sealing protrusion 71 and the sealing groove 56 are adapted to the annular structure. By constructing each of the sealing protrusion 71 and the sealing groove 56 as an annular shape, an engagement and sealing effect between the sealing protrusion 71 and the sealing groove 56 can be improved, and the

sealing performance of the passenger compartment can be enhanced, which is beneficial to the improvement of the ride comfort of the vehicle.

[0071] As a specific embodiment of the present disclosure, the annular structure is provided with the sealing protrusion 71, the battery pack 5 has the sealing groove 56, and a partial structure of the sealing protrusion 71 is located in the sealing groove 56. Moreover, the flexible sealing member 55 is sandwiched and compressed between the sealing protrusion 71 and the sealing groove 56. In an exemplary embodiment of the present disclosure, the flexible sealing member 55 is compressed in the sealing groove 56. With such an arrangement, the engagement and sealing effect between the sealing protrusion 71 and the sealing groove 56 can be effectively improved.

[0072] In some embodiments of the present disclosure, as shown in FIG. 7, in the height direction of the vehicle main body 6 (i.e., the Z-direction shown in FIG. 6), the battery pack 5 may be disposed below the sealing assembly 7, and may be sealed with a lower surface of the sealing assembly 7. In some embodiments of the present disclosure, an upper surface of the battery pack 5 may be sealed with the lower surface of the sealing assembly 7. With such an arrangement, a relative position between the sealing assembly 7 and the battery pack 5 can be made reasonable, which is beneficial to an improvement in a sealing effect of the sealing assembly 7.

[0073] In some embodiments of the present disclosure, a size of the sealing protrusion 71 may be adapted to a size of the sealing groove 56, which can make the sealing protrusion 71 and the sealing groove 56 engaged in a sealing manner, and also achieve the sealing between the upper surface of the battery pack 5 and the lower surface of the sealing assembly 7.

[0074] In some embodiments of the present disclosure, as shown in FIG. 6 and FIG. 7, the sealing assembly 7 may be located in the mounting notch 61. In the height direction of the vehicle main body 6 (i.e., the Z-direction shown in FIG. 6), a distance between the sealing assembly 7 and an upper end of the mounting notch 61 may be smaller than a distance between the sealing assembly 7 and a lower end of the mounting notch 61.

[0075] By disposing the sealing assembly 7 in the mounting notch 61, an arrangement position of the sealing assembly 7 can be made reasonable. Moreover, by setting the distance between the sealing assembly 7 and the upper end of the mounting notch 61 to be smaller than

the distance between the sealing assembly 7 and the lower end of the mounting notch 61, the sealing assembly 7 can be located at an upper-middle part of the mounting notch 61, which can provide a larger space for the battery pack 5, and is beneficial to an increase in an electrical capacity of the battery pack 5 and thus the improvement of the endurance mileage of the vehicle.

[0076] In some embodiments of the present disclosure, as shown in FIG. 1 to FIG.3, the sealing assembly 7 includes two side sealing members 73 and a rear sealing member 75. The two side sealing members 73 are arranged opposite to each other and spaced apart from each other in a second direction of the vehicle main body 6 (i.e., a Y-direction shown in FIG. 1, i.e., a width direction of the vehicle). The two side sealing members 73 may be a left sealing member 74 and a right sealing member 76. The dash panel 621, one of the two side sealing members 73, the rear sealing member 75, and the other one of the two side sealing members 73 may be sequentially connected end to end. That is, the dash panel 621, the left sealing member 74, the rear sealing member 75, and the right sealing member 76 may be sequentially connected end to end.

[0077] In an exemplary embodiment of the present disclosure, an end of the dash panel 621 may be connected to an end of the left sealing member 74, the other end of the left sealing member 74 may be connected to an end of the rear sealing member 75, the other end of the rear sealing member 75 may be connected to an end of the right sealing member 76, and the other end of the right sealing member 76 may be connected to the other end of the dash panel 621. At least one of the left sealing member 74, the rear sealing member 75, or the right sealing member 76 may be connected to the vehicle main body 6. In some embodiments of the present disclosure, the left sealing member 74, the rear sealing member 75, and the right sealing member 76 may each be connected to the vehicle main body 6.

[0078] With such an arrangement, a structural form of the sealing assembly 7 and a structural form of the dash panel 621 can be made reasonable. Moreover, by connecting the at least one of the left sealing member 74, the rear sealing member 75, or the right sealing member 76 to the vehicle main body 6, a firm connection between the sealing assembly 7 and the vehicle main body 6 can be achieved.

[0079] In some embodiments of the present disclosure, the left sealing member 74, the rear sealing member 75, and the right sealing member 76 may be formed as an integral piece. In

some embodiments of the present disclosure, the left sealing member 74, the rear sealing member 75, and the right sealing member 76 may be formed as separate components.

[0080] In some embodiments of the present disclosure, each of the dash panel 621, the left sealing member 74, the rear sealing member 75, and the right sealing member 76 is provided with the sealing protrusion 71 or the sealing groove 56, such that the sealing protrusion 71 or the sealing groove 56 is constructed as an annular shape.

[0081] With reference to FIG. 3 to FIG. 5, each of the two side sealing members 73 includes a side body 731 and a side connection flange 732 connected to the side body 731. The side body 731 and the side connection flange 732 may be formed as an integral piece. The side body 731 is provided with the sealing protrusion 71 or the sealing groove 56, and the side connection flange 732 is capable of being connected to the sill beam 40 of the vehicle main body 6.

[0082] The left sealing member 74 may include a side body 731 and a side connection flange 732 connected to the side body 731. The right sealing member 76 may include a side body 731 and a side connection flange 732 connected to the side body 731. The side body 731 is provided with the sealing protrusion 71 or the sealing groove 56, and the side connection flange 732 is capable of being connected to the sill beam 40 of the vehicle main body 6. In an exemplary embodiment of the present disclosure, the sill beam 40 includes a left sill beam 47 and a right sill beam 48. The side connection flange 732 of the left sealing member 74 is capable of being connected to the left sill beam 47, and the side connection flange 732 of the right sealing member 76 is capable of being connected to the right sill beam 48. With such an arrangement, the side sealing member 73 and the sill beam 40 can be mounted firmly (such as by welding), and the firm connection between the sealing assembly 7 and the vehicle main body 6 can be achieved.

[0083] The dash panel 621 may be connected to a front compartment 62, and the rear sealing member 75 may be connected to a rear floor 63. With such an arrangement, it is possible to improve the firmness of the connection between the sealing assembly 7 and the vehicle main body 6, reduce a probability of separation of the sealing assembly 7 from the vehicle main body 6, and thus reliably seal the gap between the vehicle main body 6 and the battery pack 5.

[0084] In some embodiments of the present disclosure, the sealing assembly 7 may be connected to the vehicle main body 6 by welding.

[0085] In some embodiments of the present disclosure, the side connection flange 732 may extend in the height direction of the vehicle main body 6 (i.e., the Z-direction shown in FIG. 6) or in the second direction of the vehicle main body 6 (i.e., the Y-direction shown in FIG. 1). In some embodiments of the present disclosure, the left sealing member 74 may be disposed at a side of the left sill beam 47 close to the right sill beam 48, and the right sealing member 76 may be disposed at a side of the right sill beam 48 close to the left sill beam 47.

[0086] In some embodiments of the present disclosure, as shown in FIG. 1 and FIG. 2, the vehicle main body 6 may include a front compartment 62, a rear floor 63, a left sill beam 47, and a right sill beam 48. The front compartment 62 may be connected to the left sill beam 47 and the right sill beam 48, and the rear floor 63 may be connected to the left sill beam 47 and the right sill beam 48. In the first direction of the vehicle main body 6 (i.e., the X-direction shown in FIG. 1), the front compartment 62 may be disposed in front of the rear floor 63. Moreover, both the left sill beam 47 and the right sill beam 48 may be disposed between the front compartment 62 and the rear floor 63. Both the left sill beam 47 and the right sill beam 48 may extend in the first direction of the vehicle main body 6. In the second direction of the vehicle main body 6 (i.e., the Y-direction shown in FIG. 1), the left sill beam 47 and the right sill beam 48 may be spaced apart from each other. The front compartment 62, the rear floor 63, the left sill beam 47, and the right sill beam 48 may together define the mounting notch 61. With such an arrangement, a size of the mounting notch 61 can be made relatively large, which is beneficial to the lightweight design of the vehicle. Moreover, by making the front compartment 62, the rear floor 63, the left sill beam 47, and the right sill beam 48 together define the mounting notch 61, a reasonable position of the mounting notch 61 can be achieved, which can achieve a reasonable arrangement position of the battery pack 5 and reduce an impact of the battery pack 5 on a trunk space of the vehicle.

[0087] In some embodiments of the present disclosure, as shown in FIG. 6 and FIG. 7, the battery pack 5 may be provided with a plurality of battery pack connection portions 53 that may be connected to the corresponding left sill beam 47 and right sill beam 48, respectively. In an exemplary embodiment of the present disclosure, the battery pack 5 may be provided with two battery pack connection portions 53. In the second direction of the vehicle main body 6 (i.e., a Y-direction shown in FIG. 6), the two battery pack connection portions 53 are located at left

and right sides of the battery pack 5, respectively. That is, one of the two battery pack connection portions 53 is disposed close to the left sill beam 47, and the other one of the two battery pack connection portions 53 is disposed close to the right sill beam 48. The battery pack connection portion 53 disposed close to the right sill beam 48 may be connected to the right sill beam 48, and the battery pack connection portion 53 disposed close to the left sill beam 47 may be connected to the left sill beam 47.

[0088] In some embodiments of the present disclosure, as shown in FIG. 6 and FIG. 7, the battery pack connection portion 53 may be located below the sill beam 40, and may be connected to the sill beam 40 through bolts. In some embodiments of the present disclosure, the battery pack connection portion 53 may be connected to an inner sill panel 43 of the sill beam 40 through bolts. With such an arrangement, the battery pack 5 and the sill beam 40 can be connected together, and the firmness of the mounting of the battery pack 5 can be improved.

[0089] In some embodiments of the present disclosure, the left and right sides of the battery pack 5 may be connected to the sill beam 40, a front side of the battery pack 5 may be connected to a bottom of a vehicle dash, and a rear side of the battery pack 5 may be connected to the rear floor 63 of the vehicle. In some embodiments of the present disclosure, the battery pack 5 and the vehicle main body 6 may be connected through bolts.

[0090] In some embodiments of the present disclosure, the side connection flange 732 extends with an extension dimension E1 in the height direction of the vehicle main body 6 (i.e., the Z-direction shown in FIG. 6), where $10mm \leq E1 \leq 18mm$. That is, the extension dimension of the side connection flange 732 may be any value ranging from 10 mm to 18 mm. For example, the extension dimension of the side connection flange 732 may be, but not limited to, 10 mm, 14 mm, 18 mm, or the like. In some embodiments of the present disclosure, the side connection flange 732 may extend upward, and the upward extension may be a vertical upward extension or an oblique upward extension. In some embodiments of the present disclosure, the side connection flange 732 may extend downward, and the downward extension may be a vertical downward extension or an oblique downward extension. With such an arrangement, the extension dimension of the side connection flange 732 can be made reasonable, and a connection strength between the side sealing member 73 and the sill beam 40 can be reliably improved, and a probability of separation of the side sealing member 73 from the sill beam 40

can be reduced.

[0091] Any two of the first direction of the vehicle main body 6 (i.e., the X-direction shown in FIG. 1), the second direction of the vehicle main body 6 (i.e., the Y-direction shown in FIG. 1), and the height direction of the vehicle main body 6 (i.e., a Z-direction shown in FIG. 1) are perpendicular to each other.

[0092] In some embodiments of the present disclosure, with reference to FIG. 3 and FIG. 4, the dash panel 621 may include: a dash body 6211 and a dash flange 6212 connected to the dash body 6211. The dash body 6211 and the dash flange 6212 may be formed as an integral piece. The dash body 6211 is provided with the sealing protrusion 71 or the sealing groove 56. The dash flange 6212 is adapted to be connected to an A-pillar of the vehicle, and may be partially sandwiched between the side connection flange 732 and the A-pillar.

[0093] The dash panel 621 may be disposed at a front side of the side sealing member 73 in the first direction of the vehicle main body 6 (i.e., the X-direction shown in FIG. 1). The dash flange 6212 may be disposed at each of two sides of the dash body 6211 in the second direction of the vehicle main body 6 (i.e., the Y-direction shown in FIG. 1). A left dash flange 6212 may be connected to a left A-pillar of the vehicle, and may be partially sandwiched between the side connection flange 732 of the left sealing member 74 and the left A-pillar of the vehicle. A right dash flange 6212 may be connected to a right A-pillar of the vehicle, and may be partially sandwiched between the side connection flange 732 of the right sealing member 76 and the right A-pillar of the vehicle. The dash flange 6212, the A-pillar, and the side connection flange 732 may be connected through spot welding or a structural adhesive.

[0094] With such an arrangement, the firmness of the connection between the sealing assembly 7 and the vehicle main body 6 can be improved, and the firmness of the connection between the dash panel 621 and the side sealing member 73 can also be enhanced.

[0095] In the first direction of the vehicle main body 6 (i.e., the X-direction shown in FIG. 1), a length of the dash flange 6212 sandwiched between the side connection flange 732 and the A-pillar is E2, where $10mm \leq E2 \leq 18mm$. That is, the length of the dash flange 6212 sandwiched between the side connection flange 732 and the A-pillar may be any value ranging from 10 mm to 18 mm. For example, the length of the dash flange 6212 sandwiched between the side connection flange 732 and the A-pillar may be, but not limited to, 10 mm, 14 mm, 18

mm, or the like. In some embodiments of the present disclosure, both the side connection flange 732 and the dash flange 6212 may extend downward in the height direction of the vehicle main body 6 (i.e., the Z-direction shown in FIG. 1).

[0096] With such an arrangement, the length of the dash flange 6212 sandwiched between the side connection flange 732 and the A-pillar can be made reasonable, and the firmness of the connection between the dash panel 621 and the side sealing member 73 can be improved.

[0097] In some embodiments of the present disclosure, as shown in FIG. 3 and FIG. 5, the rear sealing member 75 may include: a rear body 751 and a rear connection flange 752 connected to the rear body 751. The rear body 751 and the rear connection flange 752 may be formed as an integral piece. The rear body 751 is provided with the sealing protrusion 71 or the sealing groove 56. The rear connection flange 752 is capable of being connected to the sill beam 40 and is partially sandwiched between the side connection flange 732 and the sill beam 40.

[0098] The rear sealing member 75 may be disposed at a rear side of the side sealing member 73 in the first direction of the vehicle main body 6 (i.e., the X-direction shown in FIG. 1). The rear connection flange 752 may be disposed at each of two sides of the rear sealing member 75 in the second direction of the vehicle main body 6 (i.e., the Y-direction shown in FIG. 1). A left rear connection flange 752 may be connected to the left sill beam 47, and may be partially sandwiched between the side connection flange 732 of the left sealing member 74 and the left sill beam 47. A right rear connection flange 752 may be connected to the right sill beam 48, and may be partially sandwiched between the side connection flange 732 of the right sealing member 76 and the right sill beam 48. The rear connection flange 752, the sill beam 40, and the side connection flange 732 may be connected through spot welding or the structural adhesive.

[0099] With such an arrangement, the firmness of the connection between the sealing assembly 7 and the vehicle main body 6 can be improved, and the firmness of the connection between the rear sealing member 75 and the side sealing member 73 can also be enhanced.

[00100] A length of the rear connection flange 752 sandwiched between the side connection flange 732 and the sill beam 40 is E3 in the first direction of the vehicle main body 6 (i.e., the X-direction shown in FIG. 1), where $10mm \leq E3 \leq 18mm$. That is, the length of the rear connection flange 752 sandwiched between the side connection flange 732 and the sill beam 40

may be any value ranging from 10 mm to 18 mm. For example, the length of the rear connection flange 752 sandwiched between the side connection flange 732 and the sill beam 40 may be, but not limited to, 10 mm, 14 mm, 18 mm, or the like. In some embodiments of the present disclosure, both the side connection flange 732 and the rear connection flange 752 may extend downward in the height direction of the vehicle main body 6 (i.e., the Z-direction shown in FIG. 1).

[00101] With such an arrangement, the length of the rear connection flange 752 sandwiched between the side connection flange 732 and the sill beam 40 can be made reasonable, and the firmness of the connection between the rear sealing member 75 and the side sealing member 73 can be improved.

[00102] In some embodiments of the present disclosure, as shown in FIG. 1 and FIG. 2, the vehicle body assembly 100 may further include a seat mounting cross beam 199. In the height direction of the vehicle main body 6 (i.e., the Z-direction shown in FIG. 1), the seat mounting cross beam 199 may be disposed above the sealing assembly 7. Moreover, the seat mounting cross beam 199 may extend in the second direction of the vehicle main body 6 (i.e., the Y-direction shown in FIG. 1). Two ends of the seat mounting cross beam 199 are connected to the two side sealing members 73, respectively.

[00103] In the second direction of the vehicle main body 6 (i.e., the Y-direction shown in FIG. 1), the two ends of the seat mounting cross beam 199 may be connected to side bodies 731 of the two side sealing members 73, respectively. For example, the two ends of the seat mounting cross beam 199 may be connected to the side bodies 731 of the two side sealing members 73 by welding, respectively.

[00104] The battery pack 5 is connected to the seat mounting cross beam 199. It can be understood that, in the height direction of the vehicle main body 6 (i.e., the Z-direction shown in FIG. 6), the seat mounting cross beam 199 may be disposed above the battery pack 5, and the battery pack 5 and the seat mounting cross beam 199 may be connected through bolts. In some embodiments of the present disclosure, the battery pack 5 and the seat mounting cross beam 199 may be connected through a plurality of bolts, and the plurality of bolts may be arranged at intervals in the second direction of the vehicle main body 6 (i.e., the Y-direction shown in FIG. 6). By connecting the battery pack 5 to the seat mounting cross beam 199, the

firmness of the mounting of the battery pack 5 can be improved, and separation of the battery pack 5 from the vehicle can be avoided. Moreover, in the event of a side collision of the vehicle, the seat mounting cross beam 199 and the battery pack 5 can form at least two transmission paths, which can transmit a side collision load to a non-collision region, improving an impact resistance of the vehicle, while enhancing torsional rigidity of the body.

[00105] In some embodiments of the present disclosure, as shown in FIG. 6, the seat mounting cross beam 199 may include a front-seat mounting rear cross beam 2, and the battery pack 5 may be connected to the front-seat mounting rear cross beam 2.

[00106] In some embodiments of the present disclosure, as shown in FIG. 1, the vehicle body assembly 100 may further include a sixth connection member 77 that may be connected between the side sealing member 73 and the sill beam 40.

[00107] In some embodiments of the present disclosure, the sixth connection member 77 may include a first sub-body, a second sub-body, and a third sub-body. The second sub-body may be connected between the first sub-body and the third sub-body. The first sub-body may be connected to the side body 731 of the side sealing member 73. The third sub-body may be connected to the sill beam 40. By providing the sixth connection member 77, the firmness of the connection between the side sealing member 73 and the sill beam 40 can be improved.

[00108] In some embodiments of the present disclosure, an angle is formed between the first sub-body and the third sub-body. For example, an angle of 90 degrees may be formed between the first sub-body and the third sub-body. By forming the angle between the first sub-body and the third sub-body, a connection of the sixth connection member 77 to the side sealing member 73 and the sill beam 40 can be facilitated.

[00109] In some embodiments of the present disclosure, as shown in FIG. 1 and FIG. 2, the seat mounting cross beam 199 may include a front-seat mounting rear cross beam 2 and a front cross beam for front seat mounting 1. Both the front-seat mounting rear cross beam 2 and the front cross beam for front seat mounting 1 may extend in the second direction of the vehicle main body 6 (i.e., the Y-direction shown in FIG. 1). Moreover, two ends of the front-seat mounting rear cross beam 2 and two ends of the front cross beam for front seat mounting 1 are connected to the two side sealing members 73, respectively.

[00110] The sixth connection member 77 may be disposed between the front-seat mounting

rear cross beam 2 and the front cross beam for front seat mounting 1 in the first direction of the vehicle main body 6 (i.e., the X-direction shown in FIG. 1). Moreover, a plurality of sixth connection members 77 may be provided. Some of the plurality of sixth connection members 77 may be connected between the left sealing member 74 and the left sill beam 47, and some of the plurality of sixth connection members 77 may be connected between the right sealing member 76 and the right sill beam 48. With such an arrangement, the firmness of the connection between the side sealing member 73 and the sill beam 40 can be further improved. Moreover, it is beneficial to an improvement in the side collision performance of the vehicle.

[00111] In some embodiments of the present disclosure, as shown in FIG. 9 to FIG. 15, the vehicle body assembly 100 according to the embodiments of the present disclosure includes: a longitudinal beam 82, an A-pillar 87, a first connection member 81, and a second connection member 84.

[00112] The longitudinal beam 82 includes a first longitudinal beam segment 821 and a second longitudinal beam segment 822. The second longitudinal beam segment 822 has an end connected to the first longitudinal beam segment 821 and an opposite end connected to the A-pillar 87. The second longitudinal beam segment 822 is arc-shaped and is recessed towards an inner side of the vehicle. The first connection member 81 is at least partially located below the longitudinal beam 82 in a height direction of the vehicle body assembly 100 (i.e., a Z-direction shown in FIG. 9). The first connection member 81 is connected to the longitudinal beam 82, the A-pillar 87, and the dash panel 621. The first connection member 81 and the dash panel 621 together define a first cavity structure 88. The first cavity structure 88 has an open end facing an outer side of the vehicle, and at least part of the second connection member 84 encloses the open end.

[00113] In some embodiments of the present disclosure, the longitudinal beam 82 may be formed as an integral piece or as separate components.

[00114] The second longitudinal beam segment 822 has two opposite ends in the length direction of the vehicle body assembly 100 (i.e., an X-direction shown in FIG. 9). One of the two opposite ends is connected to the first longitudinal beam segment 821, and the other one of the two opposite ends is connected to the A-pillar 87. The second longitudinal beam segment 822 is constructed to be arc-shaped. That is, the second longitudinal beam segment 822 is of a

curved arc structure. Moreover, the second longitudinal beam segment 822 is recessed towards the inner side of the vehicle.

[00115] By connecting the second longitudinal beam segment 822 between the first longitudinal beam segment 821 and the A-pillar 87, in the event of a frontal collision of the vehicle, a part of an impact force can be transmitted to the A-pillar 87 through the first longitudinal beam segment 821 and the second longitudinal beam segment 822, such that the vehicle body assembly 100 can reliably withstand and transmit collision energy. Moreover, by constructing the second longitudinal beam segment 822 to be arc-shaped and to be recessed towards the inner side of the vehicle, the second longitudinal beam segment 822 can provide clearance for front wheels of the vehicle.

[00116] The first connection member 81 is at least partially located below the longitudinal beam 82 in the height direction of the vehicle body assembly 100 (i.e., the Z-direction shown in FIG. 9). That is, a partial structure or the entire structure of the first connection member 81 is located below the longitudinal beam 82.

[00117] The first connection member 81 is connected to the longitudinal beam 82 and the A-pillar 87. For example, the first connection member 81 may be connected to a lower end of the A-pillar 87. Moreover, the first connection member 81 is connected to the dash panel 621. In some embodiments of the present disclosure, the first connection member 81 may be partially located below the dash panel 621.

[00118] In some embodiments of the present disclosure, a connection manner of the first connection member 81 to the longitudinal beam 82, the A-pillar 87, and the dash panel 621 may be, but not limited to, bolting, welding, or the like.

[00119] In the event of a frontal collision of the vehicle, a part of the impact force can be transmitted from the longitudinal beam 82 to the first connection member 81, and then transmitted to the A-pillar 87 and the dash panel 621 through the first connection member 81, such that the vehicle body assembly 100 can reliably withstand and transmit the collision energy.

[00120] The first connection member 81 and the dash panel 621 together define the first cavity structure 88 that has an open end facing the outer side of the vehicle, and the at least part of the second connection member 84 encloses the open end.

[00121] That is, a partial structure or the entire structure of the second connection member

84 encloses the open end. It should be explained that since the first connection member 81, the dash panel 621, and the second connection member 84 are each sheet metal parts, even if the at least part of the second connection member 84 encloses the open end, it does not mean that the first cavity structure 88 is a completely closed cavity structure, and may still have a notch in communication with the outside world. In the event of a frontal collision of the vehicle, the first cavity structure 88 can collapse to absorb the collision energy.

[00122] In some embodiments of the present disclosure, with reference to FIG. 9 to FIG. 15, two longitudinal beams 82 may be provided, and may be arranged opposite to each other and spaced apart from each other in the width direction of the vehicle body assembly 100 (i.e., a Y-direction shown in FIG. 9). Moreover, two A-pillars 87, two first connection members 81, and two second connection members 84 may be provided. The two A-pillars 87 and the two first connection members 81 may each be arranged in one-to-one correspondence with the two longitudinal beams 82. The two second connection members 84 may be arranged in one-to-one correspondence with the two first connection members 81. The number of dash panels 621 may be one, and both the two first connection members 81 are connected to the dash panel 621.

[00123] Therefore, a structural design of the vehicle body assembly 100 is reasonable. In the event of a frontal collision of the vehicle, the vehicle body assembly 100 can reliably withstand, transmit, and absorb the collision energy, which can reduce a probability of injury to the passenger, thereby improving safety performance of the vehicle.

[00124] In some embodiments of the present disclosure, as shown in FIG. 12 and FIG. 14, the first connection member 81 includes a connection segment 811 and a connection body 812. The connection segment 811 has an end connected to the longitudinal beam 82 and an opposite end connected to the connection body 812. The connection body 812 is connected to the A-pillar 87 and the dash panel 621.

[00125] The first connection member 81 may include a connection segment 811 and a connection body 812. The connection segment 811 and the connection body 812 may be formed as an integral piece or as separate pieces. The connection segment 811 has two opposite ends. One of the two opposite ends is connected to the longitudinal beam 82, and the other one of the two opposite ends is connected to the connection body 812. In some embodiments of the present disclosure, a connection between the connection segment 811 and the longitudinal beam 82 is

located below the longitudinal beam 82.

[00126] In some embodiments of the present disclosure, a part of an edge of the connection body 812 is connected to the A-pillar 87, and the other part of the edge of the connection body 812 is connected to the dash panel 621. Moreover, the first connection member 81 can together define the first cavity structure 88 with the dash panel 621.

[00127] By making the first connection member 81 have the connection segment 811 and the connection body 812, the longitudinal beam 82, the A-pillar 87, and the dash panel 621 can be connected together through the first connection member 81, which can make the vehicle body assembly 100 more reliable and less prone to deformation due to a collision. In the event of a frontal collision of the vehicle, the vehicle body assembly 100 can reliably withstand, transmit, and absorb the collision energy, which can reduce the probability of injury to the passenger.

[00128] In some embodiments of the present disclosure, as shown in FIG. 12, the connection body 812 includes a first sub-body 8121, a second sub-body 8122, and a third sub-body 8123. The first sub-body 8121 is connected to the connection segment 811 and the A-pillar 87. Each of the second sub-body 8122 and the third sub-body 8123 is connected between the first sub-body 8121 and the dash panel 621.

[00129] The first connection member 81 may include a connection segment 811 and a connection body 812. The connection body 812 may be further divided into a first sub-body 8121, a second sub-body 8122, and a third sub-body 8123. The first sub-body 8121, the second sub-body 8122, and the third sub-body 8123 may be formed as an integral piece or as separate pieces.

[00130] The first sub-body 8121 is connected between the connection segment 811 and the A-pillar 87. The second sub-body 8122 is connected between the first sub-body 8121 and the dash panel 621. Moreover, the third sub-body 8123 is connected between the first sub-body 8121 and the dash panel 621.

[00131] By making the connection body 812 include the first sub-body 8121, the second sub-body 8122, and the third sub-body 8123, the connection body 812 can be connected to the connection segment 811, the A-pillar 87, and the dash panel 621, respectively. In this way, the longitudinal beam 82, the A-pillar 87, and the dash panel 621 can be connected together, which

is beneficial to an improvement in an overall structural strength of the vehicle body assembly 100, and can enable the vehicle body assembly 100 to reliably withstand, transmit, and absorb the collision energy.

[00132] In some embodiments of the present disclosure, as shown in FIG. 12, in a first direction of the vehicle body assembly 100 (i.e., the X-direction shown in FIG. 9), the second sub-body 8122 is at least partially located at a rear side of the first sub-body 8121. The third sub-body 8123 is at least partially located at a side of the first sub-body 8121 away from the A-pillar 87 in a second direction of the vehicle body assembly 100 (i.e., the Y-direction shown in FIG. 9).

[00133] The height direction of the vehicle body assembly 100 (i.e., the Z-direction shown in FIG. 9), the first direction of the vehicle body assembly 100 (i.e., the X-direction shown in FIG. 9), and the second direction of the vehicle body assembly 100 (i.e., the Y-direction shown in FIG. 9) are perpendicular to one another.

[00134] The connection body 812 may be divided into the first sub-body 8121, the second sub-body 8122, and the third sub-body 8123. In some embodiments of the present disclosure, in the first direction of the vehicle body assembly 100 (i.e., the X-direction shown in FIG. 9), a partial structure or the entire structure of the second sub-body 8122 may be located behind the first sub-body 8121, and the second sub-body 8122 is connected between the first sub-body 8121 and the dash panel 621.

[00135] In some embodiments of the present disclosure, in the second direction of the vehicle body assembly 100 (i.e., the Y-direction shown in FIG. 9), the A-pillar 87, the first sub-body 8121, and the third sub-body 8123 may be arranged sequentially from the outer side to the inner side of the vehicle. The third sub-body 8123 is connected to the first sub-body 8121, and is at least partially disposed at the side of the first sub-body 8121 away from the A-pillar 87. That is, a partial structure or the entire structure of the third sub-body 8123 may be located at the side of the first sub-body 8121 away from the A-pillar 87, and the third sub-body 8123 is connected between the first sub-body 8121 and the dash panel 621.

[00136] In some embodiments of the present disclosure, the first sub-body 8121, the second sub-body 8122, and the third sub-body 8123 may be formed as separate components, and the first sub-body 8121 and the connection segment 811 may be formed as an integral piece. With

such an arrangement, not only can production difficulty of the first connection member 81 be reduced, but assembly difficulty between the first connection member 81, the longitudinal beam 82, the A-pillar 87, and the dash panel 621 can also be reduced, which is beneficial to a reduction in assembly difficulty of the vehicle body assembly 100.

[00137] In some embodiments of the present disclosure, both the second sub-body 8122 and the third sub-body 8123 may extend in the height direction of the vehicle body assembly 100 (i.e., the Z-direction shown in FIG. 9).

[00138] In some embodiments of the present disclosure, as shown in FIG. 10, the second connection member 84 is connected to the first connection member 81, the dash panel 621, the A-pillar 87, and the longitudinal beam 82.

[00139] The first connection member 81 and the dash panel 621 together define the first cavity structure 88 that has an open end. A partial structure or the entire structure of the second connection member 84 encloses the open end. As a specific embodiment of the present disclosure, as shown in FIG. 10, a part of the structure of the second connection member 84 encloses the open end.

[00140] In some embodiments of the present disclosure, the second connection member 84 may be constructed as a thin-walled sheet metal part.

[00141] In some embodiments of the present disclosure, in the height direction of the vehicle body assembly 100 (i.e., the Z-direction shown in FIG. 9), an upper end of the second connection member 84 may be connected to the longitudinal beam 82, and a lower end of the second connection member 84 may be connected to the first connection member 81. In the length direction of the vehicle body assembly 100 (i.e., the X-direction shown in FIG. 9), a rear end of the second connection member 84 is connected to the A-pillar 87. Moreover, an edge of the dash panel 621 may be connected to a middle part of the second connection member 84.

[00142] By connecting the second connection member 84 to the first connection member 81, the dash panel 621, the A-pillar 87, and the longitudinal beam 82, and making the second connection member 84 enclose the open end of the first cavity structure 88, a reasonable structural form of the vehicle body assembly 100 can be achieved. The second connection member 84 is capable of withstanding and transmitting the frontal collision force, thereby improving the safety performance of the vehicle.

[00143] In some embodiments of the present disclosure, as shown in FIG. 10, the second connection member 84 is recessed towards the inner side of the vehicle.

[00144] In some embodiments of the present disclosure, the second connection member 84 may be recessed towards an inner rear side of the vehicle. In some embodiments of the present disclosure, a recess depth of the second connection member 84 is the same as a recess depth of the second longitudinal beam segment 822.

[00145] With such an arrangement, the second connection member 84 and the second longitudinal beam segment 822 can provide clearance for the front wheels of the vehicle, which can facilitate mounting of the front wheels and be beneficial to the reduction in the assembly difficulty of the vehicle.

[00146] In some embodiments of the present disclosure, the vehicle body assembly 100 further includes a third connection member. Moreover, as shown in FIG. 12 and FIG. 14, the dash panel 621 has a first recessed portion 6213 recessed upward in the height direction of the vehicle body assembly 100 (i.e., the Z-direction shown in FIG. 9). Two first connection members 81 are provided. In the second direction of the vehicle body assembly 100 (i.e., the Y-direction shown in FIG. 9), the first recessed portion 6213 is located between the two first connection members 81. The third connection member is connected between the two first connection members 81 and shields a part of the first recessed portion 6213.

[00147] In the second direction of the vehicle body assembly 100 (i.e., the Y-direction shown in FIG. 9), the two first connection members 81 may be arranged opposite to each other and spaced apart from each other. The third connection member is disposed between the two first connection members 81. The dash panel 621 has a first recessed portion 6213. In the height direction of the vehicle body assembly 100 (i.e., the Z-direction shown in FIG. 9), the first recessed portion 6213 is recessed upward. That is, the first recessed portion 6213 has a downward opening. Moreover, the third connection member shields a part of the first recessed portion 6213. That is, in the height direction of the vehicle body assembly 100 (i.e., the Z-direction shown in FIG. 9), the third connection member is arranged corresponding to the first recessed portion 6213 and shields a part of the opening of the first recessed portion 6213.

[00148] By connecting the third connection member between the two first connection members 81, the two first connection members 81 can be connected together. When the impact

force is transmitted to one of the first connection members 81, the impact force may be transmitted to the other one of the first connection members 81 through the third connection member, which can improve impact resistance of the vehicle body assembly 100. Moreover, by providing the dash panel 621 with the first recessed portion 6213, a modal strength of the dash panel 621 can be improved. In addition, by arranging the third connection member corresponding to the first recessed portion 6213, a more reasonable structural design of the vehicle body assembly 100 can be achieved, and structural stability of the vehicle body assembly 100 can be improved.

[00149] In some embodiments of the present disclosure, as shown in FIG. 9, FIG. 12, FIG. 13, and FIG. 14, the vehicle body assembly 100 further includes a middle channel 9. In the height direction of the vehicle body assembly 100 (i.e., the Z-direction shown in FIG. 9), the middle channel 9 is located at a side of the dash panel 621, and the third connection member is located at the other side of the dash panel 621. The middle channel 9 and the dash panel 621 together define a second cavity structure 915 that corresponds to the first recessed portion 6213.

[00150] The middle channel 9 extends in the first direction of the vehicle body assembly 100 (i.e., the X-direction shown in FIG. 9). In some embodiments of the present disclosure, in the second direction of the vehicle body assembly 100 (i.e., the Y-direction shown in FIG. 9), the middle channel 9 is located at a middle position of the dash panel 621. The dash panel 621 may be integrally constructed as an arc-shaped structure.

[00151] In the height direction of the vehicle body assembly 100 (i.e., the Z-direction shown in FIG. 9), the dash panel 621 has two opposite sides. The middle channel 9 is located at a side of the dash panel 621, and the third connection member is located at the other side of the dash panel 621. Moreover, the first connection member 81 is also located at the other side of the dash panel 621. The middle channel 9 and the dash panel 621 may together define the second cavity structure 915.

[00152] For example, the middle channel 9 may be located at a side of the dash panel 621 facing the passenger compartment and connected to the dash panel 621. Both the third connection member and the first connection member 81 may be located at a side of the dash panel 621 away from the passenger compartment. With such an arrangement, the vehicle body assembly 100 can have a plurality of cavity structures, which can improve a collapse and energy

absorption capacity of the vehicle body assembly 100. Moreover, by arranging the second cavity structure 915 corresponding to the first recessed portion 6213, when a collision force is transmitted to the second cavity structure 915 and/or the first recessed portion 6213, the second cavity structure 915 and the first recessed portion 6213 can share the collision force, thereby improving the safety performance of the vehicle.

[00153] In some embodiments of the present disclosure, the middle channel 9 and the dash panel 621 may be connected by welding.

[00154] In some embodiments of the present disclosure, the longitudinal beam 82 has a closed cross-section.

[00155] In some embodiments of the present disclosure, the longitudinal beam 82 may include an inner beam plate and an outer beam plate. The inner beam plate and the outer beam plate may be connected by welding to make the cross-section of the longitudinal beam 82 a closed cross-section. With such an arrangement, not only can a structural strength of the longitudinal beam 82 be enhanced, but the longitudinal beam 82 can also be less prone to bending deformation, enabling the longitudinal beam 82 to more reliably resist external stress. Moreover, with such an arrangement, a weight of the longitudinal beam 82 can be reduced, which can reduce an overall weight of the vehicle body assembly 100 and be beneficial to the lightweight design of the vehicle.

[00156] In some embodiments of the present disclosure, as shown in FIG. 14, a distance between two ends of the second longitudinal beam segment 822 is D1, where $400mm \leq D1 \leq 500mm$.

[00157] That is, the distance between the two ends of the second longitudinal beam segment 822 may be any value ranging from 400 mm to 500 mm. For example, D1 may be, but not limited to, 400 mm, 450 mm, 500 mm, or the like. With such an arrangement, the distance between the two ends of the second longitudinal beam segment 822 can be made reasonable, which is beneficial to ensuring a structural strength of the second longitudinal beam segment 822.

[00158] It should be explained that the distance between the two ends of the second longitudinal beam segment 822 refers to a minimum distance between the two ends of the second longitudinal beam segment 822.

[00159] In some embodiments of the present disclosure, as shown in FIG. 15, in the first direction of the vehicle body assembly 100 (i.e., an X-direction shown in FIG. 15), a distance between an end of the second longitudinal beam segment 822 connected to the first longitudinal beam segment 821 and the A-pillar 87 is D2, where 530mm≤D2≤630mm.

[00160] That is, in the first direction of the vehicle body assembly 100 (i.e., the X-direction shown in FIG. 15), the distance between the end of the second longitudinal beam segment 822 connected to the first longitudinal beam segment 821 and the A-pillar 87 may be any value ranging from 530 mm to 630 mm. For example, the distance between the end of the second longitudinal beam segment 822 connected to the first longitudinal beam segment 821 and the A-pillar 87 may be, but not limited to, 530 mm, 580 mm, 630 mm, or the like.

[00161] It should be explained that the distance between the end of the second longitudinal beam segment 822 connected to the first longitudinal beam segment 821 and the A-pillar 87 may be understood as a distance between the end of the second longitudinal beam segment 822 connected to the first longitudinal beam segment 821 and an end of the A-pillar 87 close to the first longitudinal beam segment 821, or a distance between the end of the second longitudinal beam segment 822 connected to the first longitudinal beam segment 821 and an end of the A-pillar 87 away from the first longitudinal beam segment 821, or a distance between the end of the second longitudinal beam segment 822 connected to the first longitudinal beam segment 821 and any position of the A-pillar 87.

[00162] With such an arrangement, the distance between the end of the second longitudinal beam segment 822 connected to the first longitudinal beam segment 821 and the A-pillar 87 can be made reasonable, and a reasonable dimensional design of the vehicle body assembly 100 can be achieved, which is beneficial to an improvement in the structural strength of the vehicle body assembly 100.

[00163] In some embodiments of the present disclosure, as shown in FIG. 9 to FIG. 11, the vehicle body assembly 100 further includes a sill beam 40. In the length direction of the vehicle body assembly 100 (i.e., the X-direction shown in FIG. 9), the sill beam 40 is located behind the A-pillar 87 and connected to the A-pillar 87.

[00164] In some embodiments of the present disclosure, as shown in FIG. 16 to FIG. 21, the vehicle body assembly 100 according to the embodiments of the present disclosure further

includes a fourth connection member 45.

[00165] The sill beam 40 defines the receiving cavity 41, and may extend in the length direction of the vehicle (i.e., an X-direction shown in FIG. 16). Moreover, in the width direction of the vehicle (i.e., a Y-direction shown in FIG. 16), the sill beam 40 may be disposed at each of two sides of the vehicle. In some embodiments of the present disclosure, the sill beam 40 may include an inner sill panel 43 and an outer sill panel 44. The inner sill panel 43 and the outer sill panel 44 may be arranged in the width direction of the vehicle (i.e., a Y-direction shown in FIG. 21) and connected to each other. The outer sill panel 44 may be disposed at a side of the corresponding inner sill panel 43 away from the vehicle, and the inner sill panel 43 and the outer sill panel 44 may together define the receiving cavity 41.

[00166] In some embodiments of the present disclosure, as shown in FIG. 20, the inner sill panel 43 may have an inner panel body 431, and an end of the inner panel body 431 may be provided with an inner panel connection plate 432. As shown in FIG. 21, the outer sill panel 44 may have an outer panel body 441, and an end of the outer panel body 441 may be provided with an outer panel connection plate 442. The inner panel connection plate 432 may be connected to the outer panel connection plate 442 to connect the inner sill panel 43 and the outer sill panel 44. The inner panel body 431 and the outer panel body 441 may together surround the receiving cavity 41.

[00167] In some embodiments of the present disclosure, the reinforcement beam 42 may extend in the length direction of the vehicle (i.e., the X-direction shown in FIG. 16), and the sill beam 40 may extend in the length direction of the vehicle (i.e., the X-direction shown in FIG. 16).

[00168] The reinforcement beam 42 is disposed in the receiving cavity 41, and the fourth connection member 45 may be at least partially located in the receiving cavity 41. In some embodiments of the present disclosure, a part of a structure of the fourth connection member 45 may be located in the receiving cavity 41, and the other part of the structure of the fourth connection member 45 may be located between the inner panel connection plate 432 and the outer panel connection plate 442.

[00169] The fourth connection member 45 is connected between the sill beam 40 and the reinforcement beam 42. By providing the fourth connection member 45, the reinforcement

beam 42 can be firmly fixed in the receiving cavity 41. When the vehicle is subjected to a side collision, the fourth connection member 45 can constrain a position of the reinforcement beam 42. When the collision force is small, the reinforcement beam 42 will not intrude towards the inner side of the vehicle due to the constraint of the fourth connection member 45. When the collision force is large, an intrusion amount of the reinforcement beam 42 towards the inner side of the vehicle can be reduced due to the constraint of the fourth connection member 45, which is beneficial to the improvement of the impact resistance of the vehicle. Moreover, in the first direction of the vehicle (i.e., the X-direction shown in FIG. 16, the length direction of the vehicle), the fourth connection member 45 is disposed at each of two ends of the reinforcement beam 42. By providing the two fourth connection members 45, it is beneficial to the constraint on the position of the reinforcement beam 42.

[00170] As shown in FIG. 18 and FIG. 19, a spacing distance between the two fourth connection members 45 is F1, where 400mm≤F1≤500mm. That is, in the first direction of the vehicle (i.e., an X-direction shown in FIG. 19), the spacing distance between the two fourth connection members 45 may be any value ranging from 400 mm to 500 mm. For example, F1 may be, but not limited to, 400 mm, 450 mm, 500 mm, or the like. With such an arrangement, the spacing distance between the two fourth connection members 45 can be made reasonable, which is beneficial to the constraint on the position of the reinforcement beam 42.

[00171] The spacing distance between the two fourth connection members 45 may be understood as a minimum spacing distance between the two fourth connection members 45 in the first direction of the vehicle (i.e., the X-direction shown in FIG. 16), i.e., a distance between an end of one of the fourth connection members 45 close to the other one of the fourth connection members 45 and an end of the other one of the fourth connection members 45 close to the one of the two fourth connection members 45 in the first direction of the vehicle (i.e., the X-direction shown in FIG. 16). Alternatively, the spacing distance between the two fourth connection members 45 may be understood as a maximum spacing distance between the two fourth connection members 45 in the first direction of the vehicle (i.e., the X-direction shown in FIG. 16), i.e., a distance between an end of the one of the two fourth connection members 45 away from the other one of the fourth connection members 45 and an end of the other one of the fourth connection members 45 away from the one of the two fourth connection members

45 in the first direction of the vehicle (i.e., the X-direction shown in FIG. 16). Alternatively, (as shown in FIG. 19, for example) the spacing distance between the two fourth connection members 45 may be understood as a distance between a midpoint of one of the fourth connection members 45 and a midpoint of the other one of the fourth connection members 45 in the first direction of the vehicle (i.e., the X-direction shown in FIG. 16).

[00172] Therefore, by disposing the fourth connection member 45 at each of the two ends of the reinforcement beam 42 and connecting the fourth connection members 45 between the sill beam 40 and the reinforcement beam 42, when the vehicle is subjected to a side collision, the fourth connection members 45 are capable of fixing the reinforcement beam 42, which can reduce an intrusion amplitude of the reinforcement beam 42 towards the inner side of the vehicle, thus can reliably protect the passenger in the passenger compartment of the vehicle, and is beneficial to the improvement of the safety of the vehicle.

[00173] In some embodiments of the present disclosure, as shown in FIG. 18 and FIG. 19, in the first direction of the vehicle (i.e., the X-direction shown in FIG. 19), a length of the reinforcement beam 42 may be F2, and F1 and F2 may satisfy: $1.36 \leq F2/F1 \leq 1.45$. That is, F2/F1 may be any value ranging from 1.36 to 1.45. For example, F2/F1 may be, but not limited to, 1.36, 1.40, 1.45, or the like. As a specific embodiment of the present disclosure, the length of the reinforcement beam 42 may be 630 mm, and the spacing distance between the two fourth connection members 45 is 450 mm, i.e., F2/F1 may be 1.4. With such an arrangement, a reasonable proportional relationship between the length F2 of the reinforcement beam 42 and the spacing distance F1 between the two fourth connection members 45 can be achieved, such that the fourth connection members 45 can firmly fix the reinforcement beam 42 in the receiving cavity 41, which is beneficial to the constraint on the position of the reinforcement beam 42.

[00174] In some embodiments of the present disclosure, as shown in FIG. 18 and FIG. 19, in the first direction of the vehicle (i.e., the X-direction shown in FIG. 16), the length of the reinforcement beam 42 may be F2, where $580\text{mm} \leq F2 \leq 680\text{mm}$. That is, in the first direction of the vehicle (i.e., the X-direction shown in FIG. 16), the length of the reinforcement beam 42 may be any value ranging from 580 mm to 680 mm. For example, F2 may be, but not limited to, 580 mm, 630 mm, 680 mm, or the like. With such an arrangement, the length of the reinforcement beam 42 can be made reasonable, which is beneficial to the improvement of the

safety of the vehicle.

[00175] In some embodiments of the present disclosure, in the first direction of the vehicle (i.e., the X-direction shown in FIG. 16), the length of the reinforcement beam 42 may be adjusted based on a wheelbase of the vehicle, which can improve a standardization of the reinforcement beam 42.

[00176] In some embodiments of the present disclosure, in the first direction of the vehicle (i.e., the X-direction shown in FIG. 16), the length of the reinforcement beam 42 is smaller than a length of the sill beam 40. With such an arrangement, it is beneficial to saving of a material of the reinforcement beam 42 and the lightweight design of the vehicle.

[00177] In some embodiments of the present disclosure, as shown in FIG. 17 and FIG. 18, the fourth connection member 45 may include a first connection plate 451 and a second connection plate 452 connected to the first connection plate 451. An angle may be formed between the first connection plate 451 and the second connection plate 452. In some embodiments of the present disclosure, a cross-section of the fourth connection member 45 may be constructed as an L-like shape, i.e., the angle between the first connection plate 451 and the second connection plate 452 may be 90° or approximately 90°. The first connection plate 451 may be connected to the reinforcement beam 42, and the second connection plate 452 may be connected to the sill beam 40. In some embodiments of the present disclosure, the first connection plate 451 and the second connection plate 452 may be formed as an integral piece.

[00178] In some embodiments of the present disclosure, the first connection plate 451 may be connected to a top wall of the reinforcement beam 42. The second connection plate 452 may be connected to the inner panel connection plate 432 of the inner sill panel 43. Alternatively, the second connection plate 452 may be connected to the inner panel connection plate 432 of the inner sill panel 43 and the outer panel connection plate 442 of the outer sill panel 44. For example, the second connection plate 452 may be disposed between the inner panel connection plate 432 and the outer panel connection plate 442. With such an arrangement, a reasonable structural form of the fourth connection member 45 can be achieved, which can firmly connect the reinforcement beam 42 and the sill beam 40 together.

[00179] As shown in FIG. 17, the second connection plate 452 may have a notch 4521 that may extend through the second connection plate 452 in a thickness direction of the second

connection plate 452. In the embodiment where the second connection plate 452 is disposed between the inner panel connection plate 432 and the outer panel connection plate 442, by forming the notch 4521 on the second connection plate 452, the inner panel connection plate 432 and the outer panel connection plate 442 can be directly connected by welding through the notch 4521. Moreover, the second connection plate 452 can be directly connected to the inner panel connection plate 432 and the outer panel connection plate 442 by welding, such that any two of the inner panel connection plate 432, the outer panel connection plate 442, and the second connection plate 452 have a direct connection relationship, which is beneficial to an improvement in the firmness of the connection between the reinforcement beam 42 and the sill beam 40.

[00180] In some embodiments of the present disclosure, as shown in FIG. 18, the second connection plate 452 and/or the first connection plate 451 may be provided with a reinforcement rib 4522. In some embodiments of the present disclosure, the second connection plate 452 and/or the first connection plate 451 may have a first lightening hole 4523.

[00181] In some embodiments of the present disclosure, as shown in FIG. 17 and FIG. 18, the vehicle body assembly 100 of the vehicle may further include a fifth connection member 46 that may be located in the receiving cavity 41 and connected between the sill beam 40 and the reinforcement beam 42. By providing the fifth connection member 46, the sill beam 40 and the reinforcement beam 42 can be connected, which can firmly fix the reinforcement beam 42 in the receiving cavity 41. When the vehicle is subjected to a side collision, the fifth connection member 46 can constrain the position of the reinforcement beam 42. When the collision force is small, the reinforcement beam 42 will not intrude towards the inner side of the vehicle due to the constraint of the fifth connection member 46. When the collision force is large, the intrusion amount of the reinforcement beam 42 towards the inner side of the vehicle can be reduced due to the constraint of the fifth connection member 46, which is beneficial to the improvement of the impact resistance of the vehicle.

[00182] The fifth connection member 46 is disposed at each of the two ends of the reinforcement beam 42 in the first direction of the vehicle (i.e., the X-direction shown in FIG. 16). By providing the two fifth connection members 46, it is beneficial to the constraint on the position of the reinforcement beam 42.

[00183] In the height direction of the vehicle (i.e., a Z-direction shown in FIG. 20), an overlapping region exists between an orthographic projection of the fourth connection member 45 and an orthographic projection of the fifth connection member 46.

[00184] In some embodiments of the present disclosure, a plane is defined to be perpendicular to the height direction of the vehicle (i.e., the Z-direction shown in FIG. 20), i.e., a normal line of the plane is parallel to the height direction of the vehicle (i.e., the Z-direction shown in FIG. 20). An overlapping region exists between an orthographic projection of the front one of the two fourth connection members 45 on the plane and an orthographic projection of the front one of the two fifth connection members 46 on the plane. An overlapping region exists between an orthographic projection of the rear one of the two fourth connection members 45 on the plane and an orthographic projection of the rear one of the two fifth connection members 46 on the plane. With such an arrangement, reasonable arrangement positions of the fourth connection member 45 and the fifth connection member 46 can be achieved, and a space of the receiving cavity 41 can be fully utilized. Moreover, the firmness of the mounting of the reinforcement beam 42 can be greatly increased, which can reliably protect the passenger in the passenger compartment of the vehicle and is beneficial to the improvement of the safety of the vehicle.

[00185] Any two of the length direction of the vehicle (i.e., the X-direction shown in FIG. 16), the width direction of the vehicle (i.e., the Y-direction shown in FIG. 16), and the height direction of the vehicle (i.e., the Z-direction shown in FIG. 20) are perpendicular to each other.

[00186] In some embodiments of the present disclosure, as shown in FIG. 18 and FIG. 19, in the first direction of the vehicle (i.e., the X-direction shown in FIG. 16), a spacing distance between the two fifth connection members 46 may be F3, and F1 and F3 may satisfy: $0.8 \leq F3/F1 \leq 0.84$. That is, F3/F1 may be any value ranging from 0.8 to 0.84. For example, F3/F1 may be, but not limited to, 0.8, 0.82, 0.84, or the like. As a specific embodiment of the present disclosure, the spacing distance between the two fourth connection members 45 is 450 mm, and the spacing distance between the two fifth connection members 46 is 370 mm, i.e., F3/F1 may be 0.82. With such an arrangement, a reasonable proportional relationship between the spacing distance F3 between the two fifth connection members 46 and the spacing distance F1 between the two fourth connection members 45 can be achieved, such that the fourth connection

members 45 and the fifth connection members 46 can firmly fix the reinforcement beam 42 in the receiving cavity 41, which is beneficial to the improvement of the impact resistance of the vehicle.

[00187] In some embodiments of the present disclosure, as shown in FIG. 18 and FIG. 19, in the first direction of the vehicle (i.e., the X-direction shown in FIG. 16), the spacing distance between the two fifth connection members 46 may be F3, where 320mm≤F3≤420mm. That is, in the first direction of the vehicle (i.e., the X-direction shown in FIG. 19), the spacing distance between the two fifth connection members 46 may be any value ranging from 320 mm to 420 mm. For example, F3 may be, but not limited to, 320 mm, 370 mm, 420 mm, or the like. With such an arrangement, the spacing distance between the two fifth connection members 46 can be made reasonable, which can firmly fix the reinforcement beam 42 in the receiving cavity 41, and thus can further improve the impact resistance of the vehicle.

[00188] The spacing distance between the two fifth connection members 46 may be understood as a minimum spacing distance between the two fifth connection members 46 in the first direction of the vehicle (i.e., the X-direction shown in FIG. 16), i.e., a distance between an end of the one of the two fifth connection members 46 close to the other one of the two fifth connection members 46 and an end of the other one of the two fifth connection members 46 close to the one of the two fifth connection members 46 in the first direction of the vehicle (i.e., the X-direction shown in FIG. 16). Alternatively, the spacing distance between the two fifth connection members 46 may be understood as a maximum spacing distance between the two fifth connection members 46 in the first direction of the vehicle (i.e., the X-direction shown in FIG. 16), i.e., a distance between an end of the one of the fifth connection members 46 away from the other one of the fifth connection members 46 and an end of the other one of the fifth connection members 46 away from the one of the fifth connection members 46 in the first direction of the vehicle (i.e., the X-direction shown in FIG. 16). Alternatively, (as shown in FIG. 19, for example) the spacing distance between the two fifth connection members 46 may be understood as a distance between a midpoint of the one of the two fifth connection members 46 and a midpoint of the other one of the two fifth connection members 46 in the first direction of the vehicle (i.e., the X-direction shown in FIG. 16).

[00189] In some embodiments of the present disclosure, as shown in FIG. 17 and FIG. 18,

the fifth connection member 46 may include a connection member body 461, a first connection flange 462, and a second connection flange 463. Both the first connection flange 462 and the second connection flange 463 may be connected to the connection member body 461. In some embodiments of the present disclosure, the connection member body 461, the first connection flange 462, and the second connection flange 463 may be formed as an integral piece.

[00190] The connection member body 461 may be connected to the reinforcement beam 42, the first connection flange 462 may be connected to a bottom wall of the receiving cavity 41, and the second connection flange 463 may be connected to an inner side wall 411 of the receiving cavity 41. In some embodiments of the present disclosure, the connection member body 461 may be connected to a bottom wall of the reinforcement beam 42, the first connection flange 462 may be connected to a bottom wall of the inner panel body 431 of the inner sill panel 43, and the second connection flange 463 may be connected to the inner side wall 411 of the receiving cavity 41. The inner side wall 411 of the receiving cavity 41 may be understood as a side wall of the inner panel body 431 of the inner sill panel 43.

[00191] With such an arrangement, it is possible to make a structural form of the fifth connection member 46 reasonable, allow the fifth connection member 46 to have a connection relationship with the reinforcement beam 42, the bottom wall of the receiving cavity 41, and the inner side wall 411 of the receiving cavity 41, and thus firmly connect the reinforcement beam 42 and the sill beam 40 together.

[00192] In some embodiments of the present disclosure, the connection manner between the outer sill panel 44 and the inner sill panel 43, the connection manner between the fourth connection member 45 and the reinforcement beam 42, the connection manner between the fourth connection member 45 and the sill beam 40, the connection manner between the fifth connection member 46 and the reinforcement beam 42, and the connection manner between the fifth connection member 46 and the sill beam 40 may be, but not limited to, welding, bolting, riveting, or the like.

[00193] In some embodiments of the present disclosure, as shown in FIG. 17 and FIG. 18, the connection member body 461 may include a first plate body 4611, a second plate body 4612, and a third plate body 4613. The first plate body 4611 and the third plate body 4613 are arranged opposite to each other and spaced apart from each other. The second plate body 4612 is

connected between the first plate body 4611 and the third plate body 4613. In an exemplary embodiment of the present disclosure, an end of the second plate body 4612 may be connected to the first plate body 4611, and the other end of the second plate body 4612 may be connected to the third plate body 4613. In some embodiments of the present disclosure, the first plate body 4611, the second plate body 4612, and the third plate body 4613 may be formed as an integral piece. The second plate body 4612 may be connected to the reinforcement beam 42. In some embodiments of the present disclosure, the second plate body 4612 may be connected to the bottom wall of the reinforcement beam 42.

[00194] In some embodiments of the present disclosure, both the first plate body 4611 and the third plate body 4613 may extend in the height direction of the vehicle (i.e., the Z-direction shown in FIG. 20) and in a direction away from the reinforcement beam 42. That is, the first plate body 4611, the second body, and the third plate body 4613 may be constructed as a structure in the shape of a "几" character. With such an arrangement, it is possible to allow the fifth connection member 46 to have a high structural strength.

[00195] The first connection flange 462 may be disposed at an end of the first plate body 4611 away from the second plate body 4612, or an end of the third plate body 4613 away from the second plate body 4612, or each of the end of the first plate body 4611 away from the second plate body 4612 and the end of the third plate body 4613 away from the second plate body 4612. In some embodiments of the present disclosure, the first connection flange 462 may be disposed at each of the end of the first plate body 4611 away from the second plate body 4612 and the end of the third plate body 4613 away from the second plate body 4612. With such an arrangement, it is possible to allow the fifth connection member 46 to have more first connection flanges 462, and improve the firmness of the connection between the fifth connection member 46 and the sill beam 40.

[00196] The second connection flange 463 may be disposed at a side edge of the first plate body 4611, or a side edge of the third plate body 4613, or each of the side edge of the first plate body 4611 and the side edge of the third plate body 4613. In some embodiments of the present disclosure, the second connection flange 463 may be disposed at each of the side edge of the first plate body 4611 and the side edge of the third plate body 4613. With such an arrangement, it is possible to allow the fifth connection member 46 to have more second connection flanges

463, and further improve the firmness of the connection between the fifth connection member 46 and the sill beam 40.

[00197] It can be understood that the fifth connection member 46 may be supported between the reinforcement beam 42 and the sill beam 40.

[00198] In some embodiments of the present disclosure, the second plate body 4612 and/or the first connection flange 462 may have a first lightening hole 4523.

[00199] In some embodiments of the present disclosure, each of the fourth connection member 45 and the fifth connection member 46 may be a cold stamping member.

[00200] In some embodiments of the present disclosure, the fifth connection member 46 is arranged corresponding to a battery pack mounting point of the sill beam 40.

[00201] In some embodiments of the present disclosure, as shown in FIG. 16 and FIG. 17, in the second direction of the vehicle (i.e., the Y-direction shown in FIG. 16), an overlapping region exists between the orthographic projection of the fourth connection member 45 and an orthographic projection of the seat mounting cross beam 199 of the vehicle.

[00202] In an exemplary embodiment of the present disclosure, a plane is defined to be perpendicular to the second direction of the vehicle (i.e., the Y-direction shown in FIG. 16). That is, the normal line of the plane is parallel to the second direction of the vehicle (i.e., the Y-direction shown in FIG. 16). The overlapping region exists between the orthographic projection of the fourth connection member 45 and the orthographic projection of the seat mounting cross beam 199 of the vehicle. The seat mounting cross beam 199 may include a front cross beam for front seat mounting 1 and a front-seat mounting rear cross beam 2. An overlapping region exists between an orthographic projection of the front one of the two fourth connection members 45 on the plane and an orthographic projection of the front cross beam for front seat mounting 1 on the plane. An overlapping region exists between an orthographic projection of the rear one of the two fourth connection members 45 on the plane and the orthographic projection of the front-seat mounting rear cross beam 2 on the plane. When the vehicle is subjected to a side collision, the seat mounting cross beam 199 is capable of effectively supporting the fourth connection members 45, which can reduce a probability of the reinforcement beam 42 further intruding towards the inner side of the vehicle and into the passenger compartment, thus can reliably protect the passenger in the passenger compartment of the vehicle, and is beneficial to

the improvement of the safety of the vehicle.

[00203] In some embodiments of the present disclosure, as shown in FIG. 22 to FIG. 29, the vehicle body assembly 100 may further include a dash middle cross beam 89, and the middle channel 9 includes a middle channel body 91.

[00204] The middle channel body 91 includes a first channel segment 911 and a second channel segment 912 connected to the first channel segment 911. An end portion of the first channel segment 911 away from the second channel segment 912 is connected to the dash middle cross beam 89. An end portion of the second channel segment 912 away from the first channel segment 911 is connected to the front cross beam for front seat mounting 1. An end portion of the first channel segment 911 close to the second channel segment 912 is connected to an end portion of the second channel segment 912 close to the first channel segment 911. By connecting the second channel segment 912 to the front cross beam for front seat mounting 1, a length of the middle channel body 91 can be shortened, such that the middle channel body 91 does not exist in a rear row of the passenger compartment, which can improve comfort of a rear passenger in the passenger compartment. Moreover, by connecting the second channel segment 912 to the front cross beam for front seat mounting 1, collision safety performance of the vehicle can be ensured. In some optional embodiments of the present disclosure, the middle channel body 91 is formed as an integral piece, i.e., the first channel segment 911 and the second channel segment 912 are formed as an integral piece. With such an arrangement, a structural strength of the middle channel body 91 can be improved.

[00205] In the length direction of the vehicle (i.e., an X-direction shown in FIG. 22), the first channel segment 911 is located at a front side of the second channel segment 912. In other words, the middle channel body 91 is a structure extending in the length direction of the vehicle, and the dash middle cross beam 89 is located at a front side of the front cross beam for front seat mounting 1. Moreover, in the height direction of the vehicle (i.e., a Z-direction shown in FIG. 24), a height of the dash middle cross beam 89 is higher than a height of the front cross beam for front seat mounting 1. The end portion of the first channel segment 911 away from the second channel segment 912 is located at a higher level than the second channel segment 912, i.e., an end portion of the first channel segment 911 connected to the dash middle cross beam 89 is located at a higher level than the second channel segment 912. Moreover, the first

channel segment 911 is constructed as a downwardly recessed arc shape. That is, the first channel segment 911 is constructed as a downwardly recessed arc-shaped segment. Alternatively, it can also be understood that a longitudinal cross-section of the first channel segment 911 (i.e., the cross-section in the height direction of the vehicle) is arc-shaped.

[00206] It should be explained that, by constructing the middle channel body 91 as a structural form where the end portion of the first channel segment 911 away from the second channel segment 912 is located at a higher level than the second channel segment 912, the middle channel body 91 can be easily connected between the dash middle cross beam 89 and the front cross beam for front seat mounting 1. Moreover, by constructing the first channel segment 911 as the downwardly recessed arc segment, the first channel segment 911 can be recessed downward, which can reduce a space occupied by the middle channel body 91, and is beneficial to a reduction in arrangement difficulty of vehicle components. In some optional embodiments of the present disclosure, a center console of the vehicle can be shielded by the center console, i.e., the first channel segment 911 can provide a mounting point for the center console of the vehicle. By constructing the first channel segment 911 as the downwardly recessed arc segment, a larger mounting space can be provided for the center console of the vehicle.

[00207] In some optional embodiments of the present disclosure, the middle channel body 91 may be connected to each of the dash middle cross beam 89 and the front cross beam for front seat mounting 1 by welding.

[00208] In some optional embodiments of the present disclosure, the middle channel body 91 may be located inside the passenger compartment, and may be located above the front floor of the vehicle. In some optional embodiments of the present disclosure, the upper surface of the battery pack of the vehicle may be constructed as the front floor of the vehicle. In some optional embodiments of the present disclosure, the middle channel body 91 may be centrally arranged inside the passenger compartment.

[00209] Therefore, by connecting the second channel segment 912 to the front cross beam for front seat mounting 1, the length of the middle channel body 91 can be shortened, such that the middle channel body 91 does not exist in the rear row of the passenger compartment, which can improve the comfort of the rear passenger in the passenger compartment. Moreover, by

connecting the second channel segment 912 to the front cross beam for front seat mounting 1, the collision safety performance of the vehicle can be ensured. In addition, by constructing the first channel segment 911 as the downwardly recessed arc shape, the space occupied by the middle channel body 91 can be reduced, which is beneficial to the reduction in the arrangement difficulty of the vehicle components.

[00210] Moreover, the middle channel body 91 of the present disclosure has a short length, which is beneficial to a reduction in a weight of the middle channel body 91 and the lightweight design of the vehicle.

[00211] In some embodiments of the present disclosure, as shown in FIG. 22, FIG. 24, FIG. 26, and FIG. 28, a width of the first channel segment 911 may gradually increase in a direction from the first channel segment 911 to the second channel segment 912.

[00212] That is, in the length direction of the vehicle (i.e., the X-direction shown in FIG. 22), the width of the first channel segment 911 may gradually increase. The width of the first channel segment 911 may be understood as a width of the first channel segment 911 in the width direction of the vehicle (i.e., a Y-direction shown in FIG. 22). By constructing the width of the first channel segment 911 as a structural form of gradually increasing in the length direction of the vehicle, a structural strength of the first channel segment 911 can be increased, and the structural strength of the middle channel body 91 can be increased, which can ensure the collision safety performance of the vehicle, and is beneficial to the improvement of the safety of the vehicle.

[00213] In some embodiments of the present disclosure, as shown in FIG. 28, a width of the end portion of the first channel segment 911 away from the second channel segment 912 may be N1, where $100mm \leq N1 \leq 180mm$. That is, in the width direction of the vehicle (i.e., the Y-direction shown in FIG. 22), the width N1 of the end portion of the first channel segment 911 away from the second channel segment 912 may be any value ranging from 100 mm to 180 mm. For example, N1 may be, but not limited to, 100 mm, 140 mm, 180 mm, or the like. With such an arrangement, a width dimension of the end portion of the first channel segment 911 away from the second channel segment 912 can be made reasonable, which is beneficial to ensuring the structural strength of the first channel segment 911.

[00214] In some embodiments of the present disclosure, a width of the end portion of the

first channel segment 911 close to the second channel segment 912 may be N2, where 150mm≤N2≤230mm. That is, in the width direction of the vehicle (i.e., the Y-direction shown in FIG. 22), the width N2 of the end portion of the first channel segment 911 close to the second channel segment 912 may be any value ranging from 150 mm to 230 mm. For example, N2 may be, but not limited to, 150 mm, 190 mm, 230 mm, or the like. With such an arrangement, a width dimension of the end portion of the first channel segment 911 close to the second channel segment 912 can be made reasonable, which is beneficial to further ensuring the structural strength of the first channel segment 911.

[00215] It should be explained that, in the height direction of the vehicle (i.e., the Z-direction shown in FIG. 24), the connection flange 9112 may be disposed at each of a lower end portion of the first channel segment 911 and a lower end of the second channel segment 912. The width of the first channel segment 911 described in the present disclosure does not include the connection flanges 9112.

[00216] It should be explained that, in the height direction of the vehicle (i.e., the Z-direction shown in FIG. 24), (as shown in FIG. 29) two side walls of the middle channel body 91 may be constructed as a structural form that gradually approach each other. N1 may be understood as a width dimension of any position of the end portion of the first channel segment 911 away from the second channel segment 912 in the width direction of the vehicle (i.e., the Y-direction shown in FIG. 22). For example, N1 may be a width dimension of a top wall of the end portion of the first channel segment 911 away from the second channel segment 912, or a distance between lowest ends of the two side walls of the end portion of the first channel segment 911 away from the second channel segment 912.

[00217] In some embodiments of the present disclosure, as shown in FIG. 25, a length of the front cross beam for front seat mounting 1 is N3, and N3 and N2 may satisfy: 0.07N3≤N2≤0.15N3. In the width direction of the vehicle (i.e., the Y-direction shown in FIG. 22), the width of the end portion of the first channel segment 911 close to the second channel segment 912 may be N2. Moreover, in the width direction of the vehicle (i.e., the Y-direction shown in FIG. 22), the length of the front cross beam for front seat mounting 1 may be N3. The width N2 of the end portion of the first channel segment 911 close to the second channel segment 912 may be any value ranging from 0.07N3 to 0.15N3. For example, N2 may be, but

not limited to, 0.07N3, 0.107N3, 0.15N3, or the like. In some optional embodiments of the present disclosure, in the width direction of the vehicle (i.e., the Y-direction shown in FIG. 22), the width of the end portion of the first channel segment 911 close to the second channel segment 912 may be 190 mm, and the length of the front cross beam for front seat mounting 1 may be 1770 mm. With such an arrangement, a ratio of the length of the front cross beam for front seat mounting 1 to the width of the end portion of the first channel segment 911 close to the second channel segment 912 can be made reasonable, which is beneficial to the improvement of the overall structural strength of the body.

[00218] In some embodiments of the present disclosure, as shown in FIG. 22, FIG. 24, and FIG. 26 to FIG. 28, a first overlapping flange 9121 may be provided at the end portion of the second channel segment 912 away from the first channel segment 911, and is adapted to be connected to a top wall of the front cross beam for front seat mounting 1. In some optional embodiments of the present disclosure, the first overlapping flange 9121 may be connected to the top wall of the front cross beam for front seat mounting 1 by welding. As shown in FIG. 28, in a length direction of the middle channel body 91 (i.e., the X-direction shown in FIG. 22), a length of the first overlapping flange 9121 may be N4. As shown in FIG. 25, a width of the front cross beam for front seat mounting 1 may be N5, and N4 and N5 may satisfy: $0.3N5 \leq N4 \leq 0.5N5$. That is, N4 may be, but not limited to, 0.3N5, 0.4N5, 0.5N5, or the like. With such an arrangement, a ratio of the length of the first overlapping flange 9121 to the width of the front cross beam for front seat mounting 1 can be made reasonable, which is beneficial to ensuring a connection strength between the first overlapping flange 9121 and the front cross beam for front seat mounting 1, and thus can reduce a probability of separation of the first overlapping flange 9121 from the front cross beam for front seat mounting 1.

[00219] In some optional embodiments of the present disclosure, as shown in FIG. 27 and FIG. 28, a plurality of second overlapping flanges 9122 may be provided at the end portion of the second channel segment 912 away from the first channel segment 911. For example, two second overlapping flanges 9122 may be provided, and may be located at two sides of the second channel segment 912 in the width direction of the vehicle (i.e., the Y-direction shown in FIG. 22), respectively. The second overlapping flanges 9122 are adapted to be connected to a front side wall of the front cross beam for front seat mounting 1. In some optional embodiments

of the present disclosure, the second overlapping flanges 9122 may be connected to the front side wall of the front cross beam for front seat mounting 1 by welding. With such an arrangement, a connection strength between the middle channel body 91 and the front cross beam for front seat mounting 1 can be improved, and a probability of separation of the middle channel body 91 from the front cross beam for front seat mounting 1 can be reduced.

[00220] In some embodiments of the present disclosure, as shown in FIG. 29, in the height direction of the vehicle (i.e., the Z-direction shown in FIG. 24), a height of the second channel segment 912 may be N6, where 40mm≤N6≤120mm. That is, the height N6 of the second channel segment 912 may be any value ranging from 40 mm to 120 mm. For example, N6 may be, but not limited to, 40 mm, 80 mm, 120 mm, or the like. It should be noted that a height of any position of the second channel segment 912 in the height direction of the vehicle (i.e., the Z-direction shown in FIG. 24) may be N6. With such an arrangement, a height dimension of the second channel segment 912 can be made reasonable, which is beneficial to ensuring a structural strength of the second channel segment 912.

[00221] In some embodiments of the present disclosure, as shown in FIG. 22 to FIG. 28, a width of the second channel segment 912 may remain unchanged in the direction from the first channel segment 911 to the second channel segment 912. That is, in the length direction of the vehicle (i.e., the X-direction shown in FIG. 22), a width of the second channel segment 912 in the width direction of the vehicle may remain unchanged. In some optional embodiments of the present disclosure, the width of the end portion of the first channel segment 911 close to the second channel segment 912 may be N2, and the width of the second channel segment 912 may be N2, where 150mm≤N2≤230mm. That is, the width of the second channel segment 912 may be any value ranging from 150 mm to 230 mm.

[00222] That is, in the length direction of the vehicle (i.e., the X-direction shown in FIG. 22), the width of the second channel segment 912 may remain unchanged, and the width of the second channel segment 912 is the same as the width of the end portion of the first channel segment 911 close to the second channel segment 912. In some optional embodiments of the present disclosure, the width of the second channel segment 912 may be 190 mm. With such an arrangement, a structural form of the second channel segment 912 can be made reasonable, which is beneficial to ensuring the structural strength of the second channel segment 912.

Moreover, by constructing the second channel segment 912 as a structure form with an unchanged width, it is beneficial to a reduction in production difficulty of the middle channel 9.

[00223] It should be explained that, in the height direction of the vehicle (i.e., the Z-direction shown in FIG. 24), the connection flange 9112 may be disposed at each of the lower end portion of the first channel segment 911 and the lower end portion of the second channel segment 912. The width of the second channel segment 912 described in the present disclosure does not include the connection flanges 9112.

[00224] It should be explained that, in the height direction of the vehicle (i.e., the Z-direction shown in FIG. 24), (as shown in FIG. 29) the two side walls of the middle channel body 91 may be constructed as the structural form that gradually approach each other. N2 may be understood as a width dimension at any position of the second channel segment 912 in the width direction of the vehicle (i.e., the Y-direction shown in FIG. 22). For example, N2 may be a width dimension of a top wall of the second channel segment 912, or a distance between lowest ends of the two side walls of the second channel segment 912.

[00225] In some embodiments of the present disclosure, as shown in FIG. 22 to FIG. 25, the middle channel body 91 is adapted to be connected to the longitudinal beam 82 of the vehicle. In some optional embodiments of the present disclosure, two longitudinal beams 82 of the vehicle may be provided. Both the two longitudinal beams 82 may extend in the length direction of the vehicle (i.e., the X-direction shown in FIG. 22), and may be arranged opposite to each other and spaced apart from each other in the width direction of the vehicle (i.e., the Y-direction shown in FIG. 22). Two ends of the dash middle cross beam 89 may be connected to the two longitudinal beams 82 by welding, respectively. The middle channel body 91 may be indirectly connected to the longitudinal beams 82 of the vehicle through the dash middle cross beam 89.

[00226] In some embodiments of the present disclosure, as shown in FIG. 29, the first channel segment 911 may define an open first groove, and the second channel segment 912 may define an open second groove 9123. The first groove may be close to and be in communication with the second groove 9123 each other. Both the first groove and the second groove 9123 may be open towards the dash panel 621 of the vehicle.

[00227] The middle channel body 91 is adapted to be connected to the dash panel 621 of the

vehicle. In some optional embodiments of the present disclosure, as shown in FIG. 26 to FIG. 28, the connection flange 9112 may be disposed at each of the lower end portion of the first channel segment 911 and the lower end portion of the second channel segment 912, and the middle channel body 91 may be connected to the dash panel 621 of the vehicle through the connection flanges 9112.

[00228] Moreover, at least part of the open end of the first groove and/or at least part of the open end of the second groove 9123 is shielded by the dash panel 621. That is, the at least part of the open end of the first groove, or the at least part of the open end of the second groove 9123, or the at least part the open end of the second groove 9123 and the at least part of the open end of the first groove may be shielded by the dash panel 621. In some optional embodiments of the present disclosure, the connection flange 9112 of the first channel segment 911 of the middle channel body 91 and a part of the connection flanges 9112 of the second channel segment 912 may be connected to the dash panel 621 of the vehicle.

[00229] With such an arrangement, a cavity can be formed between the middle channel body 91 and the dash panel 621 of the vehicle, which is beneficial to an improvement in an impact resistance of a front part of the vehicle, and thus can ensure crash safety performance of the vehicle.

[00230] In some optional embodiments of the present disclosure, the middle channel body 91 may be located at a side of the dash panel 621, and the dash middle cross beam 89 may be located at the other side of the dash panel 621. It should be explained that, although the middle channel body 91 and the dash middle cross beam 89 are respectively located at the two sides of the dash panel 621, a direct connection relationship can also exist between the middle channel body 91 and the dash middle cross beam 89 by connecting the middle channel body 91, the dash middle cross beam 89, and the dash panel 621 together through the spot welding. In some optional embodiments of the present disclosure, in the height direction of the vehicle, the dash middle cross beam 89 has two flange structures, and the end of the first channel segment 911 away from the second channel segment 912 may be connected to at least one of the two flange structures of the dash middle cross beam 89 through the spot welding.

[00231] In some embodiments of the present disclosure, as shown in FIG. 24, the second channel segment 912 may have a first sub-channel segment 9124 and a second sub-channel

segment 9125. The first sub-channel segment 9124 may be connected between the first channel segment 911 and the second sub-channel segment 9125. The first channel segment 911 and the first sub-channel segment 9124 are adapted to be connected to the dash panel 621, and the second sub-channel segment 9125 is adapted to be connected to the front cross beam for front seat mounting 1. That is, the first channel segment 911 may define an open first groove, the first sub-channel segment 9124 may define an open first sub-groove. The second sub-channel segment 9125 may define an open second sub-groove. The first sub-groove and the second sub-groove together form the second groove 9123. The first channel segment 911 and the first sub-channel segment 9124 are adapted to be connected to the dash panel 621. Moreover, an open end of the first groove of the first channel segment 911 facing the dash panel 621 is shielded by the dash panel 621, and an open end of the first sub-groove of the first sub-channel segment facing the dash panel 621 is shielded by the dash panel 621.

[00232] It should be noted that the first channel segment 911 and the first sub-channel segment 9124 are subject to a large force. By shielding the open end of the first groove facing the dash panel 621 and the open end of the first sub-groove facing the dash panel 621 with the dash panel 621, the impact resistance of the first channel segment 911 and the impact resistance of the first sub-channel segment 9124 can be improved, which is beneficial to the improvement of the impact resistance of the front part of the vehicle and can ensure the crash safety performance of the vehicle.

[00233] In some optional embodiments of the present disclosure, as shown in FIG. 26 to FIG. 29, the middle channel body 91 may have a reinforcement structure 913 that may protrude in a direction away from the dash panel 621. A plurality of reinforcement structures 913 may be provided. For example, as shown in FIG. 26, two reinforcement structures 913 may be provided.

[00234] It should be noted that, in the present disclosure, the first direction of the vehicle, the first direction of the vehicle body assembly 100, and the first direction of the vehicle main body 6 are the same direction (i.e., the length direction of the vehicle body assembly 100). The second direction of the vehicle, the second direction of the vehicle body assembly 100, and the second direction of the vehicle main body 6 are the same direction (i.e., the width direction of the vehicle body assembly 100). The height direction of the vehicle, the height direction of the vehicle body assembly 100, and the height direction of the vehicle main body 6 are the same

direction (i.e., the height direction of the vehicle body assembly 100).

[00235] In some embodiments of the present disclosure, as shown in FIG. 30 to FIG. 33, the vehicle body assembly 100 further includes an anti-collision cross beam 20, an energy absorption box 30, and a support member 40. The energy absorption box 30 is located between the longitudinal beam 82 and the anti-collision cross beam 20. Moreover, the energy absorption box 30 is fixedly connected to the longitudinal beam 82 and the anti-collision cross beam 20. The support member 40 is located at a side of the anti-collision cross beam 20 away from the energy absorption box 30, and is fixedly connected to the anti-collision cross beam 20.

[00236] The longitudinal beam 82, the anti-collision cross beam 20, and the energy absorption box 30 may each be made of a conventional steel material, thereby reducing the cost of vehicle development and vehicle operation. The anti-collision cross beam 20 may have a plurality of cavities 21. For example, the anti-collision cross beam 20 may have two, three, or four cavities 21. However, the present disclosure is not limited thereto. The anti-collision cross beam 20 may have other numbers of cavities 21, as long as the anti-collision cross beam 20 has a plurality of cavities 21. The present disclosure is described by taking the anti-collision cross beam 20 with two cavities 21 as an example. The plurality of cavities 21 may be arranged sequentially in the height direction of the vehicle, such that a cross-sectional shape of the anti-collision cross beam 20 may be in a zigzag shape or a zigzag-like shape. Moreover, a height dimension of the anti-collision cross beam 20 in the height direction of the vehicle may be A1, where 102mm≤A1≤122mm. That is, the height dimension A1 of the anti-collision cross beam 20 in the height direction of the vehicle may be 102 mm, 122 mm, and any value ranging from 102 mm to 122 mm. A length dimension of the anti-collision cross beam 20 in the length direction of the vehicle may be A2, where 35mm≤A2≤45mm. That is, the length dimension A2 of the anti-collision cross beam 20 in the length direction of the vehicle may be 35 mm, 45 mm, and any value ranging from 35 mm to 45 mm. A width dimension of the anti-collision cross beam 20 in the width direction of the vehicle may be A3, where 1005mm≤A3≤1335mm. That is, the width dimension A3 of the anti-collision cross beam 20 in the width direction of the vehicle may be 1005 mm, 1335 mm, and any value ranging from 1005 mm to 1335 mm. Moreover, in the width direction of the vehicle, the cavity 21 of the anti-collision cross beam 20 may be provided with a second recessed portion 22 extending in the width direction of the

vehicle. The energy absorption box 30 may also have an energy absorption box cavity, and a dimension of the energy absorption box cavity may be 174mm*71mm. With such an arrangement, in a case where performance of the anti-collision cross beam 20 and the energy absorption box 30 can be ensured to meet the requirements, weights of the anti-collision cross beam 20 and the energy absorption box 30 can be made minimum, thereby reducing the manufacturing cost of the anti-collision cross beam 20 and the energy absorption box 30, and further reducing the cost of vehicle development and vehicle operation.

[00237] The energy absorption box 30 is located between the longitudinal beam 82 and the anti-collision cross beam 20, and is fixedly connected to the longitudinal beam 82 and the anti-collision cross beam 20. For example, the energy absorption box 30 may be fixedly connected to the longitudinal beam 82 and the anti-collision cross beam 20 by welding or through bolts. However, the present disclosure is not limited thereto. The energy absorption box 30 may be fixedly connected to the longitudinal beam 82 and the anti-collision cross beam 20 by other means, as long as the fixed connection of the energy absorption box 30 with the longitudinal beam 82 and the anti-collision cross beam 20 can be achieved. The present disclosure is described by taking the fixed connection between the energy absorption box 30 and the anti-collision cross beam 20 through welding as an example. Since the welding connection has a high connection strength and rigidity, it can be ensured that the connection between the energy absorption box 30 and the anti-collision cross beam 20 does not fail in the event of a high-speed collision of the vehicle, thereby improving safety and reliability of the whole vehicle. Moreover, the welding connection is easy to process, saves steel materials, and can reduce the manufacturing cost of the vehicle.

[00238] By disposing the energy absorption box 30 between the longitudinal beam 82 and the anti-collision cross beam 20 and fixedly connecting the energy absorption box 30 to the longitudinal beam 82 and the anti-collision cross beam 20, when the vehicle is in a collision, the anti-collision cross beam 20 and the energy absorption box 30 can fully absorb the collision energy to protect the battery pack from damage during the collision, thereby improving the safety performance of the whole vehicle.

[00239] The support member 40 is located at the side of the anti-collision cross beam 20 away from the energy absorption box 30, and is fixedly connected to the anti-collision cross

beam 20. For example, the support member 40 may be fixedly connected to the anti-collision cross beam 20 by welding or through bolts. However, the present disclosure is not limited thereto. The support member 40 may be fixedly connected to the anti-collision cross beam 20 by other means, as long as the fixed connection between the support member 40 and the anti-collision cross beam 20 can be achieved. When the vehicle collides with a pedestrian, the support member 40 can play a supporting and protective role for pedestrian's legs. Moreover, the energy absorption box 30 collapses to absorb a large amount of collision energy, such that the longitudinal beam 82 does not deform, which can ensure repair economy of the whole vehicle, thereby reducing the cost of vehicle operation.

[00240] For the vehicle body assembly 100 according to the embodiments of the present disclosure, by fixedly connecting the energy absorption box 30 to the longitudinal beam 82 and the anti-collision cross beam 20, when the vehicle is in a collision, the anti-collision cross beam 20 and the energy absorption box 30 can fully absorb the collision energy to protect the battery pack from damage during the collision, thereby improving the safety performance of the whole vehicle. The support member 40 is located at the side of the anti-collision cross beam 20 away from the energy absorption box 30, and is fixedly connected to the anti-collision cross beam 20. When the vehicle collides with the pedestrian, the support member 40 can play a supporting and protective role for the pedestrian's legs. Moreover, the energy absorption box 30 collapses to absorb a large amount of collision energy, such that the longitudinal beam 82 does not deform, which can ensure the repair economy of the whole vehicle, thereby reducing the cost of vehicle operation.

[00241] In some embodiments of the present disclosure, as shown in FIG. 30, the support member 40 may include a fourth plate body 41, a fifth plate body 42, and a sixth plate body 44. The fifth plate body 42 is connected between the fourth plate body 41 and the sixth plate body 44, and is located at the side of the anti-collision cross beam 20 away from the energy absorption box 30 and spaced apart from the anti-collision cross beam 20. Both the fourth plate body 41 and the sixth plate body 44 are fixedly connected to the anti-collision cross beam 20.

[00242] The fifth plate body 42 is connected between the fourth plate body 41 and the sixth plate body 44. For example, the fifth plate body 42, the fourth plate body 41, and the sixth plate body 44 may be formed as an integral piece. Alternatively, the fifth plate body 42 may be

connected to the fourth plate body 41 and the sixth plate body 44 by welding. However, the present disclosure is not limited thereto. The fifth plate body 42 may be connected to the fourth plate body 41 and the sixth plate body 44 by other means, as long as the fifth plate body 42 is connected between the fourth plate body 41 and the sixth plate body 44. The fifth plate body 42 is located at the side of the anti-collision cross beam 20 away from the energy absorption box 30 and spaced apart from the anti-collision cross beam 20, such that the support member 40 has a support cavity. When the vehicle collides with the pedestrian, the support cavity of the support member 40 can absorb the collision energy, which can reduce damage to the anti-collision cross beam 20 and further improve the repair economy of the whole vehicle.

[00243] Both the fourth plate body 41 and the sixth plate body 44 are fixedly connected to the anti-collision cross beam 20. For example, the anti-collision cross beam 20 may be fixedly connected to the fourth plate body 41 and the sixth plate body 44 by welding or through bolts. However, the present disclosure is not limited thereto. The anti-collision cross beam 20 may be fixedly connected to the fourth plate body 41 and the sixth plate body 44 by other means, as long as the fourth plate body 41 and the sixth plate body 44 are fixedly connected to the anti-collision cross beam 20. The fixed connection between each of the fourth plate body 41 and the sixth plate body 44 and the anti-collision cross beam 20 can ensure a firmer connection between the support member 40 and the anti-collision cross beam 20, thereby improving stability and reliability of the whole vehicle.

[00244] In some embodiments of the present disclosure, as shown in FIG. 30, the fifth plate body 42 may have a second lightening hole 43, to reduce a weight of the support member 40 on a premise that the support member 40 meets strength and rigidity requirements, which is beneficial to the lightweight design of the vehicle and can also reduce the manufacturing cost of the whole vehicle. It should be noted that a plurality of second lightening holes 43 may be formed. For example, one, two, three, or four second lightening holes 43 may be formed. However, the present disclosure is not limited thereto, other numbers of second lightening holes 43 may be formed, as long as the fifth plate body 42 has the second lightening hole 43.

[00245] In some embodiments of the present disclosure, a length dimension of the support member 40 may be L1, and a length dimension of the anti-collision cross beam 20 may be L2, where $0.5L2 \leq L1 \leq L2$. That is, the length dimension L1 of the support member 40 may be 0.5L2,

L2, or any value ranging from 0.5L2 to L2. For example, the length dimension L1 of the support member 40 may be 0.5L2, 0.6L2, 0.7L2, 0.9L2, L2, or the like. However, the present disclosure is not limited thereto. The length dimension L1 of the support member 40 may also be other values ranging from 0.5L2 to L2, as long as the length dimension L1 of the support member 40 may be 0.5L2, L2, or any value ranging from 0.5L2 to L2. Therefore, with the length dimension L1 of the support member 40, where $0.5L2 \leq L1 \leq L2$, when the vehicle collides with the pedestrian, the support member 40 with sufficient length can enhance a supporting and protective effect of the support member 40 on the pedestrian.

[00246] In some embodiments of the present disclosure, as shown in FIG. 30, an end of the energy absorption box 30 away from the anti-collision cross beam 20 is connected to a third connection plate 31, and an end of the longitudinal beam 82 facing the energy absorption box 30 is connected to a fourth connection plate 11. The third connection plate 31 and the fourth connection plate 11 are assembled in a fitting manner to fix the energy absorption box 30 and the longitudinal beam 82.

[00247] The end of the energy absorption box 30 away from the anti-collision cross beam 20 may be connected to the third connection plate 31. For example, the energy absorption box 30 may be connected to the third connection plate 31 by welding or through bolts. However, the present disclosure is not limited thereto. The energy absorption box 30 may be connected to the third connection plate 31 by other means, as long as the end of the energy absorption box 30 away from the anti-collision cross beam 20 is connected to the third connection plate 31.

[00248] The end of the longitudinal beam 82 facing the energy absorption box 30 may be connected to the fourth connection plate 11. For example, the longitudinal beam 82 may be connected to the fourth connection plate 11 by welding or through bolts. However, the present disclosure is not limited thereto. The longitudinal beam 82 may be connected to the fourth connection plate 11 by other means, as long as the end of the longitudinal beam 82 facing the energy absorption box 30 is connected to the fourth connection plate 11.

[00249] The third connection plate 31 and the fourth connection plate 11 are assembled in a fitting manner to fix the energy absorption box 30 and the longitudinal beam 82. For example, the third connection plate 31 and the fourth connection plate 11 may be assembled in a fitting manner and connected by welding or through bolts. However, the present disclosure is not

limited thereto. The third connection plate 31 and the fourth connection plate 11 may be assembled in a fitting manner and connected by other connection means, as long as the energy absorption box 30 and the longitudinal beam 82 are fixedly connected through the assembly between the third connection plate 31 and the fourth connection plate 11 in a fitting manner.

[00250] Therefore, by assembling the third connection plate 31 and the fourth connection plate 11 in a fitting manner to fixedly connect the energy absorption box 30 and the longitudinal beam 82, a connection strength and rigidity between the energy absorption box 30 and the longitudinal beam 82 can be ensured, thereby avoiding a connection failure between the energy absorption box 30 and the longitudinal beam 82. Moreover, the fourth connection plate 11 can ensure a front strength of the longitudinal beam 82, to ensure that the longitudinal beam 82 does not absorb energy or deform during a low-speed collision of the vehicle, which can ensure the repair economy of the whole vehicle, thereby reducing the cost of vehicle operation.

[00251] It should be noted that each of the third connection plate 31 and the fourth connection plate 11 may be provided with a plurality of mounting flanges 12, which improve a strength and rigidity of the third connection plate 31 and a strength and rigidity of the fourth connection plate 11, and are also beneficial to improve impact resistance of the third connection plate 31 and the fourth connection plate 11, thereby enhancing the safety and reliability of the whole vehicle.

[00252] In some embodiments of the present disclosure, as shown in FIG. 32, the vehicle body assembly 100 may further include a structural reinforcement member 13 connected between the fourth connection plate 11 and the longitudinal beam 82. For example, the structural reinforcement member 13 may be connected to the fourth connection plate 11 and the longitudinal beam 82 by welding or through bolts. However, the present disclosure is not limited thereto. The structural reinforcement member 13 may be connected to the fourth connection plate 11 and the longitudinal beam 82 by other means, as long as the structural reinforcement member 13 is connected between the fourth connection plate 11 and the longitudinal beam 82. Therefore, by connecting the structural reinforcement member 13 between the fourth connection plate 11 and the longitudinal beam 82, it is possible to further improve the front strength of the longitudinal beam 82, to further ensure that the longitudinal beam 82 does not absorb energy or deform during the low-speed collision of the vehicle, thereby

further ensuring the repair economy of the whole vehicle and further reducing the cost of vehicle operation.

[00253] In some embodiments of the present disclosure, as shown in FIG. 32, the structural reinforcement member 13 may include a first reinforcement member 14 and a second reinforcement member 15. The first reinforcement member 14 is located outside the longitudinal beam 82 and fixedly disposed at the longitudinal beam 82. Moreover, the first reinforcement member 14 is fixedly connected to the fourth connection plate 11. The second reinforcement member 15 is located inside the longitudinal beam 82 and fixedly disposed at the longitudinal beam 82. Moreover, the second reinforcement member 15 is fixedly connected to the fourth connection plate 11.

[00254] Each of the first reinforcement member 14 and the second reinforcement member 15 may be an annular reinforcement plate, which can improve a strength and rigidity of each of the first reinforcement member 14 and the second reinforcement member 15 without increasing their weights, thereby saving material consumption, reducing the weight, and saving the cost.

[00255] The first reinforcement member 14 is located outside the longitudinal beam 82 and fixedly disposed at the longitudinal beam 82. For example, the first reinforcement member 14 may be connected to the longitudinal beam 82 by welding or through bolts. However, the present disclosure is not limited thereto. The first reinforcement member 14 may be connected to the longitudinal beam 82 by other means, as long as the first reinforcement member 14 is located outside the longitudinal beam 82 and fixedly disposed at the longitudinal beam 82. Moreover, the first reinforcement member 14 is fixedly connected to the fourth connection plate 11. For example, the first reinforcement member 14 may be connected to the fourth connection plate 11 by welding or through bolts. However, the present disclosure is not limited thereto. The first reinforcement member 14 may be connected to the fourth connection plate 11 by other means, as long as the first reinforcement member is fixedly connected to the fourth connection plate 11.

[00256] The second reinforcement member 15 is located inside the longitudinal beam 82 and fixedly disposed at the longitudinal beam 82. For example, the second reinforcement member 15 may be connected to the longitudinal beam 82 by welding or through bolts. However, the present disclosure is not limited thereto. The second reinforcement member 15 may be

connected to the longitudinal beam 82 by other means, as long as the second reinforcement member 15 is located inside the longitudinal beam 82 and fixedly disposed at the longitudinal beam 82. Moreover, the second reinforcement member 15 is fixedly connected to the fourth connection plate 11. For example, the second reinforcement member 15 may be connected to the fourth connection plate 11 by welding or through bolts. However, the present disclosure is not limited thereto. The second reinforcement member 15 may be connected to the fourth connection plate 11 by other means, as long as the second reinforcement member is fixedly connected to the fourth connection plate 11.

[00257] Therefore, by fixedly disposing the first reinforcement member 14 and the second reinforcement member 15 at the longitudinal beam 82 and fixedly connecting the first reinforcement member 14 and the second reinforcement member 15 to the fourth connection plate 11, a strength and rigidity of the front part of the longitudinal beam 82 can be further ensured, to further ensure that the longitudinal beam 82 does not absorb energy or deform during the low-speed collision of the vehicle, which can further ensure the repair economy of the whole vehicle and further reduce the cost of vehicle operation.

[00258] In some embodiments of the present disclosure, as shown in FIG. 30 and FIG. 33, the energy absorption box 30 may include a first energy absorption box segment 32 and a second energy absorption box segment 33 connected to the first energy absorption box segment 32. The first energy absorption box segment 32 is fixedly connected to the anti-collision cross beam 20, and the second energy absorption box segment 33 is fixedly connected to the longitudinal beam 82. A cross-sectional dimension of the first energy absorption box segment 32 gradually decreases in a direction from the anti-collision cross beam 20 to the longitudinal beam 82.

[00259] The energy absorption box 30 may include a first energy absorption box segment 32 and a second energy absorption box segment 33 connected to the first energy absorption box segment 32. For example, the first energy absorption box segment 32 and the second energy absorption box segment 33 may be formed as an integral piece or connected by welding. However, the present disclosure is not limited thereto. The first energy absorption box segment 32 and the second energy absorption box segment 33 may be connected by other means, as long as they are connected to each other.

[00260] The first energy absorption box segment 32 is fixedly connected to the anti-collision

cross beam 20. For example, the first energy absorption box segment 32 may be fixedly connected to the anti-collision cross beam 20 by welding or through bolts. However, the present disclosure is not limited thereto. The first energy absorption box segment 32 may be fixedly connected to the anti-collision cross beam 20 by other means, as long as the fixed connection between the first energy absorption box segment 32 and the anti-collision cross beam 20 can be achieved. The present disclosure is described by taking the fixed connection between the first energy absorption box segment 32 and the anti-collision cross beam 20 through welding as an example. The welding connection has a high connection strength and rigidity. In this way, it can be ensured that the connection between the energy absorption box 30 and the anti-collision cross beam 20 does not fail in the event of a high-speed collision of the vehicle, thereby improving the safety and reliability of the whole vehicle. Moreover, the welding connection is easy to process, saves the steel materials, and can reduce the manufacturing cost of the vehicle.

[00261] The second energy absorption box segment 33 is fixedly connected to the longitudinal beam 82. For example, the second energy absorption box segment 33 may be fixedly connected to the longitudinal beam 82 by welding or through bolts. However, the present disclosure is not limited thereto. The second energy absorption box segment 33 may be fixedly connected to the longitudinal beam 82 by other means, as long as the fixed connection between the second energy absorption box segment 33 and the longitudinal beam 82 can be achieved. The cross-sectional dimension of the first energy absorption box segment 32 gradually decreases in the direction from the anti-collision cross beam 20 to the longitudinal beam 82, such that a cross-sectional shape of the energy absorption box 30 is in a flared shape or a flared-like shape. With such an arrangement, a connection area between the energy absorption box 30 and the anti-collision cross beam 20 can be increased, thereby improving a connection strength between the energy absorption box 30 and the anti-collision cross beam 20, and further enhancing the safety performance and stability of the whole vehicle.

[00262] Further, the cross-sectional dimension of the first energy absorption box segment 32 is W1*W2. In an exemplary embodiment of the present disclosure, a height dimension of the first energy absorption box segment 32 in the height direction of the vehicle may be W1, where 90mm≤W1≤115mm. That is, the dimension W1 of the first energy absorption box segment 32 in the height direction of the vehicle may be 90 mm, 115 mm, and any value ranging from 90

mm to 115 mm. A width dimension of the first energy absorption box segment 32 in the width direction of the vehicle may be W2, where 80mm≤W2≤85mm. That is, the dimension W2 of the first energy absorption box segment 32 in the width direction of the vehicle may be 80 mm, 85 mm, and any value ranging from 80 mm to 85 mm. With such an arrangement, it can be ensured to the maximum extent that, when the vehicle is in a collision, an impact received by the anti-collision cross beam 20 is absorbed by the energy absorption box 30 and transmitted to the rear of the vehicle through a linear transmission path.

[00263] In some embodiments of the present disclosure, as shown in FIG. 30, a first crushing rib 34 may be formed at the second energy absorption box segment 33 and may be recessed towards an interior of the energy absorption box 30. When the vehicle is in a collision, the first crushing rib 34 can collapse and deform to absorb a large amount of collision energy, thereby reducing a risk of damage to the longitudinal beam 82 behind the energy absorption box 30 caused by the collision energy, and further improving the safety and reliability of the vehicle and people.

[00264] In some embodiments of the present disclosure, as shown in FIG. 30 and FIG. 33, a plurality of first crushing ribs 34 may be provided, and are arranged sequentially in an arrangement direction of the first energy absorption box segment 32 and the second energy absorption box segment 33.

[00265] The plurality of first crushing ribs 34 may be provided. For example, two, three, or four may be provided. However, the present disclosure is not limited thereto, other numbers of first crushing ribs 34 may be provided, as long as the plurality of first crushing ribs 34 are provided. The present disclosure is described by taking two first crushing ribs 34 as an example. In an exemplary embodiment of the present disclosure, in the direction from the anti-collision cross beam 20 to the longitudinal beam 82, a distance between one of the two first crushing ribs 34 closest to the anti-collision cross beam 20 and the anti-collision cross beam 20 may be D1, where 28mm≤D1≤50mm. That is, the distance D1 between the one of the two first crushing ribs 34 closest to the anti-collision cross beam 20 and the anti-collision cross beam 20 may be 28 mm, 50 mm, and any value ranging from 28 mm to 50 mm. In the direction from the anti-collision cross beam 20 to the longitudinal beam 82, a width of the first crushing rib 34 may be D2, where 17mm≤D2≤23mm. That is, the width D2 of the first crushing rib 34 may be 17 mm,

23 mm, and any value ranging from 17 mm to 23 mm. Moreover, the plurality of first crushing ribs 34 are arranged sequentially in the arrangement direction of the first energy absorption box segment 32 and the second energy absorption box segment 33. Therefore, when the vehicle is in a low-speed collision, the whole vehicle can fully absorb the collision energy after the deformation of the energy absorption box 30 is completed, thereby preventing the longitudinal beam 82 from being deformed. Moreover, during a low-speed collision and a frontal high-speed collision of the vehicle, the first crushing ribs 34 participate in energy absorption and deformation, and can achieve stable crushing without instability. In this way, the energy absorption box 30 does not produce obvious lateral plastic deformation, which can improve a collision and energy absorption effect and crushing stability of the vehicle body assembly 100, and also ensure the repair economy of the whole vehicle, reducing the cost of vehicle operation.

[00266] In some embodiments of the present disclosure, as shown in FIG. 30, a second crushing rib 16 may be formed at the longitudinal beam 82 and may be recessed towards an interior of the longitudinal beam 82. When the vehicle is in a high-speed collision, after the anti-collision cross beam 20 and the energy absorption box 30 collapse to absorb the collision energy, the second crushing rib 16 can further collapse to absorb the residual collision energy, thereby further ensuring that the battery pack of the vehicle is not damaged, and further improving the safety performance and reliability of the vehicle.

[00267] Further, a mounting box 17 may be provided below the longitudinal beam 82 in the height direction of the vehicle. Moreover, in the width direction of the vehicle, a lower end of a side wall of the mounting box 17 facing the outer side of the vehicle is located at the lowest position, such that the mounting box 17 is used for centralized mounting of other components, thereby improving a space utilization rate inside the vehicle.

[00268] In some embodiments of the present disclosure, the anti-collision cross beam 20 has a width dimension G1, a length dimension G2, and a height dimension G3, where $35mm \leq G1 \leq 45mm$, $1015mm \leq G2 \leq 1215mm$, and $102mm \leq G3 \leq 122mm$.

[00269] The width dimension G1, the length dimension G2, and the height dimension G3 of the anti-collision cross beam 20 may satisfy $35mm \leq G1 \leq 45mm$, $1015mm \leq G2 \leq 1215mm$, and $102mm \leq G3 \leq 122mm$. That is, the width dimension G1 of the anti-collision cross beam 20 may be 35 mm, 45 mm, or any value ranging from 35 mm to 45 mm. For example, the width

dimension G1 of the anti-collision cross beam 20 may be 35 mm, 36 mm, 37 mm, 40 mm, 44 mm, 45 mm, or the like. However, the present disclosure is not limited thereto. The width dimension G1 of the anti-collision cross beam 20 may also be other values ranging from 35 mm to 45 mm, as long as the width dimension G of the anti-collision cross beam 20 is 35 mm, 45 mm, or any value ranging from 35 mm to 45 mm.

[00270] The length dimension G2 of the anti-collision cross beam 20 may be 1015 mm, 1215 mm, or any value ranging from 1015 mm to 1215 mm. For example, the length dimension G2 of the anti-collision cross beam 20 may be 1015 mm, 1016 mm, 1020 mm, 1200 mm, 1211 mm, 1215 mm, or the like. However, the present disclosure is not limited thereto. The length dimension G2 of the anti-collision cross beam 20 may also be other values ranging from 1015 mm to 1215 mm, as long as the length dimension G2 of the anti-collision cross beam 20 is 1015 mm, 1215 mm, or any value ranging from 1015 mm to 1215 mm.

[00271] The height dimension G3 of the anti-collision cross beam 20 may be 102 mm, 122 mm, or any value ranging from 102 mm to 122 mm. For example, the height dimension G3 of the anti-collision cross beam 20 may be 102 mm, 103 mm, 105 mm, 108 mm, 115 mm, 122 mm, or the like. However, the present disclosure is not limited thereto. The height dimension G3 of the anti-collision cross beam 20 may also be other values ranging from 102 mm to 122 mm, as long as the height dimension G3 of the anti-collision cross beam 20 is 102 mm, 122 mm, or any value ranging from 102 mm to 122 mm.

[00272] In an exemplary embodiment of the present disclosure, specific values of the width dimension G1, the length dimension G2, and the height dimension G3 of the anti-collision cross beam 20 can be reasonably set as desired, as long as they satisfy $35mm \leq G1 \leq 45mm$, $1015mm \leq G2 \leq 1215mm$, and $102mm \leq G3 \leq 122mm$. With such an arrangement, in a case of ensuring a strength and rigidity of the anti-collision cross beam 20, a weight of the anti-collision cross beam 20 can be reduced, thereby reducing the manufacturing cost of the anti-collision cross beam 20 and also facilitating the lightweight design of the vehicle.

[00273] The vehicle according to the embodiments of the present disclosure includes the vehicle body assembly 100 according to the above embodiments. By configuring the battery pack 5 to form the at least part of the floor of the vehicle body assembly 100, a part of the floor of the conventional body can be eliminated, which is beneficial to the lightweight design of the

vehicle and the improvement of the endurance mileage of the vehicle. Moreover, the gap between the vehicle main body 6 and the battery pack 5 can be sealed through the sealing assembly 7 and the dash panel 621, which can improve the sealing performance of the passenger compartment, and thus be beneficial to enhancing the ride comfort of the vehicle.

[00274] In the description of the present disclosure, it should be understood that, the orientation or the position indicated by terms such as “center”, “longitudinal”, “lateral”, “length”, “width”, “thickness”, “over”, “below”, “front”, “rear”, “left”, “right”, “vertical”, “horizontal”, “top”, “bottom”, “inner”, “outer”, “clockwise”, “anti-clockwise”, “axial”, “radial”, and “circumferential” should be construed to refer to the orientation and the position as shown in the drawings, and is only for the convenience of describing the present disclosure and simplifying the description, rather than indicating or implying that the associated device or element must have a specific orientation, or be constructed and operated in a specific orientation, and therefore cannot be understood as a limitation of the present disclosure.

[00275] In the description of the present disclosure, “the first feature” and “the second feature” may include one or more of these features.

[00276] In the description of the present disclosure, “plurality” means two or more.

[00277] In the description of the present disclosure, the first feature “on” or “under” the second feature may mean that the first feature is in direct contact with the second feature, or the first and second features are in indirect contact through another feature between the first and second features.

[00278] In the description of the present disclosure, the first feature “above” the second feature means that the first feature is directly above or obliquely above the second feature, or simply means that the level of the first feature is higher than that of the second feature.

[00279] Throughout this specification, description with reference to “an embodiment”, “some embodiments”, “an illustrative embodiment”, “an example”, “a specific example”, “some examples”, or the like 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. The appearances of the above phrases in various places throughout this specification are not necessarily referring to the same embodiment or example of the present disclosure. Further, the particular features, structures,

materials, or characteristics described here may be combined in any suitable manner in one or more embodiments or examples.

[00280] Although embodiments of the present disclosure have been illustrated and described, it is conceivable for those of ordinary skill in the art that various changes, modifications, replacements, and variations can be made to these embodiments without departing from the principles and spirit of the present disclosure. The scope of the present disclosure shall be defined by the claims as appended and their equivalents.

CLAIMS

What is claimed is:

1. A vehicle body assembly of a vehicle, comprising:

a vehicle main body having a mounting notch, wherein the vehicle main body comprises a sill beam defining a receiving cavity;

a battery pack disposed at the vehicle main body and shielding the mounting notch, wherein the battery pack is configured to form at least part of a floor of the vehicle body assembly;

a sealing assembly and a dash panel connected to each other to form an annular structure, at least part of the sealing assembly and at least part of the dash panel being both located between the vehicle main body and the battery pack to seal a gap between the vehicle main body and the battery pack, and the sealing assembly being connected to the sill beam; and

a reinforcement beam disposed in the receiving cavity.

2. The vehicle body assembly of the vehicle according to claim 1, wherein:

the annular structure has one of a sealing protrusion and a sealing groove; and

the battery pack has the other one of the sealing protrusion and the sealing groove,

wherein the sealing protrusion and the sealing groove are engaged in a sealing manner.

3. The vehicle body assembly of the vehicle according to claim 2, wherein the sealing assembly comprises two side sealing members and a rear sealing member, wherein:

the two side sealing members are arranged opposite to each other and spaced apart from each other in a second direction of the vehicle body assembly;

the dash panel, one of the two side sealing members, the rear sealing member, and the other one of the two side sealing members are sequentially connected end to end; and

each of the two side sealing members comprises a side body and a side connection flange connected to the side body, the sealing protrusion or the sealing groove being disposed at the side body, and the side connection flange being capable of being connected to the sill beam.

4. The vehicle body assembly of the vehicle according to claim 3, wherein the side connection flange extends with an extension dimension E1 in a height direction of the vehicle

body assembly, where 10 mm≤E1≤18 mm, wherein the height direction is perpendicular to the second direction.

5. The vehicle body assembly of the vehicle according to claim 3 or 4, wherein the dash panel comprises a dash body and a dash flange connected to the dash body, wherein:

the sealing protrusion or the sealing groove is disposed at the dash body;

the dash flange is adapted to be connected to an A-pillar of the vehicle body assembly and is partially sandwiched between the side connection flange and the A-pillar; and

in a first direction of the vehicle body assembly, a length of the dash flange sandwiched between the side connection flange and the A-pillar is E2, where 10 mm≤E2≤18 mm, wherein the first direction is perpendicular to the second direction.

6. The vehicle body assembly of the vehicle according to any one of claims 3 to 5, wherein the rear sealing member comprises a rear body and a rear connection flange connected to the rear body, wherein:

the sealing protrusion or the sealing groove is disposed at the rear body;

the rear connection flange is capable of being connected to the sill beam and is partially sandwiched between the side connection flange and the sill beam; and

in a first direction of the vehicle body assembly, a length of the rear connection flange sandwiched between the side connection flange and the sill beam is E3, where 10 mm≤E3≤18 mm, wherein the first direction is perpendicular to the second direction.

7. The vehicle body assembly of the vehicle according to any one of claims 1 to 6, further comprising:

a longitudinal beam and an A-pillar, the longitudinal beam comprising a first longitudinal beam segment and a second longitudinal beam segment, wherein the second longitudinal beam segment has an end connected to the first longitudinal beam segment and an opposite end connected to the A-pillar, and wherein the second longitudinal beam segment is arc-shaped and is recessed towards an inner side of the vehicle;

a first connection member at least partially located below the longitudinal beam in a height direction of the vehicle body assembly, the first connection member being connected to the longitudinal beam, the A-pillar, and the dash panel; and

a second connection member, the first connection member and the dash panel together

defining a first cavity structure, wherein the first cavity structure has an open end facing an outer side of the vehicle, and wherein at least part of the second connection member encloses the open end.

8. The vehicle body assembly of the vehicle according to claim 7, wherein the first connection member comprises a connection segment and a connection body, wherein:

the connection segment has an end connected to the longitudinal beam and an opposite end connected to the connection body; and

the connection body is connected to the A-pillar and the dash panel.

9. The vehicle body assembly of the vehicle according to claim 8, wherein the connection body comprises a first sub-body, a second sub-body, and a third sub-body, wherein:

the first sub-body is connected to the connection segment and the A-pillar; and

each of the second sub-body and the third sub-body is connected between the first sub-body and the dash panel.

10. The vehicle body assembly of the vehicle according to claim 9, wherein:

the second sub-body is at least partially located at a rear side of the first sub-body in a first direction of the vehicle body assembly; and

the third sub-body is at least partially located at a side of the first sub-body away from the A-pillar in a second direction of the vehicle body assembly, wherein the height direction, the first direction, and the second direction are perpendicular to one another.

11. The vehicle body assembly of the vehicle according to any one of claims 1 to 10, further comprising:

a fourth connection member connected between the sill beam and the reinforcement beam, wherein the fourth connection member is disposed at each of two ends of the reinforcement beam in a first direction of the vehicle, and wherein a spacing distance between the two fourth connection members is F1, where 400 mm≤F1≤500 mm.

12. The vehicle body assembly of the vehicle according to claim 11, wherein the fourth connection member comprises a first connection plate and a second connection plate connected to the first connection plate, wherein:

an angle is formed between the first connection plate and the second connection plate;

the first connection plate is connected to the reinforcement beam;

the second connection plate is connected to the sill beam; and

the second connection plate has a notch extending through the second connection plate in a thickness direction of the second connection plate.

13. The vehicle body assembly of the vehicle according to claim 11 or 12, further comprising a fifth connection member located in the receiving cavity and connected between the sill beam and the reinforcement beam, wherein:

the fifth connection member is disposed at each of the two ends of the reinforcement beam in the first direction; and

in a height direction of the vehicle, an overlapping region exists between an orthographic projection of the fourth connection member and an orthographic projection of the fifth connection member.

14. The vehicle body assembly of the vehicle according to any one of claims 1 to 13, further comprising a dash middle cross beam, a front cross beam for front seat mounting, and a middle channel, the middle channel comprising a middle channel body, wherein the middle channel body comprises a first channel segment and a second channel segment connected to the first channel segment, wherein:

an end portion of the first channel segment away from the second channel segment is connected to the dash middle cross beam;

an end portion of the second channel segment away from the first channel segment is connected to the front cross beam for front seat mounting;

an end portion of the first channel segment away from the second channel segment is located at a higher level than the second channel segment; and

the first channel segment is constructed as a downwardly recessed arc shape.

15. The vehicle body assembly of the vehicle according to any one of claims 1 to 14, further comprising a longitudinal beam, an anti-collision cross beam, an energy absorption box, and a support member, wherein:

the energy absorption box is located between the longitudinal beam and the anti-collision cross beam and fixedly connected to the longitudinal beam and the anti-collision cross beam;

the support member is located at a side of the anti-collision cross beam away from the energy absorption box; and

the support member is fixedly connected to the anti-collision cross beam.

16. The vehicle body assembly of the vehicle according to claim 15, wherein the energy absorption box comprises a first energy absorption box segment and a second energy absorption box segment connected to the first energy absorption box segment, wherein:

the first energy absorption box segment is fixedly connected to the anti-collision cross beam;

the second energy absorption box segment is fixedly connected to the longitudinal beam; and

a cross-sectional dimension of the first energy absorption box segment gradually decreases in a direction from the anti-collision cross beam to the longitudinal beam.

17. A vehicle, comprising:

the vehicle body assembly of the vehicle according to any one of claims 1 to 16.