

CARRIER, ARMREST INSTALLATION UNIT, HEIGHT ADJUSTMENT MECHANISM

CROSS-REFERENCE OF RELATED DISCLOSURE

[0001] This application claims the priorities of Chinese patent application No. 202310344611.7, filed on March 31, 2023, Chinese patent application No. 202310513910.9, filed on May 08, 2023, Chinese patent application No. 202310703429.6, filed on June 13, 2023, Chinese patent application 202311206991.4, filed on September 18, 2023, Chinese patent application No. 202311281801.5, filed on September 28, 2023, and Chinese patent application No. 202410348461.1 filed on March 25, 2024, the entire contents of which are incorporated herein by reference in their entireties.

TECHNICAL FIELD

[0002] The present disclosure relates to a carrier, an armrest installation unit, and a height adjustment mechanism.

BACKGROUND

[0003] Carriers, such as a child stroller, a child dining chair, and a child tricycle, are increasingly widely used in families in need. Currently, there are several issues with existing carriers on the market. Taking the child strollers as an example, for the purpose of storage and transportation, most of the child strollers have a foldable frame, but the operation of the folding mechanism thereof is complex and inconvenient to use. Additionally, during the folding process of the frame, the backrest frame is prone to sway towards the seat frame due to the pushing force applied thereto. Besides, some child strollers have a handle frame switchable between frontward and rearward orientations. However, the switching of the handle frame between the frontward and rearward orientations may cause the movement of the seat assembly and in turn the change in the adjustment of the angle between the seat assembly and the backrest assembly, making such adjustment of the angle difficult for the user. In addition, the child stroller typically has an armrest body detachably connected to two armrest rods. Currently, the structure for the detachable connection between the handle body and the armrest rod is complex. The carrier such as the child stroller may also have a footrest. Due to the different leg lengths and sitting postures of different riders, it is often necessary to adjust the footrest, especially in the height direction, to reduce the pressure on the legs of the riders and improve the seating comfort. However, the existing height adjustment mechanisms are often structurally complex and inconvenient to operate, thus failing to meet the consumer needs.

SUMMARY

[0004] In the first aspect of the present disclosure, a carrier is provided, including a backrest assembly, a carrier frame switchable between a folded state and expanded state, a seat assembly movably mounted to the carrier frame, and a connecting rod assembly movably connected to each of the carrier frame, the seat assembly, and the backrest assembly. The carrier frame drives the backrest assembly to fold toward the seat assembly via the connecting rod assembly when the carrier frame

switches from the expanded state to the folded state.

[0005] In some embodiments, the connecting rod assembly includes a first connecting rod and a second connecting rod. The first connecting rod has a first movement section and a first pivot section. The first movement section is movably connected to the seat assembly. The first pivot section is pivotally connected to the carrier frame. The second connecting rod has a second movement section and a second pivot section. The second movement section is movably connected to the first connecting rod. The second pivot section is pivotally connected to the backrest assembly.

[0006] In some embodiments, the carrier frame includes a seat tube extending in a front-rear direction of the carrier. The seat assembly includes a movable frame slidably disposed on the seat tube. The first movement section is movably connected to the movable frame.

[0007] In some embodiments, the movable frame is provided with a connecting portion. The connecting portion of the movable frame is provided with a guiding groove. The first movement section is inserted into the guiding groove and movable along the guiding groove.

[0008] In some embodiments, the guiding groove includes a first groove section and a second groove section in communication with each other. The first groove section extends in a movement direction of the movable frame. The second groove section extends in a direction intersecting with the extending direction of the first groove section.

[0009] In some embodiments, the guiding groove has a first end and a second end. The first movement section is located at the first end when the carrier frame is in the expanded state. The first movement section is located at the second end when the carrier frame is in the folded state.

[0010] In some embodiments, the connecting portion of the movable frame is provided with a groove mouth. The guiding groove is provided on and extends through one or both of opposite side walls of the groove mouth. The first movement section is inserted into the groove mouth and slidably fitted to the guiding groove.

[0011] In some embodiments, the carrier frame includes a handle frame pivotally connected to the seat tube. The handle frame is operable to rotate relative to the seat tube so that a travel direction of the carrier frame is switched between a first travel direction and a second travel direction. During the switching of the travel direction of the carrier frame from the first travel direction to the second travel direction, the handle frame drives the movable frame to move in the first travel direction along the seat tube, and/or the handle frame drives the first connecting rod to move in the second travel direction.

[0012] In some embodiments, the movable frame has an engagement portion. When the carrier frame is in the expanded state, the engagement portion engages the second movement section. During the switching of the travel direction of the carrier frame by operating the handle frame, the engagement portion disengages from the second movement section.

[0013] In some embodiments, the first connecting rod has a driving groove between the first movement section and the first pivot section. The second movement section is inserted into the driving groove and slidable along the driving groove.

[0014] In some embodiments, the backrest assembly includes a first backrest frame, a second backrest frame, and a backrest tube. A first end of the first backrest frame is pivotally connected to the second pivot section of the second connecting rod. A second end of the first backrest frame is pivotally connected to a first end of the second backrest frame. A second end of the second backrest frame is pivotally connected to a first end of the backrest tube. A second end of the backrest tube, a section of the second connecting rod between the second movement section and the second pivot section, and the movable frame are pivotally connected by a first connecting shaft.

[0015] In some embodiments, the second connecting rod includes a first rod part and a second rod part connected to each other and form an angle therebetween. The second movement section is located at an end of the first rod part away from the second rod part. The second pivot section is located on the second rod part. The first connecting shaft is located at a junction of the first rod part and the second rod part.

[0016] In some embodiments, the backrest assembly further includes a connecting harness and a harness regulator. Each of lateral sides of the carrier frame is provided with the connecting rod assembly. One end of the connecting harness is connected to an end of the second rod part away from the first rod part at one of the lateral sides of the carrier frame. The other end of the connecting harness passes across a side of backrest tube facing away from the seat assembly to be connected to an end of the second rod part away from the first rod part at the other one of the lateral sides of the carrier frame. The harness regulator is disposed on the connecting harness for adjusting the length of the connecting harness.

[0017] In some embodiments, the backrest assembly further includes a limiting plate pivotally connected between the backrest tube and the second connecting rod via the first connecting shaft.

[0018] In some embodiments, the carrier frame includes a handle frame and an auxiliary frame movably connected to the handle frame. The connecting rod assembly is pivotally connected to the auxiliary frame. The handle frame is operatable to cause the carrier frame to fold, and cause the backrest assembly to fold toward the seat assembly via the linkage of the connecting rod assembly with the auxiliary frame and the seat assembly.

[0019] In the second aspect of the present disclosure, a carrier is provided, including a foldable carrier frame, a limiting block disposed on the carrier frame and provided with a telescoping portion, a movable frame disposed on the carrier frame, and a backrest frame disposed on the carrier frame and having a movement end. When the carrier frame switches from an expanded state to a folded state, the backrest frame rotates in a first direction toward the movable frame, the telescoping portion abuts against the movement end to apply a force in the second direction opposite to the first direction.

[0020] In some embodiments, the limiting block further includes a limiting body secured to the carrier frame. The telescoping portion includes a sliding block in sliding fit with the limiting body and used to abut against the movement end and an elastic restoring member sandwiched between the limiting body and the sliding block.

[0021] In some embodiments, the limiting body has a guiding groove. The telescoping portion is mounted in the guiding groove. The sliding block is capable of elastically telescoping with respect to a groove mouth of the guiding groove under the action of the elastic restoring member.

5 [0022] In some embodiments, a prolonged support portion extending outwardly is provided at a lower portion of the groove mouth of the guiding groove, and/or a limiting projection is provided at an upper portion of the groove mouth of the guiding groove.

[0023] In some embodiments, a limiting mechanism is provided between the sliding block and the limiting body to limit the sliding travel of the sliding block. The limiting mechanism includes a limiting hole provided on one of a groove wall of the guiding groove and the sliding block, and
10 a limiting protrusion provided on the other one of the groove wall of the guiding groove and the sliding block. The limiting protrusion is in sliding fit with the limiting hole.

[0024] In some embodiments, the limiting body has a first end face. When the carrier frame is in the expanded state, the first end face abuts against the movement end to limit the rotation of the backrest frame.

15 [0025] In some embodiments, the first end face is located above the telescoping portion, and/or the limiting projection is provided at a junction of an end face of the groove mouth and the first end face.

[0026] In some embodiments, the limiting block further includes a limiting body secured to the carrier frame. The telescoping portion is mounted to the limiting body and is elastically deformable .

[0027] In some embodiments, the movable frame is movably disposed on the carrier frame. When
20 the carrier frame is in the expanded state, the movement end is sandwiched between the limiting block and the movable frame. During the switching of the carrier frame to the folded state, the movable frame moves away from the limiting block to allow the backrest frame to rotate.

[0028] In some embodiments, the carrier frame includes a seat tube. The limiting block is secured to the seat tube. The movable frame is in sliding fit with the seat tube. The backrest frame is pivotally
25 connected to the movable frame. The carrier frame further includes a handle frame and a drive assembly. The handle frame in rotation drives the movable frame to move along the seat tube via the drive assembly.

[0029] In some embodiments, the driving assembly includes a first drive rod, a second drive rod, and a pivot shaft. The pivot shaft is inserted through both the first drive rod and the handle frame.
30 The second driving rod is pivotally connected to the movable frame. The handle frame in rotation drives the first drive rod to rotate via the pivot shaft. The limiting block further includes a limiting body. The limiting body is provided with a hole. The pivot shaft is further inserted through the hole of the limiting body to limit the movement of the limiting block relative to the seat tube.

[0030] In the third aspect of the present disclosure, a carrier is provided, including a carrier frame,
35 a seat assembly mounted to the carrier frame and movable in a front-rear direction of the carrier relative to the carrier frame between a first position and a second position, a backrest assembly mounted to the seat assembly and adjustable in angle relative to the seat assembly, a handle frame

pivotaly connected to the carrier frame, and a linkage mechanism. When the handle frame pivots relative to the carrier frame, the handle frame drives the seat assembly to move in the front-rear direction of the carrier frame relative to the carrier frame. The linkage mechanism is disposed on a side of the seat assembly and connected to the backrest assembly. The linkage mechanism keeps the angle adjustment range of the backrest assembly relative to the seat assembly unchanged when the seat assembly moves between the first position and the second position.

[0031] In some embodiments, the backrest assembly includes a backrest tube and a harness. A bottom section of the backrest tube is pivotaly connected to the movable frame. An end of the harness is connected to the linkage mechanism. The backrest tube is supported on the harness. The linkage mechanism is also connected to the seat assembly. The linkage mechanism enables the end of the harness to move synchronously with the seat assembly in the front-rear direction of the carrier frame.

[0032] In some embodiments, the linkage mechanism includes a linkage rod. A first end of the linkage rod is connected to the seat assembly. A second end of the linkage rod is connected to the end of the harness. When the seat assembly moves in the front-rear direction of the carrier frame, the seat assembly drives the end of the harness to move in the front-rear direction of the carrier frame via the linkage rod.

[0033] In some embodiments, the carrier frame includes two lateral frames and a seat tube mounted between the two lateral frames. The seat assembly includes a moveable frame mounted on the seat tube. When the handle frame pivots relative to the carrier frame, the handle frame drives the moveable frame to move in the front-rear direction of the carrier frame relative to the seat tube. The first end of the linkage rod is connected to the moveable frame. The second end of the linkage rod is movably connected to the lateral frame in the front-rear direction of the carrier frame. When the moveable frame moves in the front-rear direction of the carrier frame relative to the seat tube, the moveable frame drives the end of the harness to move in the front-rear direction of the carrier frame via the linkage rod.

[0034] In some embodiments, the linkage rod is disposed between the moveable frame and the lateral frame. The moveable frame is provided with a recessed portion on a side thereof facing the linkage rod. The first end of the linkage rod is received in the recessed portion.

[0035] In some embodiments, the linkage rod is provided with a first protrusion on a side thereof facing the moveable frame. A socket or a through-hole is provided in the recessed portion of the moveable frame. The first protrusion is received in the socket or the through-hole.

[0036] In some embodiments, the moveable frame is provided with a second protrusion on a side thereof facing away from the linkage rod. The linkage mechanism further includes a resilient member. One end of the resilient member is looped around a periphery of the second protrusion, and the other end of the resilient member is hooked to a side of the linkage rod away from the movable frame.

[0037] In some embodiments, the backrest assembly includes a backrest tube and a harness. A

bottom section of the backrest tube is pivotally connected to the movable frame. An end of the harness is connected to the linkage mechanism. The backrest tube is supported on the harness. The linkage mechanism includes a transmission assembly and a sliding member. The sliding member is slidably mounted to the carrier frame in the front-rear direction of the carrier frame and connected to the end of the harness. The transmission assembly is connected to each of the handle frame and the sliding member, and converts the rotation of the handle frame to the movement of the sliding member in the front-rear direction of the carrier frame, thereby driving the end of the harness to move synchronously with the seat assembly in the front-rear direction of the carrier frame.

[0038] In some embodiments, the sliding member includes a sliding portion and a connecting portion. The connecting portion is connected to the transmission assembly. The sliding portion is fixedly connected to the end of the harness. The transmission assembly drives the sliding portion to move in the front-rear direction of the carrier frame via the connecting portion.

[0039] In some embodiments, the transmission assembly includes a linkage gear. The sliding portion is provided with teeth thereon. The handle frame is fixedly connected to the pivot shaft inserted through the carrier frame. The pivot shaft is connected to the linkage gear to drive the linkage gear to rotate. The linkage gear engages the teeth of the sliding portion such that the linkage gear in rotation drives the sliding portion to move in the front-rear direction of the carrier frame.

[0040] In some embodiments, the transmission assembly further includes a driven gear and an output gear. The linkage gear engages the driven gear. The driven gear further engages the output gear. The output gear further engages the teeth of the sliding portion.

[0041] In some embodiments, the transmission assembly further includes a driving wheel and a traction member. The driving wheel is sleeved outside the pivot shaft and capable of rotating with the pivot shaft. The traction member is connected to each of the driving wheel and the linkage gear. The driving wheel in rotation drives the linkage gear to rotate via the traction member.

[0042] In some embodiments, the traction member is a cable. One end of the cable is fixed to a first position of the linkage gear. The other end of the cable extends to the driving wheel, wraps around the driving wheel, and then extends back to the linkage gear to be fixed at a second position opposite the first position of the linkage gear. A section of the cable wrapping around the driving wheel is further fixed to a position of the driving wheel. The rotation of the driving wheel changes lengths of cable sections on both sides of the driving wheel and the linkage gear, causing the linkage gear to rotate.

[0043] In some embodiments, the carrier frame has a cavity. The carrier further includes a mounting seat disposed in the cavity of the carrier frame. The mounting seat includes a housing. A baffle is provided on an inner wall of the housing to divide a space of the housing into a first accommodation space and a second accommodation space. The sliding portion of the sliding member is disposed in the first accommodation space and is slidably disposed on baffle. The transmission assembly is disposed in the second accommodation space. The mounting seat also includes a cover mounted to

the housing 1710 and defining the second accommodation space together with the housing. The transmission assembly is disposed between the housing and the cover. One end of the connecting portion of the sliding member passes over an upper end of the cover to extend outside the cover. The cover defines an opening through which the transmission assembly is connected to the connecting
5 portion of the sliding member.

[0044] In some embodiments, the carrier frame includes two lateral frames. The seat assembly is mounted between the two lateral frames. The lateral frame is provided with a sliding groove extending in the front-rear direction of the carrier frame. The end of the harness is slidably mounted to the sliding groove. When the handle frame pivots relative to the carrier frame, the linkage mechanism
10 enables the end of the harness to slide in the front-rear direction of the carrier frame in the sliding groove.

[0045] In some embodiments, the backrest assembly includes a backrest tube and a harness. A bottom section of the backrest tube is pivotally connected to the seat assembly. An end of the harness is connected to the linkage mechanism. The backrest tube is supported on the harness. The linkage
15 mechanism includes a guiding member and a connecting member. The guiding member is attached to the carrier frame. The end of the harness passes around the guiding member to be connected to the connecting member. The connecting member is further connected to the seat assembly and is capable of moving with the seat assembly in the front-rear direction of the carrier frame to drive the backrest tube to move synchronously with the seat assembly via the harness. The connecting member is a
20 separate member or is integrated with the harness.

[0046] In the fourth aspect of the present disclosure, an armrest installation unit is provided, including a first connection seat provided with an engaged member, a first magnetic element mounted to the first connection seat, a second connection seat provided with an engaging member, and a second magnetic element mounted to the second connection seat. The first connection seat and the second
25 connection seat are detachably connected to each other via both the detachable snap-fit of the engaging member with the engaged member and the magnetic adsorption between the first magnetic element and the second magnetic element.

[0047] In some embodiments, the second connection seat has a first accommodation space and an insertion hole in communication with the first accommodation space. The engaging member includes
30 at least one elastic arm disposed in the first accommodation space. The engaged member is adapted to enter or exit the first accommodation space through the insertion hole. The engaged member is provided with at least one engagement groove. The at least one engagement groove is adapted to be in snap-fit with the at least one elastic arm.

[0048] In some embodiments, the engaged member includes a projecting portion. The at least one
35 engagement groove is provided on the projecting portion. The projecting portion is adapted to protrude into the second connection seat to enable the snap-fit of the at least one engagement groove with the at least one elastic arm.

[0049] In some embodiments, the first connection seat is provided with a rotation-limiting platform. The rotation-limiting platform is non-rotatably fitted into the insertion hole. The projecting portion is disposed on the rotation-limiting platform. The first connection seat has a first accommodation cavity in the projecting portion, and the first magnetic element is mounted into the first accommodation cavity.

[0050] In some embodiments, at least one engagement groove includes an annular groove provided on an outer peripheral wall of the projecting portion. The at least one elastic arm includes two elastic arms opposite to each other and forming a second accommodation space for the projecting portion. When the projecting portion is located in the second accommodation space, the two elastic arms embrace the annular groove.

[0051] In some embodiments, a support seat is disposed in the first accommodation space of the second connection seat. First ends of the two elastic arms are connected by a fixing portion fixed to the support seat. Second ends of the two elastic arms are opposite to and spaced apart from each other. The support seat is provided with a spacer member proximate to and located between the first ends of the two elastic arms. The spacer member is adapted to abut against the two elastic arms.

[0052] In some embodiments, the second connection seat is further mounted with a releasing member and an elastic restoring member. The releasing is operably coupled to the engaging member to drive the at least one elastic arm to disengage from the engagement groove. The elastic restoring member is adapted to restore the releasing member.

[0053] In some embodiments, the releasing member has at least one pushing portion. The at least one elastic arm has at least one abutment portion. Each of the at least one pushing portion is adapted to push the corresponding one of the at least one abutment portion to release the snap-fit of the at least one elastic arm with the at least one engagement groove.

[0054] In some embodiments, a convex platform is disposed in the second accommodation space. The convex platform has a guiding surface opposite to the abutment portion. The pushing portion is sandwiched between the guiding surface and the abutment portion. The pushing portion has a sliding surface in sliding fit with the guiding surface.

[0055] In some embodiments, the first connection seat includes a connection body and an installation seat. The installation seat is mounted to the connection body by a fastening mechanism, or is integrated with the connection body. The engage member is provided on the installation seat. The connection body is integrated with the armrest rod or attached to the armrest rod. The second connection seat is pivotally connected to the armrest body via a pivot shaft. An axial direction of the pivot shaft is perpendicular to an insertion-withdrawal direction of the engaged member.

[0056] In the fifth aspect of the present disclosure, a height adjustment mechanism for a carrier is provided, including a front leg support assembly, a footrest plate slidable in a height direction along the front leg support assembly, and a locking assembly provided between the front leg support assembly and the footrest plate. The locking assembly is switchable between a locking state and an

unlocking state. When the locking assembly is in the locking state, the footrest plate is capable of being fixed at a height position relative to the front leg support assembly, and/or the footrest plate is capable of being operated to move in a first direction. When the locking assembly is in the unlocking state, the footrest plate is capable of being operated to move in the first direction or in a second direction. The first direction or the second direction are opposite to each other and parallel to the height direction.

[0057] In some embodiments, the locking assembly includes: a first locking groove provided on the front leg support assembly and being a unidirectional locking groove for limiting the movement of the footrest plate in the second direction, and/or a second locking groove provided on the front leg support assembly and being a bidirectional locking groove for limiting the movement of the footrest plate in both the first direction and the second direction; and a locking member movably disposed at an end of the footrest plate and switchable between a locking position and an unlocking position. When the locking member is in the locking position, the locking member is protruded out from the end of the footrest plate and inserted into the first locking groove or the second locking groove. When the locking member is in the unlocking position, the locking member is removed from the first locking groove or the second locking groove.

[0058] In some embodiments, the locking assembly further includes an operating member, a linkage member, a first restoring member, and a second restoring member. The operating member is operably disposed on the footrest plate and drivingly connected to the locking member. The operating member is operable to drive the locking member to switch from the locking position to the unlocking position. A first end of the linkage member is drivingly connected to the operating member. A second end of the linkage member is fixed connected to the locking member. The operating member is operable to drive the locking member to switch from the locking position to the unlocking position via the linkage member. The first restoring member is disposed between the operating member and the footrest plate. The first restoring member is adapted to bias the operating member to cause the operating member to move in a direction such that the locking member is driven toward the locking position. The second restoring member is provided between the locking member and the footrest plate. The second restoring member is adapted to bias the locking member to cause the locking member to move toward the locking position.

[0059] In some embodiments, the first locking groove has a first inclined abutment surface therein. The first inclined abutment surface is gradually inclined toward the footrest plate along the first direction. The second locking groove has a first limiting wall and a second limiting wall at two opposite sides thereof in the height direction. The second locking groove is located in the first direction of the first locking groove.

[0060] In some embodiments, the footrest plate has a hollow inner cavity. The locking member and the linkage member are moveably disposed in the hollow inner cavity. A part of the operating member protrudes into the hollow inner cavity to be connected to the linkage member, and another part of the

operating member protrudes outside the hollow inner cavity to be operated. The part of the operating member protruding into the hollow inner cavity is provided with a driving groove extending in a direction intersecting with both the movement direction of the operating member and the movement direction of the locking member. The first end of the linkage member is inserted into the driving groove and is moveable along the driving groove. The operating member is provided with a mounting cavity in communication with the hollow inner cavity. The first restoring member is disposed between a top wall of the hollow inner cavity and a bottom wall of the mounting cavity and capable of elastically telescoping.

[0061] In some embodiments, a portion of the hollow inner cavity of the footrest plate in which the locking member is mounted is provided with a first convex platform. A second convex platform opposite to the first convex platform is annularly provided outside the locking member. The second convex platform is located at a side of the first convex platform close to the front leg support assembly. The second restoring member is sleeved outside the locking member, and the two ends of the second restoring member abut against the first convex platform and the second convex platform, respectively.

[0062] In some embodiments, the front leg support assembly includes a front leg support rod of a carrier frame of the carrier and a guiding member fixed to a side of the front leg support rod facing the footrest plate. The locking assembly is disposed between the guiding member and the footrest plate.

[0063] In some embodiments, the front leg support assembly is provided with a guiding groove extending in the movement direction of the footrest plate. The footrest plate includes a footrest body to support the feet of the user and a clamping member integrated with the footrest body. At least part of the clamping member is inserted into the guiding groove and slidable along the guiding groove.

[0064] In some embodiments, the height adjustment mechanism further includes a clamping member disposed between the front leg support assembly and the footrest plate. The clamping member is telescopically connected or movably connected to the footrest plate. The front leg support assembly is provided with a guiding groove extending in the movement direction of the footrest plate. The clamping member includes a clamping body and a connecting portion connected to each other and form an angle therebetween. At least part of the clamping body is inserted into the guiding groove and slidable along the guiding groove. The end of the footrest plate is provided with a notch.

The connecting portion of the clamping member is inserted into the notch.

[0065] In some embodiments, the locking assembly further includes a third locking groove provided on the front leg support assembly and located in the second direction of the first locking groove. The third locking groove has a second inclined abutment surface gradually inclined toward the footrest plate along the first direction. The third locking groove further has a mounting port opposite to the second inclined abutment surface. The locking member is insertable into the third locking groove through the mounting port.

[0066] In some embodiments, the height adjustment mechanism further includes a limiting member

connected to the front leg support assembly and located in the second direction of the third locking groove. When the locking member is inserted into the third locking groove, the limiting member abuts against the footrest plate to limit the movement of the footrest plate in the second direction.

BRIEF DESCRIPTION OF THE DRAWINGS

5 **[0067]** The accompanying drawings form a part of the present disclosure and are used to provide a further understanding of the present disclosure. The illustrated embodiments and the description thereof are merely for explaining the present disclosure but not for improperly limiting the present disclosure.

10 **[0068]** FIG. 1 schematically illustrates a perspective view of a carrier provided in the first aspect of the present disclosure, wherein the carrier is in an expanded state;

[0069] FIG. 2 schematically illustrates an exploded view of the carrier shown in FIG. 1;

[0070] FIG. 3 schematically illustrates a perspective view of a drive assembly of the carrier shown in FIG. 1 from a view point;

15 **[0071]** FIG. 4 schematically illustrates a perspective view of the drive assembly of the carrier shown in FIG. 1 from another view point;

[0072] FIG. 5 schematically illustrates a perspective view of a limiting block of the carrier shown in FIG. 1;

[0073] FIG. 6 schematically illustrates a perspective view of the carrier shown in FIG. 1 in a state between an expanded state and a folded state;

20 **[0074]** FIG. 7 schematically illustrates a cross-sectional view of the carrier shown in FIG. 1 in another state between the expanded state and the folded state;

[0075] FIG. 8 schematically illustrates a perspective view of the carrier shown in FIG. 1 in the folded state;

25 **[0076]** FIG. 9 illustrates a schematic structural view of a carrier provided in the second aspect of the present disclosure, wherein the carrier frame is in the expanded state;

[0077] FIG. 10 illustrates an exploded view of the carrier shown in FIG. 9;

[0078] FIG. 11 illustrates a schematic structural view of the carrier shown in FIG. 9 from another view point and a partially enlarged view of a part of the seat assembly and the connecting rod assembly;

30 **[0079]** FIG. 12 illustrates a schematic structural view of the carrier shown in FIG. 9, with the front leg frame, the rear leg frame, and the wheel assembly removed;

[0080] FIG. 13 illustrates an exploded view at position A of the carrier shown in FIG. 12;

35 **[0081]** FIG. 14 illustrates a side cross-sectional view of the carrier shown in FIG. 9 and a partially enlarged view of a part of the seat assembly, the connecting rod assembly, and the backrest assembly, wherein the carrier frame is in the expanded state and the connecting harness is of the first length;

[0082] FIG. 15 illustrates a side cross-sectional view of the carrier shown in FIG. 9 and a partially enlarged view of a part of the seat assembly, the connecting rod assembly, and the backrest assembly,

wherein the carrier frame is in the expanded state and the connecting harness is of the second length;
[0083] FIG. 16 illustrates a side cross-sectional view of the carrier shown in FIG. 15 with the orientation of the handle frame switched and a partially enlarged view of a portion of the seat assembly, the connecting rod assembly, and the backrest assembly;

5 [0084] FIG. 17a illustrates a side cross-sectional view of the carrier shown in FIG. 9 and a partially enlarged view of a part of the seat assembly, the connecting rod assembly, and the backrest assembly, wherein the carrier frame is in the folded state;

[0085] FIG. 17b illustrates the carrier in the folded state shown in FIG. 17a from another view point;

[0086] FIG. 18 illustrates a schematic structural perspective view of a first embodiment of a carrier
10 in the third aspect of the present disclosure, wherein the carrier is in a first usage state;

[0087] FIG. 19 illustrates a schematic structural perspective view of the first embodiment of the carrier in the third aspect of the present disclosure, wherein the carrier is in a second usage state;

[0088] FIG. 20 illustrates a schematic structural perspective view of the first embodiment of the carrier in the third aspect of the present disclosure, with the front leg frame and the rear leg frame
15 removed;

[0089] FIG. 21 illustrates a partially exploded view of the first embodiment of the carrier in the third aspect of the present disclosure, with the front leg frame and the rear leg frame removed;

[0090] FIG. 22 illustrates a partially enlarged view of FIG. 21;

[0091] FIG. 23 illustrates a partially exploded view of the first embodiment of the carrier in the third
20 aspect of the present disclosure from another view point, with the front leg frame and the rear leg frame removed;

[0092] FIG. 24 illustrates a partially enlarged view of FIG. 23;

[0093] FIG. 25 illustrates a schematic structural perspective view of a second embodiment of the carrier in the third aspect of the present disclosure;

25 [0094] FIG. 26 illustrates a side cross-sectional view of the second embodiment of the carrier in the third aspect of the present disclosure;

[0095] FIG. 27 illustrates a partially enlarged view of FIG. 26;

[0096] FIG. 28 illustrates a schematic structural perspective view of the carrier in FIG. 27 with some internal details removed;

30 [0097] FIG. 29 illustrates a side view of a mounting seat mounted in an armrest rod of the second embodiment of the carrier of the third aspect of the present disclosure;

[0098] FIG. 30 illustrates a schematic structural perspective view of the mounting seat and components mounted in the mounting seat of the second embodiment of the carrier of the third aspect of the present disclosure;

35 [0099] FIG. 31 illustrates a schematic exploded view of the mounting seat and components mounted in the mounting seat of the second embodiment of the carrier of the third aspect of the present disclosure;

- [0100] FIG. 32 illustrates a schematic exploded view of the mounting seat and components mounted in the mounting seat of the second embodiment of the carrier of the third aspect of the present disclosure from another view point;
- [0101] FIG. 33 illustrates a schematic structural perspective view of a third embodiment of the carrier of the third aspect of the present disclosure;
- [0102] FIG. 34 illustrates a partially enlarged view of FIG. 33;
- [0103] FIG. 35 schematically illustrates a perspective view of a carrier in the fourth aspect of the present disclosure, employing an armrest installation unit provided in the fourth aspect of the present disclosure;
- [0104] FIG. 36 schematically illustrates a perspective view of the carrier shown in FIG. 35, with the armrest body and the armrest rod of the carrier frame separated;
- [0105] FIG. 37 schematically illustrates a cross-sectional view at the portion C-C of the carrier shown in FIG. 35, with the first connector seat and the second connector seat of the armrest installation unit connected to each other;
- [0106] FIG. 38 schematically illustrates a view of the first connection seat and the second connection seat shown in FIG. 20 separated from each other;
- [0107] FIG. 39 schematically illustrates an exploded view of the first connection seat of the armrest installation unit in the fourth aspect of the present disclosure;
- [0108] FIG. 40 schematically illustrates a further exploded view of the first connection seat of the armrest installation unit in the fourth aspect of the present disclosure;
- [0109] FIG. 41 schematically illustrates an exploded view of the second connection seat of the armrest installation unit in the fourth aspect of the present disclosure;
- [0110] FIG. 42 schematically illustrates a further exploded view of the second connection seat of the armrest installation unit in the fourth aspect of the present disclosure;
- [0111] FIG. 43 schematically illustrates a cross-sectional view at the portion D-D of the carrier shown in FIG. 35;
- [0112] FIG. 44 illustrates a schematic structural view of a carrier in the fifth aspect of the present disclosure
- [0113] FIG. 45 illustrates a schematic structural view of a height adjustment mechanism of the carrier shown in FIG. 44;
- [0114] FIG. 46 illustrates a cross-sectional view taken along line A-A in FIG. 45 and cross-sectional views of dashed line outlined portions;
- [0115] FIG. 47 illustrates a cross-sectional view taken along line B-B in FIG. 45 and a cross-sectional view of a dashed line outlined portion;
- [0116] FIG. 48 illustrates a cross-sectional view of the carrier taken along line C-C in FIG. 44 with the footrest plate and the locking assembly removed;
- [0117] FIG. 49 illustrates a schematic structural view of a height adjustment mechanism according

to another embodiment in the fifth aspect of the present disclosure;

[0118] FIG. 50 illustrates a top view of a footrest plate of the height adjustment mechanism shown in FIG. 49;

[0119] FIG. 51 illustrates an exploded view of the footrest plate of the height adjustment mechanism shown in FIG. 49.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0120] The present disclosure will now be described in detail with reference to the accompanying drawings and embodiments in order to make the objects, technical solutions, and advantages of the present disclosure clearer. It should be understood that the specific embodiments described herein are only for explaining the present disclosure, and not intended to limit the protection scope of the present disclosure.

[0121] It should be noted that when a component is referred to as being "fixed" to another component, it can be directly fixed to the other component or an intervening component may be present. When a component is referred to as being "connected" to another component, it can be directly connected to the other component or an intervening component may be present. The terms "vertical", "horizontal", "upper", "lower", "left", and "right" and other similar expressions used herein is for the purpose of describing particular embodiments only and is not intended to be limiting of the present disclosure.

[0001] Unless otherwise defined, all technical and scientific terms used herein have the same meaning as commonly understood by one of ordinary skill in the technical field of the present disclosure. The terms used herein in the description of the present disclosure are only for the purpose of describing specific embodiments, and are not intended to limit the present disclosure. The term "and/or" used herein includes any and all combinations of one or more related listed items.

[0122] The present disclosure provides a carrier which may be a child carrier such as a child stroller, a child dining chair, and a child tricycle, or may be a wheelchair, a high chair, and the like.

[0123] It should be noted that, unless otherwise clearly specified and defined, orientation terms, such as "front", "rear", "left" and "right" in the embodiments of the present disclosure refer to the "front", "rear", "left" and "right" of a carrier such as a child stroller in the expanded state with the child sitting therein facing frontward. The arrows P and Q shown in the drawings denote "front" and "rear" directions, respectively, and the arrows L and R denote "Left" and "Right" directions, respectively. These orientation terms are merely used to make the description of the embodiments of the present disclosure clearer, but not used to improperly limit the protection scope of the present disclosure.

[0124] First Aspect

[0125] FIG. 1 shows a perspective view of a carrier 1000 in an expanded state according to the first aspect of the present disclosure. FIG. 2 shows an exploded view of the carrier 1000. As shown in FIG. 1 and FIG. 2, the carrier is illustrated with a child stroller as an example. The carrier may include

components such as a carrier frame 100, a seat assembly 200, a backrest assembly 400, etc. In this embodiment, the structure of the carrier is substantially left-right symmetrical about a longitudinal midplane (not shown, which may also be referred to as a left-right symmetrical plane). Of course, in some alternative embodiments, the structure of the carrier may not be perfectly left-right symmetrical, for example, the carrier may have an asymmetric braking system.

[0126] FIG. 1 and FIG. 2 illustrate an exemplary embodiment of the carrier frame 100, which may include components such as a seat tube 110, a handle frame 120, an armrest frame 130, an auxiliary frame 140, a connection frame 150, a front leg frame 160, and a rear leg frame 170. The carrier frame 100 is foldable. The folded state of the carrier frame 100 corresponds to the folded state of the carrier, and the expanded state of the carrier frame 100 corresponds to the expanded state of the carrier. Of course, in some alternative embodiments, the carrier frame 100 may have other implementations than those illustrated herein.

[0127] The structure of the carrier frame 100 in the first aspect of the present disclosure will be described below in conjunction with FIG. 1 and FIG. 2.

[0128] The carrier frame 100 includes two seat tubes 110 on left and right sides thereof. Each of the seat tubes 110 generally extends in the front-rear direction of the carrier frame. The seat assembly 200 includes a movable frame 220 mounted on each of the seat tubes 110. The movable frame 220 is in sliding fit with the seat tube 110 on the same side of the carrier frame. The seat assembly 200 also includes a seat frame 230 connected between the two movable frames 220. The seat frame 230 is used to support the child's buttock directly or indirectly (via a seat cushion).

[0129] The handle frame 120 is generally U-shaped and includes a first handle rod 122 and a second handle rod 123 on the left and right sides of the carrier frame, with the upper ends of the first handle rod 122 and the second handle rod 123 connected by a handle body 121. In some embodiments, the protrusion length of the handle body 121 relative to each of the handle rods (the first handle rod 122 and the second handle rod 123) may be adjusted. Each of the handle rods is pivotally connected to the seat tube 110 on the same side of the carrier frame via a pivot shaft 630.

[0130] The armrest frame 130, for example, includes a first armrest rod 132 and a second armrest rod 133 on the left and right sides of the carrier frame, with the front ends of the first armrest rod 132 and the front end of the second armrest rod 133 connected by an armrest body 131. The armrest body 131 can be installed to each of the armrest rods (the first armrest rod 132 and the second armrest rod 133) in a detachable or non-detachable manner.

[0131] The carrier frame 100 may include, for example, two auxiliary frames 140 and two connection frames 150 on the left and right sides thereof. Each of the auxiliary frames 140 is pivotally connected to the armrest rod on the same side of the carrier frame, specifically via a pivot shaft 93. Each of the connection frames 150 is pivotally connected to the auxiliary frame 140 on the same side of the carrier frame, specifically via a pivot shaft 630.

[0132] The front leg frame 160 of the carrier frame 100, for example, includes a first front leg

support rod 161 and a second front leg support rod 162 on the left and right sides of the carrier frame, connected by a front cross-rod (or a footrest plate) 190. The rear leg frame 170 includes a first rear leg support rod 171 and a second rear leg support rod 172 which are left-right symmetrically positioned and connected by a rear cross-rod 173. Each of the front leg support rods (the first front leg support rod 161 and the second front leg support rod 162) is installed with a front wheel assembly 181 at the lower end thereof. Each of the rear leg support rods (the first rear leg support rod 171 and the second rear leg support rod 172) is installed with a rear wheel assembly 182 at the lower end thereof. The armrest rod, the front leg support rod, and the rear leg support rod on the same side of the carrier frame are pivotally connected via a pivot shaft 92. The front leg support rod and the seat tube 110 on the same side of the carrier frame are pivotally connected via a pivot shaft 91. The connection frame 150 and the rear leg support rod on the same side of the carrier frame are pivotally connected via a pivot shaft 94. The connection relationships between the components on the right side of the carrier in the first aspect of the present disclosure will be described in detail hereafter in conjunction with FIG. 1 and FIG. 2. Since the structure of the carrier is substantially left-right symmetrical, the connection relationships between the components on the left side of the carrier can be referenced to the connection relationships between the components on the right side as described below.

[0133] The front leg support rod and the seat tube 110 on the same side of the carrier frame are pivotally connected via the pivot shaft 91. Specifically, the front end of the right seat tube 110 is provided with a hole 1101, the middle section of the second front leg support rod 162 is provided with a hole 1601, and the seat tube 110 is pivotally connected to the second front leg support rod 162 via the pivot shaft 91 inserted through the holes 1101 and 1601. The upper end of the second front leg support rod 162 is provided with a hole 1602, the upper end of the second rear leg support rod 172 is provided with a hole 1702, and the front end of the second armrest rod 133 is provided a hole 1301. The second armrest rod 133, the second front leg support rod 162, and the second rear leg support rod 172 are pivotally connected via the pivot shaft 92 inserted through the holes 1301, 1602, and 1702. The rear end of the second armrest rod 133 is provided with a hole 1302, and the upper end of the auxiliary frame 140 is provided with a hole 1402. The second armrest rod 133 is pivotally connected to the auxiliary frame 140 via the pivot shaft 93 inserted through the holes 1302 and 1402. The rear end of the seat tube 110 is provided with a hole 1102, the lower end of the auxiliary frame 140 is provided with a hole 1401, the upper end of the connection frame 150 is provided with a hole 1502, and the lower end of the second handle rod 123 is provided with a hole 1201. The seat tube 110, the auxiliary frame 140, the connection frame 150, and the second handle rod 123 are pivotally connected via the pivot shaft 630 inserted through the holes 1102, 1401, 1502, and 1201. The lower end of the connection frame 150 is provided with a hole 1501, and the middle section of the second rear leg support rod 172 is provided with a hole 1701. The connection frame 150 is pivotally connected to the second rear leg support rod 172 via the pivot shaft 94 inserted through the holes

1501 and 1701.

[0134] Referring to FIG. 1, the carrier frame 100 is maintained in the expanded state by locking the relative rotation between the auxiliary frame 140 and the connection frame 150. Conversely, when it is required to fold the carrier, the relative rotation between the auxiliary frame 140 and the connection frame 150 is firstly unlocked, and then the handle frame 120 is rotated to fold the carrier frame 100 wholly.

[0135] Referring to FIG. 1 and FIG. 2, an exemplary embodiment of a folding locking mechanism 700 used to lock the relative rotation between the auxiliary frame 140 and the connection frame 150 is shown. Specifically, the auxiliary frame 140 is provided with a sliding groove 1403 extending in the length direction of the auxiliary frame 140. A locking pin 730 is slidably disposed in the sliding groove 1403 and is adapted to slide along the sliding groove 1403 between the holes 1401 and 1402. The connection frame 150 is provided with a locking groove 1503. When the carrier frame 100 switches from the folded state to the expanded state, the auxiliary frame 140 and the connection frame 150 rotate relative to each other about the pivot shaft 630. When the carrier is in the expanded state, the locking groove 1503 aligns with the sliding groove 1403, so that the locking pin 730 can be inserted into the locking groove 1503 due to the push of an elastic restoring member inside the auxiliary frame 140. At this time, the locking pin 730 is located in both the sliding groove 1403 and the locking groove 1503, thereby locking the relative rotation between the auxiliary frame 140 and the connection frame 150 and keeping the carrier in the expanded state. In some embodiments, the locking pin 730 may include, for example, a locking portion 731 and a first abutment portion 732. The locking portion 731 is used for sliding fit with the sliding groove 1403 and for insertion into the locking groove 1503. The first abutment portion 732, for example, protrudes laterally relative to the locking portion 731.

[0136] Referring to FIG. 1 and FIG. 2, an exemplary embodiment of an operating mechanism used to unlock the relative rotation between the auxiliary frame 140 and the connection frame 150 is also shown. Specifically, a first operating member 710, for example a button, is provided on the handle body 121. Each of the handle rods (the first handle rod 122 and the second handle rod 123) is provided with a first sliding block 740. Each of the first sliding blocks 740 is in sliding fit with the corresponding handle rod (the first handle rod 122 or the second handle rod 123). The first operating member 710 is connected to each of the first sliding blocks 740, for example, through a traction member such as a rope (not shown) inside the handle frame 120. Each of the first sliding blocks 740 is provided with a second abutment portion 741 laterally protruded therefrom. When the carrier frame is in the expanded state, the second abutment portion 741 is located below the first abutment portion 732 on the same side of the carrier frame. When it is required to fold the carrier frame 100, the user presses the first operating member 710 to drive the first sliding block 740 to move upward. After the second abutment portion 741 abuts against the first abutment portion 732, the first sliding block 740 drives the locking pin 730 to exit the locking groove 1503, thereby unlocking the relative rotation

between the auxiliary frame 140 and the connection frame 150. In some embodiments, each of the handle rods (the first handle rod 122 and the second handle rod 123) is provided with an elastic restoring member therein. When the pressure on the first operating member 710 is released, the elastic restoring member can push the corresponding first sliding block 740 to restore its initial position while the first operating member 710 restores its initial position.

[0137] Referring to FIG. 1 and FIG. 2, an exemplary embodiment of the manner for positioning the handle frame 120 is also shown. Specifically, each of the handle rods (the first handle rod 122 and the second handle rod 123) is provided with a second sliding block 920. The second sliding block 920 is provided with a clamping groove 921. Each of the auxiliary frames 140 is provided with a first clamping block 930. Each of the front leg support rods (the first front leg support rod 161 and the second front leg support rod 162) is provided with a second clamping block 940. When the handle frame 120 rotates in the front-rear direction about the pivot shaft 630, the clamping groove 921 selectively clamps the first clamping block 930 of the auxiliary frame 140 or the second clamping block 940 of the front leg support rod, to position the handle frame 120 in a rearwardly inclined first position (as shown in FIG. 1, where the first clamping block 930 of the auxiliary frame 140 is clamped in the clamping groove 921) or in a frontwardly inclined second position (not shown, where the second clamping block 940 of the front leg support rod is clamped in the clamping groove 921). The switching between the rearwardly inclined first position and the frontwardly inclined second position of the handle frame 120 is also referred to the switching between the rearward orientation and the frontward orientation of the handle frame 120. When the handle frame 120 is in the first position, the child seated in the child carrier faces frontward in the direction of travel and has his back to the caregiver pushing the handle frame 120. When the handle frame 120 is in the second position, the child seated in the child carrier faces backward in the direction of travel and faces the caregiver pushing the handle frame 120.

[0138] Each of the second sliding blocks 920 is in sliding fit with the corresponding handle rod 122 or 123. Each of the two handle rods 122, 123 is provided with a second operating member 910 on the inner side thereof. The second operating member 910 is connected to the second sliding block 920, for example, via a second traction member such as a rope (not shown) inside the handle rod 122 or 123. The second operating member 910 is operated to drive the second sliding block 920 to slide upward along the handle rod 122 or 123 via the second traction member, so that the first clamping block 930 or the second clamping block 940 is released from the clamping groove 921 of the second sliding block 920. In this case, the handle frame 120 can be rotated and the second clamping block 940 or the first clamping block 930 can be clamped into the clamping groove 921 of the second sliding block 920, thereby achieving the switching between the frontward and rearward orientations of the handle frame 120. Each of the handle rods 122, 123 may be further provided with an elastic restoring member inside thereof to push the corresponding second sliding block 920 back to its initial position.

[0139] In another embodiment (not shown), the traction member connected between the first

operating member 710 and the first sliding block 740 is also connected to the second sliding block 920. When it is required to change the orientation of the handle frame 120, the user presses the first operating member 710 so that the traction member pulls the second sliding block 920 upward, releasing one of the first clamping block 930 and the second clamping block 940 from the clamping groove 921 of the second sliding block 920. In this case, the handle frame 120 can be rotated such that the other one of the first clamping block 930 and the second clamping block 940 is in alignment with the clamping groove 921 of the second sliding block 920 and then clamped into the clamping groove 921 of the second sliding block 920. Each of the handle rods may be provided with an elastic restoring member inside thereof to push the corresponding second sliding block 920 back to its initial position.

[0140] In embodiments where the first operating member 710 is connected to both the first sliding block 740 and the second sliding block 920, when the first operating member 710 is pressed, the first sliding block 740 also moves upward, driving the locking pin 730 to the unlock. To prevent accidental unlocking of the locking pin 730 when changing the orientation of the handle frame 120, in some embodiments, the travel distance of the first sliding block 740 driving the locking pin 730 to unlock is greater than the travel distance for the clamping groove 921 of the second sliding block 920 to disengage from the clamping block 930, 940. In some embodiments, the handle frame 120 may be provided with a first indicator and a second indicator for the first operating member 710. When the first operating member 710 is moved to the first indicator, the clamping groove 921 of the second sliding block 920 releases the first clamping block 930 or the second clamping block 940, at this time, the handle frame 120 can be pushed to switch its orientation, while the locking pin 730 still locks the relative rotation between the auxiliary frame 140 and the connection frame 150. When the first operating member 710 is moved to the second indicator, the first sliding block 740 drives the locking pin 730 to unlock the relative rotation between the auxiliary frame 140 and the connection frame 150, so that the carrier frame 100 can be folded.

[0141] Referring to FIG. 1 and FIG.2, in some embodiments, the clamping blocks 930 and 940 may have respective blocking plates 931 and 941 extending downwardly. Each of the handle rods may be fixedly disposed with a fastening member 980 located below the corresponding second sliding block 920 and facing the clamping groove 921. When the handle frame 120 is in the first position, the fastening member 980 abuts against the first blocking plate 931 of the first clamping block 930 on the corresponding auxiliary frame 140. When the handle frame 120 is in the second position, the fastening member 980 abuts against the second blocking plate 941 of the second clamping block 940 on the corresponding front leg support rod. The configuration of the blocking plates 931 and 941 and the fastening member 980 may limit the range of orientation switching of the handle frame 120.

[0142] In some embodiments, referring again to FIG. 1 and FIG.2, the carrier frame 100 also includes a drive assembly 600. The handle frame 120 in rotation can drive the movable frame 220 to move along the seat tube 110 via the drive assembly 600. In some embodiments, as shown in FIG 1,

with the carrier frame 100 in the expanded state, when the handle frame 120 rotates about the pivot shaft 630 in the first direction S1 (for example, clockwise as shown) to switch from the first position to the second position, the movable frame 220 slides frontward relative to the seat tube 110. Conversely, when the handle frame 120 rotates about the pivot shaft 630 in the second direction S2 (for example, counterclockwise as shown) to switch from the second position to the first position, the movable frame 220 slides rearward relative to the seat tube 110. When the child's buttocks is supported on the seat frame 230, the front-rear movement of the movable frame 220 in the process of switching the orientations of the handle frame 120 will cause the front-rear movement of center of gravity of the child carrier, so that the center of gravity of the child carrier is always closer to the caregiver pushing the handle frame 120, thus helping the caregiver to push the child carrier with less effort.

[0143] Referring to FIGS. 2 to 4, an exemplary embodiment of the drive assembly 600 is shown. It is to be understood that the implementation of the drive assembly 600 is not limited to the embodiment provided herein. The drive assembly 600 includes a linkage mechanism 640 and the aforementioned pivot shaft 630. The pivot shaft 630 rotates synchronously with the handle frame 120. The linkage mechanism 640 is connected between the pivot shaft 630 and the movable frame 220 to convert the rotation of the pivot shaft 630 into the movement of the movable frame 220 along the seat tube 110.

[0144] FIG. 3 and FIG. 4 also show an exemplary embodiment of the linkage mechanism 640. It is to be understood that in some alternative embodiments, the implementation of the linkage mechanism 640 is not limited to the embodiment provided herein. The linkage mechanism 640 includes, for example, a first drive rod 610 and a second drive rod 620. The first end of the first drive rod 610 is provided with a hole 601, and the first drive rod 610 is sleeved onto the pivot shaft 630 through the hole 601 and rotates synchronously with the pivot shaft 630. The second end of the first drive rod 610 and the first end of the second drive rod 620 are connected via a pivot shaft 660. The second end of the second drive rod 620 is provided with a hole 603, which is pivotally connected to a hole 302 (FIG. 2) of the moveable frame 220 via the second rotation shaft N. When the handle frame 120 rotates to change its orientation, it drives the pivot shaft 630 to rotate synchronously, which in turn drives the first drive rod 610 to rotate synchronously, and the second drive rod 620 drives the movable frame 220 to move in the front-rear direction along the seat tube 110.

[0145] FIG. 3 and FIG. 4 also show an exemplary embodiment of the pivot shaft 630. It is to be understood that in some alternative embodiments, the implementation of the pivot shaft 630 is not limited to the embodiment provided herein. The pivot shaft 630 includes, for example, a first shaft segment 631, a second shaft segment 632, and a third shaft segment 633 which are sequentially connected. The first shaft segment 631 is inserted into the hole 1102 of the seat tube 110 to be pivotally connected to the seat tube 110. The diameter of the second shaft segment 632 is larger than that of the first shaft segment 631. At least a portion of the length of the second shaft segment 632 is provided with a facet 6321. The hole 601 of the first drive rod 610 is provided with a facet 6011. The

engagement between the facet 6321 and the facet 6011 ensures the synchronous rotation of the first drive rod 610 with the pivot shaft 630. At least a portion of the length of the third shaft segment 633 is provided with a facet 6331. The hole 1201 of each of the handle rods (the first handle rod 122 and the second handle rod 123) is provided with a facet 1205 (FIG.2). The engagement between the facet 6331 and the facet 1205 ensures the synchronous rotation of the hand frame 120 with the pivot shaft 630. It is to be understood that there are many manners to achieve the synchronous linkage of the handle frame 120, the pivot shaft 630, and the first drive rod 610, not limited to the facet engagement as described above.

[0146] The portion of the pivot shaft 630 located between facet 6321 and facet 6331 is used for pivoting with the hole 1401 of the auxiliary frame 140 and the hole 1502 of the connecting frame 150. In some embodiments, the pivot shaft 630 may include a shaft shoulder 634, which has a larger diameter and is located between the facet 6321 and the facet 6331. For example, a shaft sleeve (not shown) can be sleeved onto the shaft shoulder 634, and the holes 1401 and 1502 can pivot with the pivot shaft 630 via the shaft sleeve. The connecting frame 150 is located between the auxiliary frame 140 and the handle rod on the same side of the carrier frame in the axial direction of the pivot shaft 630.

[0147] In some embodiments, referring to FIGS. 1 to 3, the pivot shaft 630 is provided with a central hole 635, which is used for the fastening member 650 to pass through. The fastening member 650 may be a bolt or a rivet, allowing easy fixation of the irregular pivot shaft 630 and various components sleeved onto the pivot shaft 630 together.

[0148] Referring to FIG. 1 and FIG. 2 again, an exemplary embodiment of the backrest assembly 400 is also shown. It is to be understood that in some alternative embodiments, the backrest assembly 400 can have other implementations. In this embodiment, the backrest assembly 400 includes. For example, a backrest frame 410, a backrest tube 450, an adjustable harness 430, and a harness adjustment mechanism 440. The backrest frame 410 and backrest tube 450 are pivoted onto the first rotation shaft M disposed on the movable frame 220. Each of the backrest frame 410 and the backrest tube 450 can rotate about the first rotation shaft M. The harness adjustment mechanism 440 and the adjustable harness 430 are connected to the backrest frame 410.

[0149] The backrest frame 410, for example, is U-shaped. The backrest frame 410 includes a first backrest rod 412 and a second backrest rod 413 on the left and right sides, and a backrest body 411 connected between the upper ends of the first backrest rod 412 and the second backrest rod 413. Each of the two backrest rods are pivoted to the hole 301 of the movable frame 220 on the same side of the carrier frame via the first rotation shaft M. In this way, when the carrier Frame 100 is in the expanded state and the movable frame 220 moves in the front-rear direction relative to the seat tube 110, the backrest frame 410 moves synchronously with the movable frame 220 while maintaining the relative position with the movable frame 220 in the front-rear direction.

[0150] The backrest tube 450 is, for example, U-shaped, with two vertical posts each pivoted to the

backrest frame 410 via the first rotation shaft M. A seat fabric (not shown) may surround the backrest frame 410 and the backrest tube 450. The seat fabric in the region defined by the backrest tubes 450 may form a backrest portion which provides the support for the back of the child. In some alternative embodiments, a rigid backrest board (not shown) can be disposed inside the backrest portion. The adjustable harness 430 is connected to each of the backrest rods (the first backrest rod 412 and the second backrest rod 413), passing over the backrest tube 450 and connecting to the harness adjustment mechanism located behind the backrest board. By increasing or reducing the length of the adjustable harness 430 between each of the backrest rods and the harness adjustment mechanism, the inclined angle of the backrest tube 450 and the backrest board can be adjusted. The implementation of the harness adjustment mechanism can be referred to in relevant art and is not further elaborated here. In some alternative embodiments, the backrest assembly 400 may not include the backrest tube 450, and the backrest board can be connected to the backrest frame 410 only through the seat fabric, while the inclined angle of the backrest board can still be adjusted with the harness adjustment mechanism 440 and adjustable harness 430.

[0151] In some embodiments, the child carrier may further include a connecting member (not shown) that is used to limit the range of rotation of the backrest frame 410 to avoid the over-rotation of the backrest frame 410 about the first rotation shaft M in the second direction S2 or in the first direction S1. In some embodiments, the connecting member includes, for example, a flexible belt connected between the armrest rod (the first armrest rod 132 or the second armrest rod 133) and the backrest rod (the first backrest rod 412 or the second backrest rod 413) on the same side of the carrier frame. It is to be understood that the implementation of the connecting member is not limited to this.

[0152] In the folding process of the carrier frame, the backrest frame 410 is subjected to a push force and tends to sway in a direction close to the movable frame 220. Referring to FIGS. 1, 2, and 5, the child carrier may also include a limiting block 1600, and an exemplary embodiment of the limiting block 1600 is also shown. It is to be understood that in some alternative embodiments, the limiting block 1600 may have other implementations. The limiting block 1600 may be mounted at any suitable position of the carrier frame 100 to limit the rotation of the backrest frame 410 as needed.

[0153] In this embodiment, the limiting block 1600 includes, for example, a limiting body 1610. The limiting body 1610 is provided with, for example, a mounting groove 1611 through which the limiting block 1600 is secured to a rear end of the seat tube 110. As can be seen in FIGS. 2 and 5, the seat tube 110 is a flat tube, and the mounting groove 1611 is correspondingly a flat groove, so that no circumferential rotation between the limiting block 1600 and the seat tube 110 will occur when they are mounted together. In addition, the limiting body 1610 of the limiting block 1600 may be provided with a hole 1612 for the pivot shaft 630 to pass through, and the pivot shaft 630 is used to limit the relative movement between the limiting block 1600 and the seat tube 110, to secure the limiting block 1600 to the seat tube 110. It is to be understood that the structures of the limiting block 1600 and the seat tube 110 is not limited to the examples in this embodiment, and accordingly, the manner of

limiting the circumferential rotation and the axial movement of the limiting block 1600 and the seat tube 110 is not limited to the examples in this embodiment. For example, in some alternative embodiments, the mounting groove 1611 of the limiting block 1600 is connected to the seat tube 110 via facet engagement, or the hole 1612 of the limiting block 1600 may be connected to the seat tube 110 via another pivot shaft parallel to the pivot shaft 630.

[0154] Referring again to FIG. 1, each of the backrest rods (the first backrest rod 412 and the second backrest rod 413) has a movement end 414. The movement end 414 is located, for example, at the lower section of the corresponding backrest rod, and below the first rotation shaft M. When the carrier frame 100 is in the expanded state and the handle frame 120 is in the rearwardly inclined first position, the movement end 414 is, for example, sandwiched between the limiting block 1600 and the movable frame 220, thereby realizing the positioning of the backrest frame 410. More specifically, the limiting block 1600 may have a first end face 1613, the movable frame 220 may have an engagement portion 226, and the first end face 1613 and the engagement portion 226 are located opposite to clamp the movement end 414 from both sides of the movement end 414, thereby positioning the backrest frame 410. The first end face 1613 and the engagement portion 226 may each have a surface shape matching with the movement end 414. In some embodiments, the movement end 414 extends inclinedly at the lower section of the backrest rod, and the first end face 1613 and the engagement portion 226 extend inclinedly accordingly. In some embodiments, when the carrier frame 100 is in the expanded state and the handle frame 120 is in the frontwardly inclined second position, the movable frame 220 is pushed to the front of the seat tube 110, and the movement end 414 and the engagement portion 226 of the movable frame 220 are kept in contact and disengaged from the first end face 1613 of the limiting block 1600. In this case, the engagement portion 226 of movable frame 220 limits the rotation of backrest frame 410 in the second direction S2, at the same time, the backrest frame 410 is pulled by the connecting member (not shown) as described above, which limits the rotation of the backrest frame 410 in the first direction S1, so that the backrest frame 410 is positioned by the combination of the engagement portion 226 and the connecting member.

[0155] FIG. 6 illustrates a perspective view of the child carrier in a state between the expanded state and the folded state. FIG. 7 illustrates a cross-sectional view of the child carrier in a further state between the expanded state and the folded state. FIG. 8 illustrates a perspective view of the child carrier in the folded state. The folding process of the child carrier will be described below in conjunction with FIGS. 1, 2, and 6-8.

[0156] Referring to FIGS. 1 and 2, when it is required to fold the child carrier, the user presses the operating member 710 to unlock the relative rotation between the auxiliary frame 140 and the connection frame 150, and then pushes the handle frame 120 to drive the auxiliary frame 140 to rotate about the pivot shaft 630 in the first direction S1 and drive the connection frame 150 to rotate about the pivot shaft 94 in the second direction S2. The rotation of the connection frame 150 drives the seat tube 110 to rotate about the pivot shaft 91 in the second direction S2 and drives the armrest rod to

rotate about the pivot shaft 92 in the second direction S2, thereby inducing the front leg frame 160 and the rear leg frame 170 to come closer to each other, and finally folding the carrier frame into the folded state as shown in FIG. 8.

- 5 [0157] Referring to FIGS. 6 and 7, in the folding process of the child carrier, the movable frame 220 moves along the seat tube 110 in a direction away from the limiting block 1600 as the handle frame 120 rotates, so that the engagement portion 226 is disengaged from the movement end 414, leaving space for rotation of the backrest frame 410. The handle frame 120 rotating in the first direction S1 pushes the backrest frame 410 to rotate about the first rotation shaft M in the first direction S1 to approach the movable frame 220.
- 10 [0158] When the carrier frame 100 switches from the expanded state to the folded state, the backrest frame 410 is continuously subjected to the push force from the handle frame 120, and is very prone to uncontrolled swaying in the first direction S1, so that the backrest frame 410 cannot be stably folded with the handle frame 120. In view of this, the limiting block 1600 in the present embodiment is provided with a telescoping portion 1620, which is adapted to, when the carrier frame 100 switches
- 15 from the expanded state to the folded state, abut against the movement end 414 of the backrest rod on the same side of the carrier frame and apply a force in the second direction S2 to the backrest frame 410 to counteract the push force in the first direction S1 applied onto the backrest frame 410, enabling the backrest frame 410 to be stably folded with the handle frame 120, and alleviating the swaying phenomenon of the backrest frame 410 in the folding process of the carrier frame 100.
- 20 [0159] Referring to FIGS. 5 to 7, in some embodiments, the telescoping portion 1620 is disposed below the first end face 1613. During the rotation of the backrest frame 410 about the first rotation shaft M in the first direction S1, when the movement end 414 rotates to the telescoping path of the telescoping portion 1620, the telescoping portion 1620 abuts against the movement end 414 and applies a force to the backrest frame 410. In some alternative embodiments, the telescoping path of
- 25 the telescoping portion 1620 may pass through at least a portion of the region of the first end face 1613.

- [0160] FIGS. 5, 7, and 8 illustrate an exemplary embodiment of the telescoping portion 1620. It is to be understood that the implementations of the telescoping portion 1620 are not limited to the examples in this embodiment. The telescoping portion 1620 may include a sliding block 1621 and an
- 30 elastic restoring member 1622. The sliding block 1621 is in sliding fit with the limiting body 1610 and is used to abut against the movement end 414. In some embodiments, the sliding block 1621 may, for example, be made of a material that is strong and wear-resistant. The elastic restoring member 1622 is sandwiched between the limiting body 1610 and the sliding block 1621 to allow the sliding block 1621 to elastically telescope when it abuts against the movement end 414. The elastic restoring
- 35 member 1622 may, for example, be a spring. In some alternative embodiments, the telescoping portion 1620, for example, has an elastically resilient structure or is made directly from an elastically deformable material, and the telescoping portion 1620 is mounted to the limiting body 1610 and can

elastically deform to abut against the movement end 414 and apply a force in the second direction S2 of rotation onto the backrest frame 410.

[0161] Referring to FIG. 5, in some embodiments, the limiting body 1610 may be provided with a guiding groove 1614. The guiding groove 1614 may have, for example, a groove mouth 1615 facing the movement end 414 and a groove bottom opposite to the groove mouth 1615. The groove bottom may be a closed structure. The telescoping portion 1620 may be mounted in the guiding groove 1614 through the groove mouth 1615 and may be able to elastically telescope relative to the groove mouth 1615. More specifically, the sliding block 1621 is in sliding fit with the guiding groove 1614. The elastic restoring member 1622 is sandwiched between the groove bottom of the guiding groove 1614 and the sliding block 1621. The sliding block 1621 is capable of elastically telescoping with respect to the groove mouth 1615 due to the elastic restoring member 1622. The sliding block 1621 outside of the groove mouth 1615 is used to abut against the movement end 414. It is to be understood that in some alternative embodiments, the telescoping portion 1620 may also be connected to the limiting body 1610 via other suitable structures, that is, the telescoping portion 1620 is not limited to being mounted to the limiting body 1610 through the guiding groove 1614.

[0162] Referring to FIG. 5, in some embodiments, a limiting mechanism 1630 may also be provided between the sliding block 1621 and the limiting body 1610 to limit the sliding travel of the sliding block 1621 to avoid the telescoping portion 1620 from accidentally exiting the guiding groove 1614. The limiting mechanism 1630 may include, for example, a limiting hole 1631 provided in a groove wall of the guiding groove 1614 and a limiting protrusion 1632 provided on the sliding block 1621. The limiting protrusion 1632 is in sliding fit with the limiting hole 1631. In some embodiments, the limiting hole 1631 may, for example, be an elongate hole, and the limiting protrusion 1632 may, for example, be a pin mounted to the sliding block 1621. In some alternative embodiments, the positions of the limiting hole 1631 and limiting protrusion 1632 on the wall of the guiding groove 1614 and the sliding block 1621 may be interchangeable.

[0163] Referring to FIG. 5, in some embodiments, a prolonged support portion 1616 extending outwardly is provided at the lower portion of the groove mouth 1615 of the guiding groove 1614. The prolonged support portion 1616 provides an additional support for the sliding block 1621 that telescopes with respect to the groove mouth 1614. In some embodiments, a limiting projection 1617 may be provided at an upper portion of the groove mouth 1614. The limiting projection 1617 is opposite to the prolonged support portion 1616. The limiting projection 1617 can limit the over pivoting of the movement end 414 about the first rotation shaft M in the first direction S1. In some embodiments, the limiting projection 1617 may be provided, for example, above the groove mouth 1615 of the guiding groove 1614, for example at the intersection of the end face 1618 of the groove mouth 1615 and the first end face 1613.

[0164] **Second aspect**

[0165] To facilitate storage and transportation, most of the strollers on the market nowadays are

foldable, for example, with folding of the carrier frame linked with the folding of the seat assembly. Such stroller generally has a backrest frame and a backrest board on the seat assembly, with the angular adjustment of the backrest frame achieved by adjusting the length of the harness. However, since the backrest frame needs to be fixed, limited in position, and folded, and the folding and the expanding of the backrest frame on the seat assembly need to be synchronized and linked with the folding and the expanding of the carrier frame, the relevant operating mechanism is complex and inconvenient to use.

[0166] As shown in FIG. 9, the second aspect of the present disclosure provides a carrier which may be a stroller. The stroller has a structure linking the folding of the carrier frame 100 with the folding of the backrest assembly 400, which is simple and convenient to use.

[0167] Specifically, as shown in FIGS. 9 and 10, the stroller includes a carrier frame 100, a seat assembly 200, a backrest assembly 400, a drive assembly 600, a folding locking mechanism 700, and a connecting rod assembly 1500. The carrier frame 100 is switchable between a folded state and an expanded state. The seat assembly 200 is movably disposed on the carrier frame 100. The connecting rod assembly 1500 is movably connected to the carrier frame 100 and the seat assembly 200. The backrest assembly 300 is movably connected to the seat assembly 200 via the connecting rod assembly 1500. While the carrier frame 100 is switched from the expanded state to the folded state, the carrier frame 100 can drive the backrest assembly 300 to fold in a direction close to the seat assembly 200 via the connecting rod assembly 1500. The drive assembly 600 is disposed between the handle frame 120 and the movable frame 220 of the seat assembly 200 (as described below). The carrier frame 100 can be operated to drive the movable frame 220 to move long the seat tube 110 (as described below) of the carrier frame 100 via the drive assembly 300.

[0168] Specifically, as shown in FIGS. 9 and 10, the carrier frame 100 includes a seat tube 110, a handle frame 120, an armrest frame 130, an auxiliary frame 140, a connection frame 150, a front leg frame 160, and a rear leg frame 170. The armrest frame 130 includes an armrest body 131 and two armrest rods 132, 133. Both the front leg frame 160 and the rear leg frame 170 are of substantially H-shaped construction. The two upper ends of the front leg frame 160 are pivotally connected to the two upper ends of the rear leg frame 170, respectively. The two lower ends of the front leg frame 160 are located away from the two lower ends of the rear leg frame 170, respectively, to form two stable triangular support structures. The two lower ends of the front leg frame 160 and the two lower ends of the rear leg frame 170 each are provided with two wheel assemblies 181, 182. The armrest body 131 is of a substantially U-shaped rod structure, with two ends connected to two pivot points of the front leg frame 160 and the rear leg frame 170 in a detachable or non-detachable manner, respectively. There are two armrest rods, a first armrest rod 132 and a second armrest rod 133, both extending substantially in the front-rear direction of the stroller. Both front ends of the two armrest rods 132, 133 are pivoted to the pivot points of the front leg frame 160 and the rear leg frame 170. There are two auxiliary frames 140 accordingly. Upper ends of the two auxiliary frames 140 are pivotally

connected to rear ends of the two armrest rods 132, 133, respectively. There are two connection frames 150 accordingly, both of substantially L-shaped construction. The two connection frames 150 each have one end pivotally connected to a lower end of each of the two auxiliary frames 140, and another end pivotally connected to either of the left and right sides of the rear leg frame 170.

5 Specifically, the handle frame 120 includes a handle body 121 of substantially U-shaped construction and two handle rods 122, 123 connected to both ends of the handle body 121. The bottom ends of the two handle rods 132, 133 are pivotally connected to the seat tubes 110.

[0169] Specifically, as shown in FIGS. 9 and 10, two seat tubes 110 are disposed on the left and right sides of the stroller, respectively. The seat assembly 200 includes two movable frames 220

10 slidably disposed on the two seat tubes 110, respectively, and a seat frame 230 fixed to the two movable frames 220. The following is an example of the structures of the seat tube 110 and the movable frame 220 on one of the two sides.

[0170] As shown in FIGS. 11-13, the seat tube 110 extends substantially in the front-rear direction of the stroller. The front and rear ends of the seat tube 110 are pivotally connected to the front leg

15 frame 160 and the rear leg frame 170, respectively. The movable frame 220 includes a sliding sleeve 221, a connecting portion 222, a first mounting portion 223, and a second mounting portion 224.

[0171] The sliding sleeve 221 is sleeved outside the seat tube 110 and can move along the seat tube 110. The connecting portion 222 is attached to a lower side of the sliding sleeve 221. The connecting portion 222 is provided with a groove mouth 2221. One or both of opposite side walls of the groove

20 mouth 2221 is provided with a guiding groove 2222 extending therethrough. The connecting portion 222 has a substantially L-shaped construction including a first connecting segment 2223 and a second connecting segment 2224 connected to each other. The first connecting portion 2223 extends in a direction parallel to the seat tube 110 and is connected to the sliding sleeve 221 on one side. One end of the second connecting segment 2224 is connected to one end of the first connecting segment 2223.

25 The extending direction of the second connecting segment 2224 intersects with the extending direction of the first connecting segment 2223. The second connecting segment 2224 is disposed at an angle to the sliding sleeve 221, so that a recess 225 is formed between the second connecting segment 2224 and the sliding sleeve 221 (as shown in FIG. 13). The wall of the recess 225 forms an engagement portion 226. The guiding groove 2222 includes a first groove section 2222a and a second

30 groove section 2222b in communication with each other. The first groove section 2222a extends in the movement direction of the movable frame 220. The extending direction of the second groove section 2222b intersects with the extending direction of the first groove section 2222a. An end of the first groove section 2222a away from the second groove section 2222b is a first end 2222c, and an end of the second groove section 2222b away from the first groove section 2222a is a second end

35 2222d. In this embodiment, the guiding groove 2222 is provided substantially along the extending direction of the connecting portion 222. In other embodiments, the connecting portion 222 may also be of other shapes, and the guiding groove 2222 is not necessary to be provided along the extending

direction of the connecting portion 222. The first mounting portion 223 is attached to an inner side of the sliding sleeve 221, i.e., a side of the sliding sleeve 221 facing the seat tube 110 on the other side. A side of the seat frame 230 is mounted to the first mounting portion 223. The second mounting portion 224 is disposed on the rear upper side of the sliding sleeve 221. In this embodiment, the movable frame 220 is a one-piece structure.

[0172] Specifically, as shown in FIGS. 12 and 13, the drive assembly 600 includes a first drive rod 610 and a second drive rod 620 pivotally connected to each other. An end of the first drive rod 610 away from the second drive rod 620 is connected to the handle frame 120. An end of the second drive rod 620 away from the first drive rod 610 is connected to the handle frame 120. In this embodiment, the end of the second drive rod 620 away from the first drive rod 610 is connected to the second mounting portion 224 of the movable frame 220. In this way, in the folding or expanding process of the carrier frame 100, the handle frame 120 can be rotated to drive the movable frame 220 to slide along the seat tube 110. In this embodiment, the drive assembly 600 further includes a pivot shaft 630. One end of the pivot shaft 630 is fixed to the bottom end of the handle rod 122 or 123, and the other end of the pivot shaft 630 is pivotally connected to the rear end of the seat tube 110 after passing through the connection frame 150, the auxiliary frame 140, and the end of the first drive rod 610 away from the second drive rod 620. The end of the first drive rod 610 away from the second drive rod 620 is fixedly connected to the pivot shaft 630. In this way, the handle rod 122, 123 in rotation can drive the first drive rod 610 and the second drive rod 620 to pivot via the pivot shaft 630, so that the second drive rod 620 can push the movable frame 220 to slide along the seat tube 110.

[0173] Further, as shown in FIGS. 12 and 13, the stroller may also include a folding locking mechanism 700. The folding locking mechanism 700 may specifically include a first operating member 710, a first traction member (not shown), a locking pin 730, and a first sliding block 740. In this embodiment, there is one first operating member 710 which is operably disposed in a substantially central portion of the handle body 121, but not limited thereto. There are two first traction members, two locking pins 730 and two first sliding blocks 740 disposed on the left and right sides of the stroller. The following is an example of the folding locking mechanism 700 on one of the two sides.

[0174] As shown in FIGS. 12 and 13, the first sliding block 740 is slidably disposed on the handle rod 122 or 123. One end of the first traction member is connected to the first operating member 710 and the other end of the first traction member is connected to the first sliding block 740. The first operating member 710 is operated to drive the first sliding block 740 to slide upwardly along the handle rod 122 or 123 via the first traction member. A first locking groove 1503a is formed at a connecting portion of the connection frame 150 with the auxiliary frame 140. A sliding groove 1403 is formed on a side of the auxiliary frame 140 facing the handle rod 122 or 123, i.e., the outer side of the auxiliary frame 140. The locking pin 730 is slidably disposed in the sliding groove 1403. When the stroller switches to the expanded state, the locking pin 730 is switchable between an expanded

and locked position and an expanded and unlocked position. Specifically, when the stroller switches to the expanded state, the first locking groove 1503a is aligned with the sliding groove 1403, and the locking pin 730 can be inserted into the first locking groove 1503a (i.e., in the expanded and locked position) to lock the carrier frame 100 in the expanded state. The locking pin 730 can be removed
5 from the first locking groove 1503a (i.e., in the expanded and unlocked position) to unlock the carrier frame 100 in the expanded state, so that the carrier frame 100 can be folded. The locking pin 730 includes a locking portion 731 and a first push portion 732 connected to each other. The locking portion 731 is slidably disposed in the sliding groove 1403 and can be inserted into the first locking groove 1503a. One end of the first push portion 732 is fixed to the locking portion 731, and the other
10 end of the first push portion 732 protruding toward the handle rod 122 or 123. The first sliding block 740 is provided with a second push portion 741 protruding toward the auxiliary frame 140. The second push portion 741 can engage the lower side of the first push portion 732. In this way, when the first operating member 710 is operated, the first operating member 710 can pull the first sliding block 740 to move upward via the first traction member, and due to the engagement of the second
15 push portion 741 with the first push portion 732, the first sliding block 740 can drive the locking pin 730 to move upward to the expanded and unlocked position where the locking portion 731 of the locking pin 730 is removed from the first locking groove 1503a, thereby unlocking the carrier frame 100 in the expanded state.

[0175] As shown in FIG. 13, FIG. 17a, and FIG. 17b, a second locking groove 1503b may also be
20 formed at the connecting portion of the connection frame 150 with the auxiliary frame 140. When the stroller switches to the folded state, the locking pin 730 is switchable between a folded and locked position and a folded and unlocked position. Specifically, when the stroller is switched to the folded state, the second locking groove 1503b is aligned with the sliding groove 1403, and the locking pin 730 can be inserted into the second locking groove 1503b (i.e., in the folded and locked position) to
25 lock the carrier frame 100 in the folded state. The locking pin 730 can be removed from the second locking groove 1503b (i.e., in the folded and unlocked position) to unlock the carrier frame 100 in the folded state, so that the carrier frame 100 can be expanded. When the first operating member 710 is operated, the first operating member 710 can pull the first sliding block 740 to move upward via the first traction member, and due to the engagement of the second push portion 741 with the first
30 push portion 732, the first sliding block 740 can drive the locking pin 730 to move upward to the folded and unlocked position where the locking portion 731 of the locking pin 730 is removed from the second locking groove 1503b, thereby unlocking the carrier frame 100 in the folded state.

[0176] The first locking groove 1503a and the second locking groove 1503b may be provided on
35 opposite sides of the pivot shaft 630 that pivotally connecting the connection frame 150 and the auxiliary frame 140, so that when the carrier frame 100 is in the expanded state, the first locking groove 1503a is aligned with the sliding groove 1403, and during the switching of the carrier frame 100 from the expanded state to the folded state, the connection frame 150 rotates about the pivot shaft

630 with respect to the auxiliary frame 140 to allow the second locking groove 1503b to be aligned with the sliding groove 1403 when the carrier frame 100 is in the folded state.

[0177] Further, the stroller may include an orientation-switching locking mechanism 900. The orientation-switching locking mechanism 900 may specifically include a second operating member 910, a second traction member (not shown), and a second sliding block 920. As shown in FIG. 10, there are two second operating members 910 operably disposed on the inner sides of the two handle rods 122, 123, respectively. Referring to FIGS. 12 and 13 together, there are two second traction members and two second sliding blocks 920 disposed on the left and right sides of the stroller, respectively. The following is an example of the orientation-switching locking mechanism 900 on one of the sides.

[0178] As shown in FIGS. 12 and 13, the second sliding block 920 is slidably disposed on the handle rod 122 or 123. The second sliding block 920 is disposed above the first sliding block 740, i.e., the second sliding block 920 is located at a side of the first sliding block 740 close to the handle body 121. One end of the second traction member is connected to the second operating member 910, and the other end of the second traction member is connected to the second sliding block 920. The upper end of the auxiliary frame 140 is provided with a first clamping block 930, referring to FIG. 9 together, the upper end of the front leg frame 160 is provided with a second clamping block, and the second sliding block 920 is provided with a clamping groove 921 that can clamp either the first clamping block 930 or the second clamping block 940 (FIG. 10) therein. Referring to FIG. 10 together, as above described, the second operating member 910 can be operated to drive the second sliding block 920 to move upward along the handle rod 122 or 123 via the second traction member, during which the clamping block 930 is removed from the clamping groove 921 of the second sliding block 920, so that the handle frame 120 can be rotated to allow the second clamping block 940 to be clamped into the clamping groove 921 of the second sliding block 920. In this way, the switching of the handle frame 120 between the frontward and rearward orientations can be achieved. That is, before the orientation switching, the front leg frame 160 is located in front of the rear leg frame 170, and after the orientation switching, the front leg frame 160 is located in the rear of the rear leg frame 170. It should be noted that the front and rear herein are in reference to the direction of travel of the stroller. Specifically, the travel direction when the front leg frame 160 is located in front of the rear leg frame 170 of the stroller may be referred to as a first travel direction F1, as shown in FIG. 15, and the travel direction when the front leg frame 160 is located in the rear of the rear leg frame 170 of the stroller may be referred to as a second travel direction F2, as shown in FIG. 16.

[0179] Specifically, as shown in FIGS. 13 and 14, a connecting rod assembly 1500 is provided on each of the left and right sides of the stroller. One of the connecting rod assemblies 1500 is described below as an example to illustrate its specific structure.

[0180] The connecting rod assembly 1500 includes a first connecting rod 1510 and a second connecting rod 1520. The first connecting rod 1510 has a substantially elongated structure. The first

connecting rod 1510 has a first movement section and a first pivot section 1512. In this embodiment, the first movement section 1511 and the first pivot section 1512 are located at two ends of the first connecting rod 1510, respectively. The first movement section 1511 is movably pivotally connected to the seat assembly 200, and the first pivot section 1512 is pivotally connected to the carrier frame 100. In this embodiment, the first movement section 1511 is provided with a first movement protrusion 15111. The end of the first connecting rod 1510 having the first movement section 1511 is inserted into the connecting portion 222 through the groove mouth 2221, and the first movement protrusion 15111 is inserted into the guiding groove 2222 of the connecting portion 222 and can slide along the guiding groove 2222, so that the first movement section 1511 can slide relative to the connecting portion 222. In this way, the first connecting rod 1510 is movably socketed within the groove mouth 2221 and can be guided and positioned via the first movement protrusion 15111 and the guiding groove 2222, increasing the stability of the movement of the first connecting rod 1510. When the stroller is in the expanded state, the first movement protrusion 15111 is located at the first end 2222c of the guiding groove 2222. When the stroller is in the folded state, the first movement protrusion 15111 is located at the second end 2222d of the guiding groove 2222. The first pivot section 1512 is pivotally connected to the lower end of the auxiliary frame 140 via a pivot shaft 97. In this embodiment, the above-described seat tube 110 is pivotally connected to the auxiliary frame 140 via the pivot shaft 630, and the pivot shaft 630 is located away from the lower end of the auxiliary frame 140 with respect to the pivot shaft 97, i.e., the pivot shaft 630 is located above the pivot shaft 97. The first connecting rod 1510 is also provided with a driving groove 1513 located between the first movement section 1511 and the first pivot section 1512 and extending along a length direction of the first connecting rod 1510.

[0181] Further, as shown in FIGS. 13 and 14, the second connecting rod 1520 includes a first rod part 1521 and a second rod part 1522 connected to each other. The first rod part 1521 and the second rod part 1522 are at an angle to each other and not perpendicular to each other, so that the second connecting rod 1520 has a substantially L-shaped structure. An end of the first rod part 1521 away from the second rod part 1522 is provided with a second movement section 1523. The second rod part 1522 is provided with a second pivot section 1524. The second movement section 1523 is movably pivotally connected to the first connecting rod 1510. The second pivot section 1524 is pivotally connected to the backrest assembly 400. In this embodiment, the second movement section 1523 is provided with a second movement protrusion 15231 inserted into the driving groove 1513 of the first connecting rod 1510 and slidable along the driving groove 1513. The connecting portion of the second rod part 1522 with the first rod part 1521 is pivotally connected to the backrest tube 450 (as described below) of the backrest assembly 400 via the first connecting shaft 95. Further, when the stroller is in the expanded state, the second movement protrusion 15231 engages the engagement portion 226 on the movable frame 220 to enable the stroller to better remain in the expanded state. As shown in FIG. 9, when the stroller is in the folded state, the second movement protrusion 15231

is disengaged from the engagement portion 226 on the movable frame 220. In other embodiments, it may also be the case that the first rod part 1521 or the second rod part 1522 is pivotally connected to the backrest tube 450 of the backrest assembly 400 via the first connecting shaft 95, and the second pivot section 1524 is pivotally connected to the first backrest frame 610 (as described below) of the backrest assembly 400 via the second connecting shaft 96.

[0182] Specifically, as shown in FIGS. 12-14, the backrest assembly 400 includes a first backrest frame 410, a second backrest frame 420, a backrest tube 450, a connecting harness 430, and a harness regulator 440.

[0183] As shown in FIGS. 12-14, the first backrest frame 410 includes two backrest rods 412, 413 in a substantially elongated shape disposed on the left and right sides of the stroller. The lower ends of the two backrest rods 412, 413 are pivotally connected to the second pivot sections 1524 of the two second connecting rods 1520 via two second connecting shaft 96, respectively. The second backrest frame 420 is substantially U-shaped and includes a backrest horizontal frame 421 and two backrest vertical frames 422 connected to two ends of the backrest horizontal frame 421, respectively. The upper ends of the two backrest rods 412, 413 are pivotally connected to the two ends of the backrest horizontal frame 421, respectively. The two ends of the two backrest rods 412, 413 away from the backrest horizontal frame 421 are pivotally connected to the backrest tube 450, respectively. The backrest tube 450 is substantially U-shaped. As described above, the two bottom ends of the backrest tube 450 are pivotally connected to the two second connecting rods 1520 via two first connecting shafts 95, respectively. Further, the backrest assembly 400 may also include two curved limiting plates 460. Each limiting plate 460 is pivotally connected between one of two bottom ends of the backrest tube 450 and one of the second connecting rods 1520. Providing the limiting plate 460 between the backrest tube 450 and the second connecting rod 1520 can reduce the sway of the backrest tube 450 in rotation. The backrest tube 450 may be fixed with a backrest board (not shown). A cover such as a tarp may be covered onto the outer sides of the first backrest frame 410, the second backrest frame 420, and the backrest tube 450, to form a space for the infant or toddler to lean on or lie down.

[0184] Further, as shown in FIG. 12, one end of the connecting harness 430 is connected to the second connecting rod 1520 of the connecting rod assembly 1500 on one side of the stroller, and the other end of the connecting harness 430 passes over the side of backrest tube 450 facing away from the seat assembly 200 to be connected to the second connecting rod 1520 of the connecting rod assembly 1500 on the other side of the stroller. The harness regulator 440 is disposed on the connecting harness 430 for adjusting the length of the connecting harness 430. In this embodiment, as shown in FIG. 14, each of the two ends of the connecting harness 430 is connected to an end of the second connecting rod 1520 away from the first connecting rod 1510 at the same side of the stroller. The connecting point of the connecting harness 430 with the second connecting rod 1520 is located at a side of the second connecting shaft 96 away from the first connecting rod 1510, i.e., at

the upper side of the second connecting shaft 96, i.e., on the upper end of the second rod part 1522.

[0185] Further, the length of the connecting harness 430 is capable of being adjusted between a first length and a second length by the harness regulator 440. The first length is a minimum length of the connecting harness 430 and the second length is a maximum length of the connecting harness 430.

5 When the connecting harness 430 is of the first length, as shown in FIG. 14, the backrest tube 450 is at a first inclined angle relative to the seat assembly 200, the backrest tube 450 is in the same plane as the second backrest frame 420, and the stroller is in a seat mode. When the connecting harness 430 is of the second length, as shown in FIG. 15, the backrest tube 450 is at a second inclined angle relative to the seat assembly 200, and the stroller is in the recliner mode. At this time, as can be seen
10 from the side cross-section of the stroller shown in FIG. 15, the backrest tube 450, the second backrest frame 420, the first backrest frame 410, and the second rod part 1522 of the second connecting rod 1520 are connected head to tail to form a generally rectangular frame structure such that the back and head of the infant or young child can lie down in the space enclosed by the backrest tube 450, the second backrest frame 420, the first backrest frame 410, the second rod part 1522 of the second
15 connecting rod 1520, and the tarp. The second inclined angle is greater than the first inclined angle.

[0186] FIG. 16 shows a schematic structural view of the stroller when the connecting harness 430 is of the second length and the handle frame 120 is reversed. Referring to FIG. 15 together, while the handle frame 120 is operated to rotate so that the travel direction of the stroller is switched from the first forward direction to the second forward direction, the handle rods 122, 123 drives the first drive
20 rod 610 and the second drive rod 620 to pivot via the pivot shaft 630, and the second drive rod 620 drives the movable frame 220 and the seat frame 220 to move along the seat tube 110 in the third direction D3, i.e., from FIG. 16, drives the movable frame 220 and the seat frame 220 to move rearward (in the direction D3), which also causes the infant or toddler seating on the seat frame 230 to move rearward (in the direction D3), which allows the caregiver to push the stroller with less effort.
25 Further, as shown in FIGS. 15 and 16, when the travel direction of the stroller is switched from the first forward direction to the second forward direction, the first connecting rod 1510 is moved in the second forward direction so that the first movement section 1511 is located substantially in the connection joint between the first groove section 2222a and the second groove section 2222b, and the first connecting rod 1510 extends outside of the connecting portion 222 via the groove mouth 2221.

30 **[0187]** Further, as shown in FIGS. 14-16, regardless of the length of the connecting harness 430, and regardless of whether the travel direction of the stroller is the first travel direction or the second travel direction, as long as the stroller is in the expanded state, the second movement protrusion 15231 is capable of engaging the engagement end 226 of the movable frame 220, thereby limiting the position of the second connecting rod 1520 and fixing the backrest tube 450 at a certain inclined angle.

35 **[0188]** The folding process of the stroller will be described in detail with the right side of the stroller as an example, and the folding process at the left side of the stroller is substantially the same as that at the right side of the stroller.

[0189] When it is required to fold the stroller, as shown in FIGS. 9 and 10, the first operating member 710 on the handle frame 120 can be operated so that the first operating member 710 drives the first sliding block 740, via the first traction member, to slide in a direction close to the handle body 121, i.e., in the first direction D1. Meanwhile, as shown in FIGS. 12 and 13, the first sliding block 740 pushes the first push portion 732 of the locking pin 730 via the second push portion 741, causing the locking pin 730 to also slide in the first direction D1 until it is removed from the first locking groove 1503a to unlock the folding locking mechanism 700. Then the handle frame 120 is pressed down so that the handle frame 120 and the auxiliary frame 140 are rotated to be folded in a direction close to the seat tube 110, i.e., in the second direction D2 in FIG. 12. In the process of folding by rotation, the auxiliary frame 140 also drives the movable frame 220 to slide toward the front end of the seat tube 110, i.e., in the third direction D3 in FIG. 12, due to the linkage function of the first drive rod 610 and the second drive rod 610. At the same time, as shown in FIGS. 12 and 14, the movable frame 220 sliding in the third direction D3 also drives the first movement protrusion 15111, via the cooperation of the guiding groove 2222 and the first movement protrusion 15111, to first slide along the first groove 2222a, so that the first connecting rod 1510 slides in the opposite direction of the third direction D3. At the same time, due to the sliding of the movable frame 220, the second movement protrusion 15231 of the second connecting rod 1520 disengages from the engagement end 226 (see FIG. 13) of the movable frame 220. When the handle frame 120 is further pressed down, the handle frame 120 and auxiliary frame 140 further pivots, thereby driving the first pivot shaft 97 to move downward and further pulling the first movement protrusion 15111 of the first connecting rod 1510 to slide to the second groove 2222b. As shown in FIG. 17, in the process of the first movement protrusion 15111 sliding to the second end 2222d of the guiding groove 2222, the angle between the first connecting rod 1510 and the handle rod 122 or 123 gradually becomes smaller, i.e., the first connecting rod 1510 rotates clockwise with respect to the first pivot shaft 97, i.e., the first connecting rod 1510 pivots in the fourth direction D4 in FIG. 17. At the same time, the first connecting rod 1510 in sliding, also drives the second connecting rod 1520 to rotate about the first connecting shaft 95 in a counterclockwise direction, i.e., to pivot in the fifth direction D5 in FIG. 14 or FIG. 17, via the cooperation of the driving groove 1513 and the second movement protrusion 15231 (see FIG. 5). The second connecting rod 1520 in rotation also drives the first backrest frame 410 and backrest tube 450 pivotally connected thereto, together with the entire backrest assembly 400, to pivot and fold in a direction close to the seat assembly 200, thereby achieving the folding of the whole stroller. FIGS. 17a and 17b illustrate a schematic structural view of the stroller in the folded state, where the movable frame 220 slides to a position near the front end of the seat tube 110, the first movement protrusion 15111 moves to the second end 2222d, the second movement protrusion 15231 is located substantially in the middle of the driving groove 1513, and the backrest assembly 400, the seat assembly 200, and the carrier frame 100 are folded relatively close to each other, occupying a smaller space, and being easy to store and carry. At this time, the sliding groove 1403 and the second

locking groove 1503b are aligned with each other, and the first operating member 710 can be released, so that the first sliding block 740 is moved in the opposite direction of the first direction D1 under the action of the sliding block-restoring member (not shown), until the locking pin 730 is inserted into the second locking groove 1503b and the stroller is locked in the folded state.

- 5 **[0190]** In contrast to the folding process, when the folded stroller needs to be unfolded, as shown in FIGS. 17a and 17b, the first operating member 710 can be operated so that the first operating member 710 drives the first sliding block 740, via the first traction member, to slide in a direction close to the handle body 121, i.e., in the first direction D1. At the same time, the first sliding block 740 pushes the first push portion 732 of the locking pin 730 via the second push portion 741, causing the locking
- 10 pin 730 to slide in the first direction D1 until it is removed from the second locking groove 1503b to unlock the folding locking mechanism 700 and unlock the stroller in the folded state. Then the handle frame 120 can be pulled upward to drive the first pivot shaft 97 to move upward. The first pivot shaft 97 then drives the first connecting rod 1510 to rotate counterclockwise about the first pivot shaft 97, i.e., pivots in the fifth direction D5 in FIG. 17a, so that the first movement protrusion 15111 moves
- 15 from the second end 2222d to the first end 2222c along the guiding groove 2222. At the same time, the first connecting rod 1510 drives the second connecting rod 1520, via the cooperation of the driving groove 1513 and the second movement protrusion 15231 (see FIG. 14), to rotate about the first connecting shaft 95 in a clockwise direction, i.e. in the fourth direction D4. The second connecting rod 1520 in rotation also drives the first backrest frame 410 and the backrest tube 450 pivotally
- 20 connected thereto, together with the entire backrest assembly 400 to pivot and expand in a direction away from the seat assembly 200, as shown in FIG. 14. At this time, the sliding groove 1403 and the first locking groove 1503a are aligned. Then the first operating member 710 can be released, so that the first sliding block 740 moves in the opposite direction of the first direction D1 under the action of the sliding block-restoring member (not shown) until the locking pin 730 is re-inserted into the
- 25 first locking groove 1503a to lock the stroller in the expanded state.

[0191] The stroller provided in the second aspect of the present disclosure has at least the following technical effects:

- [0192]** In the above-described stroller, the connecting rod assembly 1500 is movably connected to the carrier frame 100 and the seat assembly 200, and the backrest assembly 400 is movably connected
- 30 to the seat assembly 200 via the connecting rod assembly 1500. When the carrier frame 100 is switched from the expanded state to the folded state, the carrier frame 100 is able to drive the backrest assembly 400 to fold in the direction close to the seat assembly 200 through the connecting rod assembly 1500. The overall folding structure is relatively simple and convenient to use.

[0193] Third aspect

- 35 **[0194]** Referring to FIGS. 18 to 23, and in particular to FIGS. 18, 19, 25 and 26, the third aspect of the present disclosure provides a carrier, which may be a child stroller, including a carrier frame 100, a seat assembly 200, a backrest assembly 400, and a linkage mechanism 500. The carrier frame 100

includes two opposite lateral frames 101 and 102 and a handle frame 120. The seat assembly 200 is mounted between the two lateral frames 101 and 102, and is configured to be movable between a first position and a second position in a front-rear direction P, Q relative to the lateral frames 101 and 102. The backrest assembly 400 is mounted to the seat assembly 200 and is configured to be adjustable in angle relative to the seat assembly 200. The handle frame 120 is pivotally connected to the lateral frames 101, 102, and is configured to drive the seat assembly 200 to move in the front-rear direction P, Q relative to the lateral frames 101 and 102 when it pivot relative to the lateral frames 101 and 102. The linkage mechanism 500 is disposed on one side of the seat assembly 200 and is connected to the backrest assembly 400. The linkage mechanism 500 is configured to keep the angle adjustment range of the backrest assembly 400 relative to the seat assembly 200 unchanged when the seat assembly 200 moves between the first position and the second position.

[0195] It should be understood that the phrase “keep the angle adjustment range of the backrest assembly 400 relative to the seat assembly 200 unchanged” herein means that without adjusting the angle of the backrest assembly 400 relative to the seat assembly 200 by an angle adjustment mechanism, the angle of the backrest assembly 400 relative to the seat assembly 200 keeps substantially the same or unchanged within a certain range when the seat assembly 200 moves from the first position to the second position or from the second position to the first position.

[0196] The carrier frame 100 may include two seat tubes 110 provided on the two lateral frames 101, 102. The seat assembly 200 may be provided on the seat tube 110. In some embodiments, the lateral frame 101 includes a first front leg support rod 161 and a first rear leg support rod 171. The first front leg support rod 161 and the first rear leg support rod 171 are connected to each other to form a substantially triangular structure with the ground. In some embodiments, the lateral frame 101 further includes a first armrest rod 132 connected to the first front leg support rod 161 and/or the first rear leg support rod 171. The first armrest rod 132 is positioned substantially parallel to the ground or at a slight angle with respect to the ground. In some embodiments, the lateral frame 101 further includes an auxiliary frame 140 pivotally connected to the first armrest rod 132 and the seat assembly 200, respectively. In other embodiments, the auxiliary frame 140 may also be connected to the first rear leg support rod 171 and forms a substantially triangular structure with the first armrest rod 131 and the first rear leg support rod 171. The lateral frame 102 is left-right symmetrically provided with the lateral frame 101. For example, the lateral frame 102 includes a second front leg support rod 162, a second rear leg support rod 172, a second armrest rod 133, and another auxiliary frame 140, which are left-right symmetrically provided with the first front leg support rod 161, the first rear leg support rod 171, the first armrest rod 132, and the auxiliary frame 140, respectively.

[0197] The seat assembly 200 is movably (e.g., slidably) disposed on the seat tube 110 in the front-rear direction P, Q of the carrier frame 100. In some embodiments, the seat assembly 200 includes a movable frame 220 and a seat frame 230 mounted to the movable frame 220. The movable frame 220 is movably (e.g., slidably) disposed on the seat tube 110 in the front-rear direction P, Q of the carrier

frame 100. In some embodiments, the movable frame 220 includes a sliding sleeve 221 (best seen in FIG 21 and 22), which is slidably fitted on the seat tube 110 in the front-rear direction P, Q of the carrier frame 100. It is to be understood that the movable frame 220 can also be movably disposed on the seat tube 110 in the front-rear direction P, Q of the carrier frame 100 by other means, for example, by providing a sliding groove.

[0198] The backrest assembly 400 may include a backrest tube 450 used to support the backrest board (not shown). The backrest assembly 400 may be mounted to the seat assembly 200 via the backrest tube 450. In some embodiments, the bottom section of the backrest tube 450 is pivotally connected to the movable frame 220, allowing the bottom section of the backrest tube 450 to slide with the movable frame 220 relative to the seat tube 110. Referring to FIGS. 20 and 25, in some embodiments, the backrest assembly 400 includes an adjustable harness 430 (for clarity, harness is omitted in other FIG.s, for example, not shown in FIGS. 18 and 19, but the stroller in FIGS. 18 and 19 can be similarly provided with the harness). The two ends of the adjustable harness 430 are connected to the two lateral frames 101, 102, respectively. The middle-upper section of the backrest tube 450 is supported on the adjustable harness 430.

[0199] The handle frame 120 can pivot relative to the lateral frames 101, 102 to switch the stroller 10 between the first usage state (e.g., the front-facing state, as shown in FIG. 18) and the second usage state (e.g., the rear-facing state, as shown in FIG. 18). The handle frame 120 may be disposed on the outer side of the lateral frames 101, 102 and pivotally connected to the lateral frames 101, 102. In some embodiments, the handle frame 120 is pivotally connected to the auxiliary frames 140 of the lateral frames 101, 102. In some embodiments, the handle frame 120 is pivotally connected to the lateral frames 101, 102 (e.g., the auxiliary frames 140) via the pivot shafts 630 (as shown in FIG. 21). The pivot shaft 630 may pass through the lateral frame 101, 102 (e.g., the auxiliary frame 140). In other embodiments, the first usage state can also be the rear-facing state, and the second usage state can be the front-facing state, without limitation.

[0200] As shown in FIG. 20, the handle frame 120 may be connected to the seat assembly 200, for example, to the movable frame 220 of the seat assembly 200, via a drive assembly 600. The drive assembly 600 may be configured to convert the pivot of the handle frame 120 relative to the lateral frames 101, 102 into a movement of the seat assembly 200, such as the movement of the movable frame 220 of the seat assembly 200, in the front-rear direction of the carrier frame 100.

[0201] In some embodiments, the drive assembly 600 is disposed on the inner side of the lateral frame 101, 102. In some embodiments, referring to FIGS. 20 and 21, the handle frame 120 is connected to the drive assembly 600 via the pivot shaft 630 passing through the lateral frame 101, 102. In some embodiments, the drive assembly 600 is a connecting rod mechanism.

[0202] In some embodiments, as shown in FIGS. 20 to 24, the drive assembly 600 includes a first drive rod 610 and a second drive rod 620 disposed on a side of the movable frame 220 away from the lateral frame 101, 102. The first end of the first drive rod 610 is connected to the handle frame 120

via the pivot shaft 630. Specifically, one end of the pivot shaft 630 is fixedly connected to the handle frame 120, and the other end of the pivot shaft 630 is fixedly connected to the first end of the first drive rod 610 after passing through the lateral frame 101 or 102 (e.g., through the auxiliary frame 140) and the seat tube 110. For example, the handle frame 120 and the first end of the first drive rod 610 may be provided with square holes, thereby fixedly connecting the pivot shaft 630 to the handle frame 120 and the first end of the first drive rod 610. However, the present disclosure is not limited thereto, for example, the pivot shaft 630 may be connected to components such as the handle frame 120 and the first drive rod 610 according to the connection manner described in the first aspect of the present disclosure in connection to FIGS. 3 and 4. A second end of the first drive rod 610 is pivotally connected to a first end of the second drive rod 620. For example, an additional pivot shaft (not shown) may pass through the second end of the first drive rod 610 and the first end of the second drive rod 620 and be fixed to the movable frame 220, so that the second end of the first drive rod is pivotally connected to the first end of the second connecting rod and is pivotable relative to the movable frame 220. Further, additional pivot shaft can pass through the backrest tube 450 to pivotally connect the backrest tube 450 to the movable frame 220. As the movable frame 220 moves in the front-rear direction P, Q of the carrier frame 100, the backrest tube 450 can move in synchronization with the movable frame 220. The second end of the second drive rod 620 is connected to the seat assembly 200, for example, to the movable frame 220. When the handle frame 120 pivots relative to the lateral frames 101, 102, the handle frame 120 is able to rotate the first drive rod 610 via the pivot shaft 630 and drive the seat assembly 200 via the second drive rod 620 to move in the front-rear direction of the carrier frame 100, for example, drive the movable frame 220 to move (e.g., slide) in the front-rear direction of the carrier frame 100 relative to the seat tube 110. It will be appreciated that the above description is only an example of the drive assembly 600, and the drive assembly 600 may also be configured in other configurations. For example, the first drive rod 610 and the second drive rod 620 may be provided between the lateral frame 101, 102 and the seat tube 110. For example, the number of drive rods may be varied. For example, other drive mechanisms than the connecting rod mechanism may also be employed.

[0203] Referring to FIGS. 18 and 19, in the stroller provided in the third aspect of the present disclosure, when the user rotates the handle frame 120, the handle frame 120 drives the movable frame 220 via the drive assembly 600 to move in the front-rear direction of the carrier frame 100 relative to the seat tube 110, at which time the bottom section of the backrest tube 450 will move in synchronization with the movable frame 220, resulting in a change in the angle of the backrest tube 450 relative to the seat assembly 200.

[0204] The third aspect of the present disclosure provides the linkage mechanism 500 which is configured such that when the handle frame 120 pivots relative to the lateral frames 101, 102, the backrest assembly 400 moves in the front-rear direction of the carrier frame 100 relative to the lateral frames 101, 102 without changing its angle relative to the seat assembly 200. Specifically, the linkage

mechanism 500 is connected, on one hand, to the handle frame 120 or the seat assembly 200, and on the other hand, to the adjustable harness 430 of the backrest assembly 400, so that when the handle frame 120 pivots relative to the lateral frame 101, 102, the middle-upper section of the backrest tube 450 is driven by the adjustable harness 430 to move in synchronization with the bottom section of the backrest tube 450, which enables the backrest tube 450 to move in synchronization with the movable frame 220 in the front-rear direction of the carrier frame without pivoting relative to the movable frame 220. It should be understood that the middle-upper section of the backrest tube 450 is described herein relative to the bottom section of the backrest tube 450, and refers to a position at a distance from the bottom section of the backrest tube 450. The backrest assembly 400 is supported due to the pivotable connection of the bottom section of the backrest tube 450 to the movable frame 220 and the cooperation of the middle-upper section of the backrest tube 450 with the adjustable harness 430.

[0205] The linkage mechanism 500 of the present disclosure will be described in detail below in connection with the first embodiment, the second embodiment, and the third embodiment.

[0206] Referring to FIGS. 18-24, in the first embodiment, the linkage mechanism 500 is connected to each of the seat assembly 200 (e.g., movable frame 220) and the end of the adjustable harness 430, and is configured to force the end of the adjustable harness 430 to move synchronously with the seat assembly 200 when the seat assembly 200 moves in the front-rear direction of the carrier frame 100, so that both the middle-upper section of the backrest tube 450 supported on the adjustable harness 430 and the bottom section of the backrest tube 450 pivotally connected to the seat assembly 200 can move synchronously with the seat assembly 200 in the front-rear direction of the carrier frame 100, without changing the angle between the backrest tube 450 and the seat assembly 200.

[0207] Referring to FIGS. 20-24, the linkage mechanism 500 may include a linkage rod 510. A first end of the linkage rod 510 is connected to the seat assembly 200, e.g., to the movable frame 220. A second end of the linkage rod 510 is movably mounted to the lateral frame 101, 102 in the front-rear direction of the carrier frame 100, and is fixedly connected to the end of the adjustable harness 430. In this way, when the seat assembly 200 moves in the front-rear direction of the carrier frame 100 relative to the lateral frame 101, 102, the first end of the linkage rod 510 drives the second end of the linkage rod 510 and thus the end of the adjustable harness 430 to move in the front-rear direction P, Q, thereby moving the middle-upper section of the backrest tube 450 in the front-rear direction P, Q. Therefore, when the seat assembly 200 moves in the front-rear direction of the carrier frame 100 relative to the lateral frames 101, 102, the middle-upper section of the backrest tube 450 and the bottom section of the backrest tube 450 moves synchronously, so that the backrest tube 450 will not pivot relative to the seat assembly 200 to change its angle relative to the seat assembly 200.

[0208] Referring to FIG. 21, the linkage rod 510 is provided between the lateral frame 101, 102 and the seat assembly 200, for example, between the lateral frame 101, 102 and the movable frame 220. Specifically, the lateral frame 101, 102 is provided with a first sliding groove 1303 extending in the front-rear direction P, Q of the carrier frame. The second end of the linkage rod 510 is slidably

mounted to the first sliding groove 1303. Further, the first sliding groove 1303 is provided on the armrest rod 132, 133. In some embodiments, the first sliding groove 1303 has a length that is the same as the distance traveled by the seat assembly 200 when it moves from the first position to the second position. It will be appreciated that the length of the first sliding groove 1303 may also be different from the distance traveled by the seat assembly 200 when it moves from the first position to the second position, for example, the length of the first sliding groove 1303 may be greater than that distance.

[0209] As shown in FIGS. 21-24, the first end of the linkage rod 510 is connected to the movable frame 220. Specifically, the first end of the linkage rod 520 is provided with a first protrusion 512 on a side thereof facing the movable frame 220. The movable frame 220 is provided with a socket or through-hole 214 (see FIGS. 22 and 24) for receiving the first protrusion 512. The linkage rod 510 is connected to the movable frame 220 by fitting the first protrusion 512 into the socket or through-hole 214. In some embodiments, the movable frame 220 is provided with a through-hole 214 for receiving the first protrusion 512, and a second protrusion 212 (see FIG. 24) extending from the through-hole 214 in a direction away from the linkage rod 510, and the first protrusion 512 passes through the second protrusion 212. In some embodiments, referring to FIGS. 22-24, the movable frame 220 has a recessed portion 213 on a side thereof facing the linkage rod 510. The socket or through-hole 214 is located in the recessed portion 213. The first end of the linkage rod 510 can be received in the recessed portion 213. The recessed portion 213 can limit the first end of the linkage rod 510 from rotating counterclockwise relative to movable frame 220. In some embodiments, the linkage mechanism 500 further includes a resilient member 520 (e.g., a torsion spring). One end of the resilient member 520 is looped around the periphery of the second protrusion 212, and the other end of the resilient member 520 is hooked to the side of the linkage rod 510 away from the movable frame 220, thereby limiting the clockwise rotation of the first end of the linkage rod 510 relative to the movable frame 220. Specifically, when the handle frame 120 is pivoted from the first usage state (see FIG. 18) to the second usage state (see FIG. 19), the recessed portion 213 may limit the counterclockwise rotation of the first end of the linkage rod 510, so that the second end of the linkage rod 510 may be driven to slide in the first direction P together with the first end of the linkage rod 510 (see FIG. 24). When the handle frame 120 is pivoted from the second usage state (see FIG. 19) to the first usage state (see FIG. 18), the resilient member 520 may limit the clockwise rotation of the first end of the linkage rod 510 so that the second end of the linkage rod 510 may be driven to slide in the second direction Q with the first end of the linkage rod 510 (see FIG. 24).

[0210] The movable frame 220 may include a sliding sleeve 221 and a mounting portion 224. The sliding sleeve 221 is sleeved outside the seat tube 110 and can move along the seat tube 110. The mounting portion 224 is provided on the upper side of the sliding sleeve 221. The socket or through-hole 214, the recessed portion 213, and the second protrusion 212 may all be provided on the mounting portion 224.

[0211] In the first embodiment provided in the third aspect of the present disclosure, when the user rotates the handle frame 120 to switch between the first usage state (see FIG. 18, for example) and the second usage state (see FIG. 19, for example), the handle frame 120 drives, via the drive mechanism 600, the movable frame 220 of the seat assembly 200 to move (e.g., slide) on the seat tube 110 in the front-rear direction of the carrier frame 100, during which the bottom section of the backrest tube 450 of the backrest assembly 400 moves with the movable frame 220 in the front-rear direction of the carrier frame 100. At the same time, the movable frame 220 drives the entirety (including the first end and the second end) of the linkage rod 510 to move in the front-rear direction of the carrier frame 100, so that the end of the adjustable harness 430 and thus the middle-upper section of the backrest tube 450 also move with the seat assembly 200 in the front-rear direction of the carrier frame 100. In this way, both the middle-upper section of the backrest tube 450 and the bottom section of the backrest tube 450 move in synchronization with the seat assembly 200, so that the angle of the backrest assembly 400 with respect to the seat assembly 200 will not change.

[0212] Referring to FIGS. 25-32, in the second embodiment, the linkage mechanism 500 is connected to each of the handle frame 120 and the end of the adjustable harness 430, and is configured to force the end of the adjustable harness 430 to move synchronously with the seat assembly 200 when the handle frame 120 pivots relative to the carrier frame 100.

[0213] Specifically, as shown in FIGS. 27 and 28, the linkage mechanism 500 includes a transmission assembly 530 and a sliding member 540. The sliding member 540 is slidably mounted to the lateral frame 101, 102 in the front-rear direction of the carrier frame 100 and connected to the end of the adjustable harness 430. The transmission assembly 530 is connected to each of the pivot shaft 630 passing through the lateral frame 101, 102 (e.g., the auxiliary frame 140) and the sliding member 540. The transmission assembly 530 is configured to convert the pivot of the handle frame 120 (i.e., the rotation of the pivot shaft 630) relative to the lateral frame 101, 102 into the sliding movement of the sliding member 540 in the front-rear direction of the carrier frame 100, thereby driving the end of the adjustable harness 430 and thus the middle-upper section of the backrest tube 450 to move synchronously with the bottom section of the backrest tube 450.

[0214] Specifically, the transmission assembly 530 may include a linkage gear 531, one or more driven gears 532, and an output gear 533. The linkage gear 531 is connected to the pivot shaft 630 via a traction member 550 and a driving wheel 560. Specifically, the driving wheel 560 is fixedly connected to the pivot shaft 630 and is capable of rotating with the pivot shaft 630. For example, the driving wheel 560 may be sleeved outside the pivot shaft 630. Referring to FIG. 28, the traction member 550 is connected to each of the driving wheel 560 and the linkage gear 531. The driving wheel 560 in rotation can drive the linkage gear 531 to rotate via the traction member 550. For example, the traction member 550 may be a cable. One end of the cable is fixed to a first position of the linkage gear 531. The other end of the cable extends to the driving wheel 560, wraps around the driving wheel 560, and then extends back to the linkage gear 531 to be fixed at a second position

opposite the first position of the linkage gear 531. The section of the cable wrapping around the driving wheel 560 is further fixed to a position (such as the position R indicated in FIG. 28) of the driving wheel 560. When the driving wheel 560 rotates, the length of the cable sections on both sides of the driving wheel 560 and the linkage gear 531 changes, causing the linkage gear 531 to rotate.

5 The linkage gear 531 engages the one or more driven gears 532, the one or more driven gears 532 further engage the output gear 533, the output gear 533 further engages the sliding member 540, so that the rotation of the linkage gear 533 can drive the sliding member 540 to move in the front-rear direction of the carrier frame 100. The sliding member 540 may be provided with teeth 541 (see FIG. 29) to engage the output gear 533. The rotation angle of the pivot shaft 630 is small. By providing
10 one or more driven gears 532 having teeth smaller than the teeth of the linkage gear 531, the small rotation angle of the linkage gear 531 can be amplified into a large rotation angle of the output gear 533, so that the sliding member 540 can be moved a larger distance. It should be understood that the above detailed description is only an example, and the person skilled in the art may make a number of adjustments, changes, and improvements thereto, for example, the driving wheel 560 may be
15 omitted, the traction member 550 may be connected to the pivot shaft 630 and the linkage gear 531, and the pivot shaft 630 in rotation may drive the linkage gear 531 to rotate via the traction member 550. As another example, where appropriate, the one or more driven gears 532 or the output gear 533 may be omitted and the linkage gear 531 may directly engage the sliding member 540. As another example, the number of the driven gears 532 may be adjusted as appropriate.

20 **[0215]** In some embodiments, the linkage mechanism 500 is provided inside the lateral frame 101, 102 such that the linkage mechanism 500 is not visible to the user. In some embodiments, the lateral frames 101, 102 defined one or more cavities therein. The transmission assembly 530, the sliding member 540, the traction member 550, and the driving wheel 560 are all provided within the one or more cavities of the lateral frame 101, 102.

25 **[0216]** In some embodiments, the transmission assembly 530 (including the linkage gear 531, the one or more driven gears 532, and the output gear 533) and the sliding member 540 are all provided in one or more cavities inside the armrest rod 132, 133. The driving wheel 560 is provided in the cavity inside the auxiliary frame 140 and is connected to the linkage gear 531 via the traction member 550.

30 **[0217]** As shown in FIGS. 30-32, the sliding member 540 may include a sliding portion 543 and a connecting portion 542, and the teeth 541 may be provided on the connecting portion 542. The connecting portion 542 is used for engaging the output gear 533. The linkage gear in rotation can drive the connecting portion 542 and thus the sliding portion 543 to slide in the front-rear direction of the carrier frame 100 via the driven gear 532 and the output gear 533.

35 **[0218]** As shown in FIGS. 29-32, the child stroller further includes a mounting seat 1700 provided in a cavity inside the armrest rod 132, 133. The mounting seat 1700 includes a housing 1710. A baffle 1711 is provided on an inner wall of the housing 1710 to divide the housing 1710 into a first

accommodation space 1701 and a second accommodation space 1702. The sliding portion 543 of the sliding member 540 is disposed in the first accommodation space 1701 and is slidably disposed on baffle 1711. Referring to FIG. 30, a first limiting portion 1712 and a second limiting portion 1713 may be provided on both ends of the baffle 1711 for limiting sliding limits of the sliding portion 543.

5 The distance between the first limiting portion 1712 and the second limiting portion 1713 in the front-rear direction of the carrier frame 100 may be the same as the distance that the seat assembly 200 moves in the front-rear direction of the carrier frame 100 between the first position and the second position. The linkage gear 531, the one or more driven gears 532, and the output gear 533 may be disposed in the second accommodation space 1702, at least one of which engages the connecting
10 portion 542 of the sliding member 540. The inner wall of the baffle 1711 may be provided with one or more protrusions (as shown in FIG. 31) in the second accommodation space 1702 for mounting the linkage gear 531, the one or more driven gears 532, and the output gear 533.

[0219] As shown in FIGS. 30-32, the mounting seat 1700 may also include a cover 1720, which may be mounted to the housing 1710 and, together with the housing 1710, define the second
15 accommodation space 1702. The linkage gear 531, the one or more driven gears 532, and the output gear 533 may be disposed between the cover 1720 and the housing 1710. One end of the connecting portion 542 of the sliding member 540 is provided with teeth 541 and passes over the upper end of the cover 1720 to extend outside the cover 1720. The outer side of the cover 1720 may be provided with an opening 1722 (see FIG. 31), through which the linkage gear 531, the one or more driven gears
20 532, or the output gears 533 may engage the connecting portion 542 of the sliding member 540.

[0220] Specifically, as shown in FIG. 31, a step 1721 may be provided on the outer side of the cover 1720. The end of the connecting portion 542 of the sliding member 540 provided with teeth 541 may extend to the step 1721. The opening may be provided on the step 1721. Teeth of the linkage gear 531, the one or more driven gears 532, or the output gears 533 may pass through the opening to
25 engage the teeth 541 of the sliding member 540.

[0221] In some embodiments, referring to FIG. 25, the lateral frame 101, 102 (e.g., the armrest rod 132, 133) is provided with a second sliding groove 1304 extending in the front-rear direction P, Q of the carrier frame 100. An end of the adjustable harness 430 may pass through the second sliding groove 1304 to be fixedly connected to the sliding member 540 disposed in the cavity inside the
30 lateral frame 101, 102, and the end of the adjustable harness 430 may slide in the second sliding groove 1304. When the sliding member 540 slides in the front-rear direction of the carrier frame 100, the end of the adjustable harness 430 may be driven to move in the front-rear direction of the carrier frame 100 in the second sliding groove 1304. A length of the second sliding groove 1304 in the front-rear direction of the carrier frame 100 may be the same as a distance that the seat assembly 200 moves
35 in the front-rear direction of the carrier frame 100 between the first position and the second position. It will be appreciated that, in other embodiments, the length of the second sliding groove 1304 in the front-rear direction of the carrier frame 100 may also be different from the distance that the seat

assembly 200 moves in the front-rear direction of the carrier frame 100 between the first position and the second position, without being limited thereto.

[0222] In some embodiments, referring to FIG. 31, the sliding member 540 may be provided with a socket or a through-hole 544 for attachment to the end of the adjustable harness 430.

5 **[0223]** In the second embodiment provided in the third aspect of the present disclosure, when the user rotates the handle frame 120 to switch between the first usage state and the second usage state, the pivot shaft 630 rotates with the handle frame 120 and drives the driving wheel 560 to rotate. The driving wheel 560 in rotation drives the linkage gear 531 to rotate via the traction member 550, so as to drive the sliding member 540 to slide via the one or more driven gears 532 and the output gears
10 533, finally driving the end of the adjustable harness 430 and the middle-upper section of the backrest tube 450 to move in the front-rear direction of the carrier frame 100. As a result, the middle-upper section of the backrest tube 450 and the bottom section of the backrest tube 450 can move synchronously to prevent the change in angle between the backrest assembly 400 and the seat assembly 200.

15 **[0224]** Referring to FIGS. 33 and 34, in the third embodiment, the difference from the first and second embodiments is that the linkage mechanism 500 includes a guiding member 580 and a connecting member 590. The guiding member 580 is attached to the carrier frame 100, for example, the lateral frame 101, 102, for example, the armrest rod 132, 133 of the lateral frame 101, 102. An end of the adjustable harness 430 passes over the guiding member 580 to be connected to the
20 connecting member 590. The connecting member 590 is further connected to the seat assembly 200 and is capable of moving with the seat assembly 200 in the front-rear direction P, Q of the carrier frame 100 to drive the backrest tube 450 to move synchronously with the seat assembly 200 via the adjustable harness 430.

[0225] The guiding member 580 may serve to support the end of the adjustable harness 430 so that
25 the backrest tube 450 can be supported on a middle section of the adjustable harness 430. When the seat assembly 200 moves in the front-rear direction P, Q of the carrier frame 100, the end of the adjustable harness 430 is driven to move by the connecting member 590, so that the length of the section of the adjustable harness 430 between guiding member 580 and the backrest tube 450 is changed, which causes movement of the middle-upper section of the backrest tube 450 in the front-
30 rear direction P, Q of the carrier frame 100. Specifically, when the seat assembly 200 moves frontward in the direction P, the length of the section of the adjustable harness 430 between the guiding member 580 and the backrest tube 450 becomes shorter, which causes the middle-upper section of the backrest tube 450 to move frontward. When the seat assembly 200 is moved rearward in the direction Q, the length of the section of the adjustable harness 430 between the guiding member 580 and the backrest
35 tube 450 become longer, which causes the middle-upper section of the backrest tube 450 to move rearward.

[0226] The guiding member 580 is positioned such that the middle-upper section of the backrest

tube 450 can be supported on the adjustable harness 430 after the end of the adjustable harness 430 passes over it. For example, the guiding member 580 is typically positioned above the bottom section of the backrest tube 450, for example, attached to the lateral frame 101, 102, for example, attached to the armrest rod 132, 133 of the lateral frame 101, 102. The guiding member 580 may, for example, be a smooth cylindrical rod such that the section of the adjustable harness 430 passing over the guiding member 580 may slide over the guiding member 580. The guiding member 580 may, for example, be a roller to facilitate the sliding of the adjustable harness 430 over the guiding member 580. the guiding member 580 may also, for example, be a roller to facilitate the sliding of the adjustable harness 430 over the guiding member 580. It will be appreciated that the guiding member 580 is not limited to this, and other configurations may be used as long as it can support the section of the adjustable harness 430 passing over it and allow the section of the adjustable harness 430 passing over it to slide over it. The number of the guiding member 580 may be one or more, depending on the actual need. In some embodiments, the connecting member 590 may be a separate connecting member, such as a cable, which is connected to each of the seat assembly 200 (e.g., the movable frame 220 or the seat frame 230) and the end of the adjustable harness 430. In some embodiments, the connecting member 590 is a part of the adjustable harness 430. In some embodiments, the connecting member 590 may be integrated with the adjustable harness 430, in other words, the end of the adjustable harness 430 may be directly connected to the seat assembly 200 after passing over the guiding member 580. It will be appreciated that the connecting member 590 is not limited to this, and other configurations may be used, as long as the above functions can be realized.

[0227] In the third embodiment of the third aspect of the present disclosure, when the seat assembly 200 moves in the front-rear direction of the carrier frame 100, the seat assembly 200 drives the end of the adjustable harness 430 to move via the connecting member 590, causing a change in the length of the section of the adjustable harness 430 between the guiding member 580 and the backrest tube 450, and in turn causing the movement of the middle-upper section of the backrest tube 450 in the front-rear direction of the carrier frame 100. As a result, the middle-upper section of the backrest tube 450 can move in synchronization with the bottom section of the backrest tube 450, preventing the change in angle between the backrest assembly 400 and the seat assembly 200.

[0228] Fourth aspect

[0229] FIGS. 35 and 36 illustrate perspective views of a carrier 1000 provided in the fourth aspect of the present disclosure. The carrier 1000 is provided with an armrest installation unit 300. The carrier 1000 will be described below together with the armrest installation unit 300.

[0230] In the embodiment shown in FIG. 35, the carrier 1000 is illustrated exemplarily as a child carrier such as a child stroller. It will be appreciated that in some alternative embodiments, the type of carrier 1000 is not limited to a child stroller, which may be, for example, a child dining chair, a child high chair, a child tricycle, and the like.

[0231] Referring to FIG. 35, the child carrier 1000 includes a carrier frame 100 and a seat assembly

200. The carrier frame 100 may include a handle frame 120, an armrest frame 130, a front leg frame 160, a rear leg frame 160, etc. The carrier frame 100 has a generally left-right symmetrical structure. The carrier frame 100 also includes two seat tubes 110 disposed left-right symmetrically for mounting the seat assembly 200. The seat assembly 200 includes a seat frame 230 mounted between the two
5 seat tubes 110. In some embodiments, the seat frame 230 may be covered with a soft cushion to provide a comfortable seat for the child. The armrest frame 130 includes two armrest rods 132, 133 disposed left-right symmetrically and above the seat assembly 200 to limit the range of motion of the child in the left-right direction. The armrest frame 130 also includes an armrest body 131 disposed transversely and above the seat assembly 200. The left and right ends of the armrest body 131 are
10 detachably connected to the armrest rods 132 and 133, respectively, via the armrest installation unit 300 provided in the fourth aspect of the present disclosure. Referring to FIG. 35, when the armrest body 131 is connected between the two armrest rods 132 and 133, the armrest body 131 may limit the range of motion of the child in the frontward direction. Referring to FIG. 36, the armrest body 131 detached from the armrest rod 132, 133 will not limit the motion of the child in the frontward
15 direction, which facilitates the child's riding on the seat assembly 200 from outside the child carrier and the child's riding off from the seat assembly 200.

[0232] In some alternative embodiments, only one end of the armrest body 131 may be detachably connected to the corresponding armrest rod 132, 133 via the armrest installation unit 300 provided in the fourth aspect of the present disclosure, and the other end of the armrest body 131 may be
20 detachably connected or non-detachably connected (e.g., pivotally connected) to the corresponding armrest rod 132, 133 by other suitable structures. For example, in some alternative embodiments, the other end of the armrest body 131 is pivotally connected to the corresponding armrest rod 132, 133 via a pivot shaft that is, for example, perpendicular to or inclined to a horizontal plane. When one end of the armrest body 131 is detached from the corresponding armrest rod 132, 133, the other end of
25 the armrest body 131 can swing about the pivot shaft in the left-right direction, thereby releasing the restraint on the child riding on the seat assembly 200, and the child can easily exit the seat assembly 200.

[0233] Referring to FIGS. 35-38, the armrest installation unit 300 provided in the fourth aspect of the present disclosure includes a first connection seat 310, a first magnetic element 330, a second
30 connection seat 320, and a second magnetic element 348. The first connection seat 310 is connected to the armrest rod 132, 133 while the second connection seat 320 is connected to the armrest body 131. It should be understood that in some alternative embodiments, the first connection seat 310 may be connected to the armrest body 131 while the second connection seat 320 is connected to the while rod 132, 133. The first connection seat 310 is provided with an engaged member 327. The first
35 magnetic element 330 is mounted to the first connection seat 310. The second connection seat 320 is provided with an engaging member 341. The second magnetic element 348 is mounted to the second connection seat 320.

[0234] When it is required to mount the armrest body 131 to the armrest rod 132, 133, the first connection seat 310 and the second connection seat 320 are detachably connected to each other via both the detachable snap-fit of the engaging member 341 with the engaged member 327 and the magnetic adsorption between the first magnetic element 330 and the second magnetic element 348.

5 When it is required to remove the armrest body 131 from the armrest rod 132, 133, the first connection seat 310 and the second connection seat 320 can be separated by releasing the snap-fit of the engaging member 341 with the engaged member 327. The armrest installation unit 300 provided in the fourth aspect of the present disclosure has a simple structure and provides the double insurance for the connection of the first connection seat 310 and the second connection seat 320 by the snap-fit of the
10 engaging member 341 with the engaged member 327 and the magnetic adsorption between the first magnetic element 330 and the second magnetic element 348.

[0235] In some embodiments, the first magnetic element 330 and the second magnetic element 348 may both employ permanent magnets. Alternatively, one of the first magnetic element 330 and the second magnetic element 348 may employ the permanent magnet, and the other one may be made of
15 a magnetic material capable of being adsorbed by the permanent magnet.

[0236] FIGS. 39 and 40 illustrate exploded views of an exemplary embodiment of the first connection seat 310. In some embodiments, the first connection seat 310 includes a connection body 3101 and an installation seat 370. The connection body 3101 is connected to the armrest rod 132, 133. More specifically, the connection body 3101 may, for example, be mounted to or integrated with the
20 armrest rod 132, 133. The installation seat 370 is mounted to the connection body 3101 by a fastening mechanism 376. The engaged member 327 is provided on the installation seat 370 and includes at least one engagement groove 312 to detachably engage with the engaging member 341. The engaging member 341 has, for example, at least one engagement portion 34111 (as described in detail below in connection to FIGS. 41 and 42) protruded toward the engagement groove 312 to detachably engage
25 with the engagement groove 312. By providing the engagement groove 312 on the installation seat 370, and mounting the installation seat 370 to the connection body 3101 via the fastening mechanism 376, the same connection body 3101 can be mounted with different installation seats 370 to be connected to different second connection seats 320 and thus matched with different models of the armrest body 131, which effectively improves the universality of the first connection seat 310. In
30 some embodiments, the installation seat 370 may be detachably mounted to an outer surface of the connection body 3101 via the fastening mechanism 376, allowing the installation seat 370 to be conveniently mounted to the connection body 3101. In some embodiments, the installation seat 370 may, for example, be integrated with the connection body 3101.

[0237] FIGS. 39 and 40 illustrates an exemplary embodiment of the fastening mechanism 376. The
35 outer surface 3102 of the connection body 3101 defines an engagement hole 3106 and an installation hole 3107. The installation seat 370 is provided with an elastic arm 3761 and a connection hole 377 at opposite ends thereof. The elastic arm 3761 is used to snap into the engagement hole 3106. The

fastening member (e.g., screw) 3762 passes through the connection hole 377 to be connected to installation hole 3107. The fastening mechanism 376 includes the elastic arm 3761 and the fastening member 3762. It should be understood that the implementation of the fastening mechanism 376 is not limited to the above examples, for example, in some alternative embodiments, the fastening mechanism 376 may include at least two fastening members (e.g., screws) by which the installation seat 370 is mounted non-rotatably to the connection body 3101.

[0238] Referring to FIG. 39, in some embodiments, the outer surface 3102 of the connection body 3101 defines a positioning groove 3103. The installation seat 370 is mounted non-rotatably into the positioning groove 3103. The positioning groove 3103 is, for example, a non-circular groove, and the portion of the installation seat 370 disposed within the positioning groove 3103 has, for example, a shape matching with the shape of the positioning groove 3103. In some embodiments, the positioning groove 3103 is, for example, a U-shaped groove, having a limiting bottom 3104 and a mouth 3109 opposite to the limiting bottom 3104. The engagement hole 3106 is proximate to the limiting bottom 3104, and the installation hole 3107 is proximate to the mouth 3109. A first end of the installation seat 370 abuts against the limiting bottom 3104, and the elastic arm 3761 extends outwardly from the first end of the installation seat 370 to snap into the engagement hole 3106. A second end of the installation seat 370 is proximate to the mouth 3109 and defines the connection hole 377. The engagement groove 312 is located at the center of the installation seat 370. In some unshown embodiments, the installation seat 370 may be mounted to the connection body 3101, for example, by an unshown pivot shaft, which is formed, for example, by a bolt and may act as a fastening mechanism to mount the installation seat 370 to the connection body 3101, such that the installation seat 370 can rotate relative to the connection body 3101. It will be appreciated that that pivot shaft should be provided in such a way that it does not affect the snap-fit of the engagement groove 312 with the engaging member 341 and does not affect the provision of the first magnetic element 330 and the magnetic adsorption between the first magnetic element 330 and the second magnetic element 348.

[0239] Referring to FIGS. 39 and 40, in some embodiments, the connection body 3101 may be provided with a concave platform 3108 at a position corresponding to the installation hole 3107, and the installation seat 370 may be provided with a convex platform 378 at a position corresponding to the connection hole 377. While fitting the convex platform 378 into the concave platform 3108, the connection hole 377 and the installation hole 3107 are aligned with each other, so as to facilitate the installation of the fastening member 3762. It should be understood that in some alternative embodiments, the positions of the concave platform 3108 and the convex platform 378 on the connection body 3101 and the installation seat 370 are interchangeable.

[0240] Referring to FIG. 39, in some embodiments, the engaged member 327 includes, for example, a projecting portion 371. The engagement groove 312 is defined on the projecting portion 371. Referring to FIG. 37, the engaging member 341 includes, for example, at least one elastic arm 3411

disposed inside the second connection seat 320, each having the engagement portion 34111 as described above. The projecting portion 371 of the engaged member 327 is adapted to extend into the second connection seat 320, so that the engagement groove 312 enters into the second connection seat 320 to be in snap-fit with the engagement portion 34111 of the elastic arm 3411 to connect the first connection seat 310 to the second connection seat 320. At this point, the first magnetic element 330 and the second magnetic element 348 are in proximity to each other to arrive the desired magnetic adsorption position.

[0241] Referring to FIGS. 38-40, an exemplary embodiment of installation of the first magnetic element 330 is also shown. Specifically, the installation seat 370 has an accommodation cavity 3710 with an opening facing the connection body 3101 and capable of being covered by the connection body 3101. The bottom of the accommodation cavity 3710 extends into the projecting portion 371. The first magnetic element 330 is mounted to the bottom of the accommodation cavity 3710 through the opening of the accommodation cavity 3710 to allow the first magnetic element 330 to be as close as possible to the second magnetic element 348 in the second connection seat 320. The first magnetic element 330 disposed within the accommodation cavity 3710 cannot fall off from the accommodation cavity 3710 due to the blocking of the connection body 3101.

[0242] Referring to FIGS. 38 to 40, in some embodiments, the connection body 3101 may also be provided with a positioning post 3105 on the outer surface 3102 thereof, for example, on the groove wall of the positioning groove 3103. The positioning post 3105 protruded into the accommodation cavity 3710 through the opening of the accommodation cavity 3710. The cooperation of the positioning post 3105 with the accommodation cavity 3710 can improve the mechanical properties of the installation seat 370. In some embodiments, the positioning post 3105 may abut against the first magnetic element 330 to avoid the first magnetic element 330 from wobbling in the accommodation cavity 3710.

[0243] It should be understood that the implementations of the first magnetic element 330 are not limited to the above examples. For example, in some alternative embodiments, the first magnetic element 330 may be integrated with the installation seat 370 by the overmolding process. In yet other alternative embodiments, at least a portion of the installation seat 370 (e.g., the projecting portion 371) may be made of a magnetic material and serve as the first magnetic element 330.

[0244] FIGS. 41 and 42 illustrate exploded views of an exemplary embodiment of the second connection seat 320. In some embodiments, the second connection seat 320 has an accommodation space 323 and an insertion hole 3222 in communication with the accommodation space 323. The second magnetic element 348 and the engaging member 341 are mounted within the accommodation space 323. The insertion hole 3222 is used for the engaging member 327 to be inserted into or withdrawn from the accommodation space 323 therethrough. As above-described, the engaging member 341 includes, for example, at least one elastic arm 3411 disposed in the accommodation space 323. The first connection seat 310 and the second connection seat 320 are detachably connected

to each other and the first magnetic element 330 and the second magnetic element 348 are in a desired magnetic adsorption position via the detachable snap fit of the engagement portion 34111 of the elastic arm 3411 of the engaging member 341 with the engagement groove 312 of the engaging member 327 entering into the accommodation space 323. Referring to FIG. 41, the engaging member
5 327 moves in the insertion and withdrawn direction T relative to the insertion hole 3222 such that the engaging member 327 enters the accommodation space 323 or leaves the accommodation space 323 through the insertion hole 3222.

[0245] FIGS. 41 and 42 illustrate an exemplary embodiment of installation of the second magnetic element 348 and engaging member 341 into the accommodation space 323. The second connection
10 seat 320 has an installation hole 3231 in communication with the accommodation space 323. The installation hole 3231 and the insertion hole 3222 are located on different surfaces of the second connection seat 320, e.g., the installation hole 3231 and the insertion hole 3222 are located on two substantially perpendicular or intersecting surfaces of the second connection seat 320. The second magnetic element 348 and the engaging member 341 are mounted on the support seat 349. The
15 support seat 349 is inserted into the accommodation space 323 via the installation hole 3231 and secured to the second connection seat 320 via the fastening member 3492. The fastening member 3492 is, for example, a screw, which passes through the hole 3229 in the second connection seat 320 to be connected to the hole 3498 in the support seat 349. It should be understood that in other embodiments, the second magnetic element 348 and the engaging member 341 may be mounted to
20 the second connection seat 320 by other suitable structures.

[0246] FIGS. 41 and 42 illustrate an exemplary embodiment of the second magnetic element 348. Specifically, the support seat 349 is provided with a convex platform 3495 projecting toward the insertion hole 3222. The convex platform 3495 is formed with an accommodation cavity 34950. Referring to FIG. 38, the accommodation cavity 34950 has a bottom 34951 and an opening 34952,
25 with the bottom 34951 being closer to the insertion hole 3222 than the opening 34952. The second magnetic element 348 is housed at the bottom 34951 of the accommodation cavity 34950 to allow the second magnetic element 348 to be as close as possible to the first magnetic element 330. The opening 34952 of the accommodation cavity 34950 may be limited by the second connection seat 320 to avoid the second magnetic element 348 being accidentally removed from the accommodation
30 cavity 34950. It should be understood that the implementation of the second magnetic element 348 is not limited to the above examples. In some alternative embodiments, the second magnetic element 348 may be integrated with the support seat 349 by the overmolding process, or at least a portion of the support seat 349 (e.g., the convex platform 3495) may be made of a magnetic material and serve as the second magnetic element 348.

[0247] FIGS. 41 and 42 illustrate an exemplary embodiment of the engaging member 341. The engaging member 341 may include two elastic arms 3411, with the first ends of the two elastic arms 3411 being connected to each other, for example, via a fixing portion 3412. The fixing portion is fixed
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to the support seat 349. In some alternative embodiments, the first ends of the two elastic arms 3411 are separated from each other and fixed to the support seat 349 separately. The second ends of the two elastic arms 3411 are opposite to each other. The two elastic arms 3411 are used to embrace the engagement groove 312.

5 **[0248]** It will be appreciated that in the process of the insertion of the engaged member 327 into the accommodation space 323 through the insertion hole 3222, when the engaged member 327 presses against the two elastic arms 3411, the two elastic arms 3411 may elastically deform and move away from each other, allowing the engaged member 327 to continue to move in the accommodation space 323. When the engagement portions 34111 of the two elastic arms 3411 are opposite to the
10 engagement groove 312, the two elastic arms 3411 automatically restore and snap into the engagement groove 312 via the engagement portions 34111. When it is required to release the snap-fit of the engaging member 341 with the engaged member 327, a force is applied to the two elastic arms 3411 to make them to move away from each other, so that the engagement portion 34111 can be removed from the engagement groove 312, and the engaged member 327 can be withdrawn from
15 the insertion hole 3222.

[0249] Referring to FIGS. 41 and 42, the fixing portion 3412 is connected to the support seat 349, e.g., via a mounting post 3497. In some embodiments, the fixing portion 3412, for example, has a hole 34120, and the mounting post 3497 is provided on the support seat 349 and extends through the hole 34120. The support seat 349 may also be provided with a spacer member 3491. The spacer
20 member 3491 is proximate to the first ends of the two elastic arms 3411 and spaced apart from the mounting post 3497. When the engaged member 327 is not inside the accommodation space 323, the two elastic arms 3411 may engage the spacer member 3491 disposed therebetween, so as to limit the position of the engaging member 341, avoiding the engaging member 341 from rotating around the mounting post 3497 and not being able to engage the engagement groove 312.

25 **[0250]** Referring again to FIG. 39, in some embodiments, the engagement groove 312 may include an annular groove defined on an outer peripheral wall of the projecting portion 371. Referring to FIG. 42, the engaging member 341 includes two substantially curved elastic arms 3411. The two elastic arms 3411 are disposed opposite to each other to form a space 340 that used to house the projecting portion 371. When the engaging member 341 engage the engagement groove 312, the two elastic
30 arms 3411 embrace the engagement groove 312. Referring to FIGS. 41 and 42, each elastic arm 3411 has an engagement portion 34111 projecting toward the space 340. The engagement portion 34111 is, for example, a curved tab. The engagement portion 34111 is adapted to be inserted into the engagement groove 312 to achieve the snap-fit with the engagement groove 312, thereby restricting the withdrawing of the engaged member 327 from the insertion hole 3222.

35 **[0251]** It should be understood that the implementation of engaging member 341 and engagement groove 312 is not limited to the above examples. For example, in some alternative embodiments, the engagement groove 312 may include at least one recess formed on an outer peripheral wall of the

projecting portion 371. The engaging member 341 may include at least one elastic arm 3411 with the engagement portion 34111 thereon being an engagement hook adapted to be inserted into the corresponding recess. The number and structure of the elastic arm 3411, and the engagement groove 312 may be determined as desired.

5 [0252] Referring again to FIG. 36, the first connection seat 310 has a first abutment surface 38 that is provided on at least one of the connection body 3101 and the installation seat 370. The second connection seat 320 has a second abutment surface 3220. When the first connection seat 310 is connected to the second connection seat 320, the first abutment surface 38 abuts against the second abutment surface 3220. The projecting portion 371 protrudes relative to the first abutment surface 38.

10 The insertion hole 3222 is defined by the second abutment surface 3220.

[0253] In the embodiment as shown in FIG. 36, both the first abutment surface 38 and the second abutment surface 3220 are vertical surface (e.g., perpendicular to the horizontal plane). The insertion-withdrawal direction T of the engaged member 327 is, for example, parallel to the horizontal plane. The second connection seats 320 at both ends of the armrest body 131 is located between the first connection seats 310 at the left and right armrest rods 132, 133. To facilitate the engagement of the first connection seat 310 and the second connection seat 320, the second connection seat 320 is pivotally connected to the armrest body 131 via a pivot shaft 325 with an axial direction perpendicular to the insertion-withdrawal direction T.

[0254] The manner in which the first connection seat 310 and the second connection seat 320 are assembled and disassembled is described below in conjunction with FIG. 36.

[0255] When it is required to install the armrest body 131 to the armrest rods 132, 133, the second connection seats 320 at both ends of the armrest body 131 are first rotated in a direction close to each other, and then both ends of the armrest body 131 are moved between the left and right armrest rods 132, 133. When the insertion hole 3222 is aligned with the projecting portion 371, the second connection seats 320 at both ends of the armrest body 200 are rotated in a direction away from each other, and the projecting portion 371 with the engagement groove 312 is inserted into the insertion hole 3222 to allow the elastic arm 3411 of the engaging member 341 to snap into the engagement groove 312 on the projecting portion 371.

[0256] When it is required to separate the armrest body 131 from the armrest rods 132, 133, the snap-fit between the engagement groove 312 and the elastic arm 3411 is released, and the second connection seats 320 are rotated about the pivot shaft 325 to withdraw the projecting portion 371 from the insertion hole 3222, so that the armrest body 131 can be removed.

[0257] Referring to FIGS. 38, 39, and 41, in order to prevent the up-down rotation of the armrest body 131 relative to the armrest rods 132, 133, in some embodiments, the installation seat 370 is provided with a rotation-limiting platform 372 protruding relative to the first abutment surface 38. The rotation-limiting platform 372 and the insertion hole 3222 can be fitted by any non-circular shape such that the rotation-limiting platform 372 is non-rotatably fitted into the insertion hole 3222 and

thus non-rotatably engage the second connection seat 320. For example, in some embodiments, the insertion hole 3222 is a U-shaped hole, and the rotation-limiting platform 372 correspondingly has a U-shaped outer contour. In some alternative embodiments, the insertion hole 3222 may be a flat or polygonal hole, and the shape of the rotation-limiting platform 372 is matched with the shape of the insertion hole 3222. Referring to FIG. 39, in some embodiments, the projecting portion 371 protrudes from an end surface of the rotation-limiting platform 372 and is located within an area defined by the end surface of the rotation-limiting platform 372, and the projecting portion 371 protrudes into the accommodation space 323 with a smaller structure, which facilitates the miniaturization of the structure of the engaging member 341.

[0258] In some embodiments, the second connection seat 320 may also be mounted with a releasing member 342 and an elastic restoring member 345 to release the snap-fit between the engaging member 341 and the engagement groove 312. More specifically, the releasing member 342 is operably connected to the engaging member 341 to drive the elastic arm 3411 to disengage from the engagement groove 312. The elastic restoring member 345 is used to restore the releasing member 342 to its initial position.

[0259] Referring to FIGS. 41 and 42, an exemplary embodiment of the releasing member 342 is illustrated. In some embodiments, the second connection seat 320 is provided with an installation hole 3232 opposite to the installation hole 3231. The releasing member 341 includes an operating portion 3423, a shoulder portion 3429, and at least one pushing portion 3421. When the releasing member 341 is mounted within the accommodation space 323 through the installation hole 3231, the operating portion 3423 extends out from the installation hole 3232 and is in sliding fit with the installation hole 3232. The shoulder portion 3429 abuts the inner wall of the second connection seat 320 to prevent the releasing member 341 from falling out of the installation hole 3232. The number of the pushing portions 3421 is equal to the number of the elastic arms 3411. Each of the elastic arms 3411 is provided with an abutment portion 3413. Each of the pushing portions 3421 abuts against the corresponding one of the abutment portions 3413. In some embodiments, the pushing portion 3421 has a pushing ramp 3421a. The abutment portion 3413 is a pillar extends from the elastic arm 3411. The pushing ramp 3421a of the pushing portion 3421 abuts against the abutment portion 3413. When a pushing force is applied to the releasing member 342, the releasing member 342 moves so that the pushing ramp 3421a pushes the elastic arm 3411 to move away from the engagement groove 312, thereby releasing the snap-fit between the engagement portion 34111 and the engagement groove 312. It should be understood that in other embodiments, the pushing portion 3421 and abutment portion 3413 can be implemented in other manners than the above described. For example, in some alternative embodiments, the abutment portion 3413 may be provided with a ramp, and the pushing portion 3421 may be a bump abutting against the ramp of the abutment portion 3413.

[0260] Referring to FIG. 43, in some embodiments, at least one guiding surface 3496 corresponding to at least one abutment portion 3413 may also be provided within the accommodation space 323.

The guiding surface 3496 may be a side surface of the convex platform 3495. Each pushing portion 3421 is sandwiched between the convex platform 3495 and the corresponding abutment portion 3413. Each pushing portion 3421 has a sliding surface 3421c in sliding fit with the corresponding guiding surface 3496. The guiding surface 3496 and the sliding surface 3421c are, for example, parallel to the movement direction of the releasing member 342. The pushing portion 3421 is supported by the guiding surface 3496 when the pushing portion 3421 pushes the abutment portion 3413, thereby preventing the elastic deformation of the pushing portion 3421 which causes the failure in pushing the abutment portion 3413 normally to release the snap-fit between the engagement portion 34111 and the engagement groove 312 when the pushing portion 3421 abuts against the abutment portion 3413.

[0261] FIGS. 41 and 42 illustrate an exemplary embodiment of the elastic restoring member 345. In some embodiments, the elastic restoring member 345 is, for example, a spring. The elastic restoring member 345 is mounted between the releasing member 342 and the support seat 349. Referring to FIG. 41, in some embodiments, the support seat 349 may be provided with a limiting piece 3493. A positioning post 3494 is provided on the limiting piece 3493. One end of the elastic restoring member 345 abuts against the limiting piece 3493 and is sleeved outside the positioning post 3494. The other end of the elastic restoring member 345 extends to an inner wall of a cavity defined in the releasing member 342. When the pressing force applied to the releasing member 342 is withdrawn, the elastic restoring member 345 restores the releasing member 342 to its initial position, and thus restores the engaging member 341 to its initial position. In some embodiments, the limiting piece 3493 may be provided between the second ends of the two elastic arms 3411 to fully utilize the space between the second ends of the two elastic arms 3411, which contributes to the compactness of the structure of the support seat 349.

[0262] Fifth aspect

[0263] As shown in FIGS. 44 and 45, a fifth aspect of the present disclosure provides a carrier which may be a stroller, a wheelchair, a child's dining chair, a high chair, and the like. The carrier in this embodiment is described with stroller as an example. The carrier includes a sliding carrier frame 100, a seat assembly 200, and a height adjustment mechanism 800 which is simple in structure and easy to operate.

[0264] Specifically, as shown in FIGS. 44 and 45, the carrier frame 100 includes at least a handle frame 120, a front leg frame 160, a rear leg frame 170, a front wheel assembly 181, and a rear wheel assembly 182. The front leg frame 160 includes a first front leg support rod 161 and a second front leg support rod 162 located on the left and right sides of the carrier frame 100. A footrest plate 190 (also known as a foot support plate) is connected between the first front leg support rod 161 and the second front leg support rod 162. The rear leg frame 170 includes a first rear leg support rod 171 and a second rear leg support rod 172 on the left and right sides of the carrier frame 100. The first front leg support rod 161 and the second front leg support rod 162 are each connected with a front wheel

assembly 181 at their bottom ends. The first rear leg support rod 171 and the second rear leg support rod 172 are each connected with a rear wheel assembly 182 at their bottom ends.

5 [0265] Specifically, as shown in FIGS. 44 and 45, the front leg support rods 161, 162 are of an elongated structure. The top ends of the front leg support rods 161, 162 are pivotally connected to the rear leg support rods 171, 172 on the corresponding sides of the carrier frame 100, and the bottom ends of the front leg support rod 161, 162 are connected to the front wheel assemblies 181. The footrest plate 190 is disposed between the two front leg support rods 161 and 162.

[0266] The height adjustment mechanism 800 includes a front leg support assembly 810 and a locking assembly 830. The footrest plate 190 is disposed between two front leg support assemblies 10 810 and is adjustable in height relative to the two front leg support assemblies 810. The locking assembly 830 is provided between the front leg support assembly 810 and the footrest plate 190 for locking or unlocking the height adjustment of the footrest plate 190 relative to the front leg support assembly 810.

[0267] As shown in FIGS. 44 and 45, each of the front leg support assembly 810 includes a front 15 leg support rod 161 or 162 and a guiding member 811. The locking assembly 830 is disposed between each of the two front leg support rods 161 and 162 and the footrest plate 190 for unidirectional locking or bidirectional locking the footrest plate 190 in the height direction. In the illustrated embodiment, the guiding member 811 is an elongated structure with a length smaller than that of the front leg support rods 161, 162. The guiding member 811 is secured to one of two opposite inner sides the front leg support rods 161, 162, i.e., the side of one of the front leg support rods 161, 162 facing the 20 other one of the front leg support rods 161, 162. The extending direction of the guiding member 811 is substantially the same as the extending direction of the front leg support rods 161, 162. At least one of the front side and the rear side of the guiding member 811 is provided with a guiding groove 8111 which extends in the same direction as the extending direction of the guiding member 811. In this 25 embodiment, each of the front side and the rear side of the guiding member 811 is provided with the guiding groove 8111.

[0268] In this embodiment, as shown in FIGS. 45 to 46, the footrest plate 190 is a one-piece structure, including a footrest body 191 and a clamping member 192. The footrest body 191 has a substantially elongated plate structure. There are two clamping members 192 connected to two ends of the footrest 30 body 191, respectively, and disposed at an angle to the footrest body 191. In this embodiment, the angle between each of the two clamping members 192 and the footrest body 191 is 90 degrees. Each of the clamping members 192 includes a connecting portion 1921 and two fitting portions 1922 (FIG. 47) connected to two opposite sides of the connecting portion 1921, respectively. Each of the two ends of the footrest body 191 is connected to the connecting portion 1921 of the clamping member 192 at the corresponding side of the footrest body 191. The two fitting portions 1922 of the clamping 35 member 192 are inserted into the guiding grooves 8111 opposite thereto and are capable of sliding along the guiding grooves 8111 to move the footrest plate 190 to in the height direction.

[0269] Specifically, as shown in FIGS. 45 and 46, the locking assembly 830 is disposed between the front leg support assembly 810 and the footrest plate 190. The locking assembly 830 can be switched between a locking state and an unlocking state. When the locking assembly 830 is in the locking state, the footrest plate 190 can be fixed at a height relative to the front leg support assembly 810 and can be operated to move in the first direction D1. When the locking assembly 830 is in the unlocking state, the footrest plate 190 can be operated to move in the first direction D1 or the second direction D2. The first direction D1 and the second direction D2 are opposite to each other and are parallel to the height direction. In this embodiment, the first direction D1 is the upward direction along the guiding groove 8111, and the second direction D2 is the downward direction along the guiding groove 8111. It should be understood in other embodiments, inversely, the first direction D1 is the downward direction along the guiding groove 8111, and the second direction D2 is the upward direction along the guiding groove 8111.

[0270] Specifically, as shown in FIGS. 45 and 46, the locking assembly 830 includes an operating member 831, two locking members 832, two linkage members 833, a first restoring member 834, two second restoring members 835, a plurality of first locking grooves 836, a plurality of second locking grooves 837, and a plurality of third locking grooves 838. The operating member 831 is operably disposed on a substantially central portion of footrest plate 190. The first restoring member 834 is disposed between the operating member 831 and the footrest plate 190. The two linkage members 833 are connected to two opposite sides of the operating member 831, respectively. The two locking members 832 are connected to sides of the two linkage members 833 away from the operating member 831, respectively. The two second restoring members 835 are disposed between the two locking members 832 and the footrest plate 190, respectively. The plurality of first locking grooves 836 and the plurality of second locking grooves 837 are disposed on the two guiding members 811.

[0271] The structure of the height adjustment mechanism 800 is described in detail below with the connection relationships of the left front leg support assembly 810 with the footrest plate 190, and the locking assembly 830 as an example. The connection relationships of the right front leg support assembly 810 with the footrest plate 190, and the locking assembly 830 are similar.

[0272] Further, as shown in FIG. 46, a plurality of first locking grooves 836 arranged in the height direction are provided on the inner side of the guiding member 811, i.e., the side of the guiding member 811 facing another guiding member 811. The first locking grooves 836 are all unidirectional locking grooves for limiting the movement of the footrest plate 190 in the second direction D2. Specifically, each of the first locking grooves 836 has a depth gradually reduced to zero along the first direction D1. Specifically, each of the first locking grooves 836 has a top wall which is a first inclined abutment surface 8361 gradually inclined toward another guiding member 811 on the opposite side of the carrier along the first direction D1. Each of the first locking grooves 836 has a bottom wall which is a limiting wall 8362 substantially perpendicular to the guiding member 811, i.e., substantially parallel to the horizontal plane, for limiting the movement of the footrest plate 190 in

the second direction D2.

[0273] At least one second locking groove 837 is provided on the inner side of the guiding member 811, i.e., the side of the guiding member 811 facing another guiding member 811. The second locking groove 837 is a bidirectional locking groove for limiting the movement of the footrest plate 190 in both the first direction D1 and the second direction D2. The second locking groove 837 has a first limiting wall 8371 and a second limiting wall 8372 opposite to each other in the height direction. The at least one second locking groove 837 is located in the first direction D1 of the plurality of first locking grooves 836. In this embodiment, each guiding member 811 is provided with two first locking grooves 836 and one second locking groove 837 on the inner side thereof. The second locking groove 837 is located above the two first locking grooves 836 to limit the movement distance of the footrest plate 190 in the first direction, i.e., in the upward direction. That is, the second locking groove 837 is used to limit the excessive upward travel of the footrest plate 190. It should be understood that in other embodiments, the number of the first locking groove 836 and the second locking groove 837 can be adjusted as desired. It is also possible to provide only a plurality of the first locking grooves 836 without the second locking groove 837.

[0274] As shown in FIGS. 45 and 48, a third locking groove 838 is further provided on the inner side of the guiding member 811, i.e., the side of the guiding member 811 facing another guiding member 811. The third locking groove 838 is located in the second direction of the plurality of first locking grooves 836, i.e., located below the plurality of first locking grooves 836. The third locking groove 838 has a second inclined abutment surface 8381 gradually inclined toward another guiding member 811 on the opposite side of the carrier along the first direction or the second direction. The third locking groove 838 further has a mounting port 8382 opposite to the second inclined abutment surface 8381. At least a part of the locking member 832 protrudes out from the footrest plate 190 when the member 832 is in the locking state (as shown in FIG. 46). When mounting the footrest plate 190 to the front leg support assembly 810, the locking member 832 is inserted into the third locking groove 838 through the mounting port 8382, which facilitates the mounting of the footrest plate 190 to the front leg support assembly 810.

[0275] Furthermore, as shown in FIGS. 45 and 48, the height adjustment mechanism 800 may further include a limiting member 850. The limiting member 850 has a substantially elongated tubular structure. The two ends of the limiting member 850 are fixed to the inner sides of the two front leg support rods 161 and 162, respectively. The limiting member 850 is positioned in the second direction of the third locking groove 838, i.e., below the third locking groove 838. When the locking member 832 is inserted into the third locking groove 838, the limiting member 850 abuts against the footrest plate 190 to limit the movement of the footrest plate 190 in the second direction.

[0276] In this embodiment, as shown in FIGS. 45 and 48, the front leg support rod 161 or 162 includes a support rod body 163 and a wheel-seat connecting portion 164. The two ends of the limiting member 850 are fixed to the wheel-seat connecting portions 164 of the two front leg support rods,

respectively. During the assembly of the carrier, at least parts of the locking members 832 are protruded out from the two ends of the footrest plate 190 and inserted into the third locking grooves 838 through the mounting port 8382 to mount the footrest plate 190 between the two support rod bodies 163. Subsequently, the wheel-seat connecting portions 164, each connected with the limiting member 850, are respectively mounted at the lower ends of the two support rod bodies 163, positioning the limiting member 850 below the third locking groove 838. In this way, when the locking members 832 are inserted into the third locking grooves 838, the limiting member 850 can abut against the footrest plate 190 to limit the movement of the footrest plate 190 in the second direction.

10 [0277] Further, as shown in FIGS. 46 and 47, the footrest plate 190 has a hollow inner cavity 193 in which the locking member 832 and the linkage member 833 can be movably disposed. The locking member 832 is of a substantially pin structure. The linkage member 833 is of a substantially rod structure and has a first end 8331 and a second end 8332. One end of the locking member 832 is capable of protruding out from the hollow inner cavity 193 to be inserted into the first locking groove 15 836 or the second locking groove 837. The other end of the locking member 832 is fixedly connected to the second end 9332 of the linkage member 833. The first end 8331 of the linkage member 833 is connected to the operating member 831. The operating member 831 is operably disposed on the footrest plate 190. At least a part of the operating member 831 protrudes into the hollow inner cavity 193 to be connected to the linkage member 833, and another part of the operating member 831 protrudes outside the hollow inner cavity 193 to be operated.

[0278] Specifically, as shown in FIGS. 46 and 47, the locking member 832 is switchable between a locking position and an unlocking position. When the locking member 832 is in the locking position, the locking member 832 can be inserted into any one of the plurality of first locking grooves 836 and the at least one second locking groove 837. When the locking member 832 is in the unlocking position, 25 the locking member 832 can be disengaged from the plurality of first locking grooves 836 and the at least one second locking groove 837.

[0279] Further, as shown in FIGS. 46 and 47, the operating member 831 can be operated to drive the locking member 832 to move from the locking position to the unlocking position via the linkage member 833. The operating member 831 defines two driving grooves 8311. Specifically, each of the driving grooves 8311 extends in a direction intersecting with both the movement direction of the operating member 831 and the movement direction of the locking member 832. The first end 8331 of the linkage member 833 is inserted into the driving groove 8311 and is moveable along the driving groove 8311. In this embodiment, the first end 8331 of the linkage member 833 may be provided with a driving pin (not shown). The driving pin is inserted into the driving groove 8311 to move along the driving groove 8311. As shown in FIG. 46, the driving groove 8311 located on the left side of the operating member 831 is inclined toward the left guiding member 811 along the direction of D3 (i.e., 35 the direction in which the operating member 831 can be pressed). An end of the driving groove 8311

close to the guiding member 811 on the same side of the carrier is a first groove end 83111, and an end of the driving groove 8311 away from the guiding member 811 on the same side of the carrier is the second groove end 83112. When the operating member 831 is pressed in the direction D3, the first end 8331 of the linkage member 833 (or the driving pin at the first end 8331) is moved from the first groove end 83111 to the second groove end 83112 of the driving groove 8311, thereby driving the linkage member 833 together with the locking member 832 to move away from the guiding member 811 on the same side of the carrier and causing the locking member 832 to switch from the locking position to the unlocking position.

[0280] Further, as shown in FIG. 46, the first restoring member 834 is disposed between the operating member 831 and the footrest plate 190. The first restoring member 834 is used to bias the operating member 831 to cause the operating member 831 to move in a direction such that the locking member 832 is driven toward the locking position. In this embodiment, the first restoring member 834 is a spring, and the first restoring member 834 is used to provide a resilient force for restoring the position of the operating member 831. Specifically, a first mounting post 194 is provided in the hollow inner cavity 193 of the footrest plate 190. The operating member 831 defines a mounting cavity 8312 in communication with the hollow inner cavity 193. A second mounting post 8313 opposite to the first mounting post 194 is provided in the mounting cavity 8312. The first mounting post 194 is located in the direction D3 of the second mounting post 8313. Two ends of the first restoring member 834 are sleeved outside the first mounting post 194 and the second mounting post 8313, respectively, to prevent the displacement of the first restoring member 834.

[0281] Further, as shown in FIGS. 46 and 47, the second restoring member 835 is provided between the locking member 832 and the footrest plate 190. The second restoring member 835 is used to bias the locking member 832 to drive the locking member 832 to move toward the locking position. In this embodiment, the second restoring member 835 is a spring. The second restoring member 835 is used to provide a resilient force for the locking member 832 to restore the locking member 832 to the locking position. Specifically, the portion of the hollow inner cavity 190 of the footrest plate 190 in which the locking member 832 is mounted is provided with a first convex platform 195. A second convex platform 8321 opposite to the first convex platform 195 is annularly provided outside the locking member 832. The second convex platform 8321 is located at a side of the first convex platform 195 close to the guiding member 811. The second restoring member 835 is sleeved outside the locking member 832, and the two ends of the second restoring member 835 abut against the first convex platform 195 and the second convex platform 8321, respectively, to prevent the displacement of the second restoring member 835.

[0282] In the above embodiment, the height adjustment process of the footrest plate 190 is as follows.

[0283] As shown in FIGS. 46 and 47, it is assumed that the footrest plate 190 is at the height position as shown in FIG. 46, i.e., the locking member 832 on the footrest plate 190 is inserted into the highest

first locking groove 836. To raise the height of the footrest plate 190, the user can directly push the footrest plate 190 in the first direction D1, so that the locking member 832 on the footrest plate 190 is moved in a direction gradually away from the guiding member 811 on the same side of the carrier (i.e., in the direction D4 as shown in FIG. 46, taken the locking member 832 on the left side of the carrier as an example) under the action of the first inclined abutment surface 8361 of the first locking groove 836 (alternatively, the second inclined abutment surface 8381 of the third locking groove 838, if the locking member 832 on the footrest plate 190 is inserted into the third locking groove 838 at this time), and the second restoring member 835 is gradually compressed. When the locking member 832 is moved to the uppermost end of the first inclined abutment surface 8361, i.e., when the locking member 832 is moved out from the first locking groove 836, the locking member 832 is in the unlocking position. At this time, as the user continuously pushes the footrest plate 190 in the first direction D1, the locking member 832 is maintained in the unlocking position due to the abutment with the inner side of the guiding member 811. When the locking member 832 is moved with the footrest plate 190 to be opposite to the second locking groove 837, the locking member 832 is inserted into the second locking groove 837 and restored to the locking position under the action of the second restoring member 835. In this way, the footrest plate 190 is fixed at a higher height position. It should be understood that since the second locking groove 837 is a bidirectional locking groove, the footrest plate 190 in this height position, even if the user continues to push the footrest plate 190 in the first direction D1, cannot be moved further in the first direction D1 due to the limitation from the first limiting wall 371. However, if the locking member 832 is inserted into any one of the first locking grooves 836 at this time, the footrest plate 190 can still be moved in the first direction D1 by pushing it in the first direction D1. In addition, in the above process, as the locking member 832 is moved from the locking position to the unlocking position along the first inclined abutment surface 8361, the linkage member 833 fixed connected to the locking member 832 is also moved in the direction D4 (taking the linkage member 833 on the left side of the carrier as an example, as shown in FIG. 46), so that the operating member 831 is driven to move in the direction D3 via the second end 8332 (or the locking pin at the second end 8332) and the first restoring member 834 is compressed.

[0284] As shown in FIGS. 46 and 47, it is assumed that the footrest plate 190 is at the height position as shown in FIG. 46, i.e., the locking member 832 on the footrest plate 190 is inserted into the highest first locking groove 836. To lower the height of the footrest plate 190, the user can press the operating member 831 in the first direction D3, so that the first end 8331 (or the locking pin at the first end 8331) of the linkage member 833 is moved along the driving groove 8311 from the first groove end 83111 to the second groove end 83112, causing the linkage member 833 to move in the D4 direction (taking the linkage member 833 on the left side of the carrier as an example, as shown in FIG. 46), and thus causing the locking member 832 to move in the D4 direction (taking the locking member 832 on the left side of the carrier as an example, as shown in FIG. 46), i.e., causing the locking member 832 to move in a direction away from the guiding member 811 on the same side of the carrier.

When the locking member 832 is moved from the locking position to the unlocking position, i.e., when the locking member 832 is disengaged from the highest first locking groove 836, the user can pull the footrest plate 190 in the second direction D2 to move the footrest plate 190 downwardly. When the footrest plate 190 is moved to be opposite to any one of the other first locking grooves 836, the user can release the operating member 831, so that the operating member 831 is restored to its initial position under the action of the first restoring member 834, the linkage member 833 is moved in a direction opposite to the direction D4 (taking the linkage member 833 on the left side of the carrier as an example, as shown in FIG. 46), and the locking member 832 is driven by the linkage member 833 and the elastic force of the second restoring member 835 to be restored from the unlocking position to the locking position and inserted into any one of the other first locking grooves 836. In this way, the footrest plate 190 is fixed at a lower height position.

[0285] As shown in FIGS. 49 to 51, the fifth aspect of the present disclosure further provides another embodiment of the height adjustment mechanism 800, which includes a front leg support assembly 810, a footrest plate 190, a locking assembly 830, and a clamping member 860. The structures of the front leg support assembly 810 and the locking assembly 830 are the same as those of the first embodiment of the fifth aspect. The difference of this embodiment from the first embodiment of the fifth aspect is in that the footrest plate 190 and the clamping member 860 are two separate components, whereas in the first embodiment, the footrest plate 190 includes a footrest body 191 and a clamping member 192 integrated with each other.

[0286] As shown in FIGS. 50 and 51, there are two clamping members 860 connected to two ends of the footrest plate 190, respectively. The clamping member 860 and the footrest plate 190 will be described in detail below with the structure on one side of the footrest plate 190 as an example.

[0287] The clamping member 860 includes a clamping body 861 and a connecting portion 862 connected to each other and form an angle therebetween. At least a part of the clamping body 861 is inserted into the guiding groove 8111 and capable of sliding along the guiding groove 8111. Specifically, the clamping body 861 is provided with two opposite fitting portions 8612 at a side thereof facing away from the connecting portion 862. The clamping member 860 can be snap-fitted into the guiding groove 8111 on the guiding member 811 via the two fitting portions 8612 and can slide along the guiding groove 8111. The clamping body 861 is provided with a through-hole 8611. The footrest plate 190 is provided with a notch 196 at each end thereof. When the locking member 832 is in the locking position, the locking member 832 protrudes out from the hollow inner cavity 193 through the notch 196. The connecting portion 862 can be inserted into the notch 196 to connect the clamping member 860 to the footrest plate 190. In addition, when the locking member 832 is in the locking position, the locking member 832 protrudes out from the hollow inner cavity 193 through the notch 196 and passes through the through-hole 8611 to be inserted into any one of the first locking grooves 836 or the second locking groove 837.

[0288] It should be understood that in other embodiments not shown, the guiding member 811 may

be omitted. The guiding groove 8111 may be provided directly on the front leg support rod 161, 162. The clamping member 860 may be directly snap-fitted into the guiding groove 8111 of the front leg support rod 161, 162 via the two fitting portions 8612.

[0289] In this embodiment, the clamping member 860 is telescopically connected or movably connected to the footrest plate 190. As shown in FIGS. 49 and 51, as the connecting portion 862 has a certain length in the horizontal direction, when two connecting portions 862 are inserted into the notches 196 at two ends of the footrest plate 190, the footrest plate 190 is able to move toward or away from the front leg support assembly 810 or the clamping body 861 at either side of the carrier, i.e., the footrest plate 190 can move within a certain range in the horizontal direction. As such, the width of the footrest area (herein, the footrest area refers to a sum of the horizontal dimension of the footrest plate 190 and the horizontal dimension of the connecting portion 862 exposed outside the footrest plate 190) can be adjusted by adjusting the depth that the connecting portion 862 inserted into the footrest plate 190. In this way, on one hand, the problem of unsmooth adjustment of the height of the footrest plate 190 due to the different widths of the two guiding members 811 resulted from the machining tolerances of the two front leg assemblies 810 can be resolved. On the other hand, in the case where the front leg support assembly 810 is inclined, i.e., the front leg support rod 161, 162 or the guiding member 811 is inclined, and the upper angle α between the front leg support rod 161, 162 and the footrest plate 190 is less than 90 degrees, the problem of the footrest plate 190 sliding poorly due to the varied spacing between the two front leg support rods 161 and 162 of the carrier from the bottom to the top thereof can be solved.

[0290] The above-described height adjustment mechanism 800 and the carrier including the same have at least the following beneficial effects.

[0291] In the above-described height adjustment mechanism 800 for the carrier, the locking assembly 830 is provided between the front leg support assembly 810 and the footrest plate 190. When the locking assembly 830 is in the locking state, the footrest plate 190 can be fixed at a height position with respect to the front leg support assembly 810, and the footrest plate 190 can also be operated to move in the first direction D1 parallel to the height direction. When the locking assembly 830 is in the unlocking state, the footrest plate 190 can be operated to move in the first direction D1 or in the second direction D2 opposite to the first direction D1. That is, the locking assembly 830 can lock the footrest plate 190 in the height direction unidirectionally, so that the locking assembly 830 needs to be unlocked only when the footrest plate 190 is to be moved in the second direction D2, and does not need to be unlocked when the footrest plate 190 is to be moved in the first direction D1. The height adjustment mechanism 800 has a simple structure and is easy to operate.

[0292] For the height adjustment mechanism 800 provided in another embodiment of the present disclosure, in case where there are processing tolerances in the two front leg support assemblies 810 or where the two front leg support rods 161, 162 are inclined, not only the height of the footrest plate 190, but also the width of the footrest plate 190 can be adjusted via the clamping member 860, so as

to adapt to children of different ages, or to solve the problem of unsmooth adjustment of the footrest plate 190.

5 **[0293]** The technical features of the above embodiments in various aspects of the present disclosure may be combined arbitrarily. For the sake of concise description, not all possible combinations of the technical features in the above embodiments in various aspects of the present disclosure are described. However, as long as there is no contradiction in the combinations of these technical features, these combinations should be considered to be within the range described in this specification.

10 **[0294]** The above embodiments are just some implementations of the present disclosure, and the descriptions are relatively specific and detailed, but they should not be construed as limiting the scope of the present disclosure. It should be noted that, for those skilled in the art, various modifications and improvements may be made without departing from the concepts of the present disclosure, and these modifications and improvements are all within the protection scope of the present disclosure. Therefore, the protection scope of the present disclosure should be subject to the appended claims.

Claims

1. A carrier, characterized by comprising:
a backrest assembly;
a carrier frame switchable between a folded state and expanded state;
5 a seat assembly movably disposed on the carrier frame; and
a connecting rod assembly comprising:
a first connecting rod having a first movement section and a first pivot section, the first movement section being movably connected to the seat assembly, and the first pivot section being pivotally connected to the carrier frame; and
10 a second connecting rod having a second movement section and a second pivot section, the second movement section being movably connected to the first connecting rod, and the second pivot section being pivotally connected to the backrest assembly;
wherein the carrier frame drives the backrest assembly to fold toward the seat assembly via the connecting rod assembly when the carrier frame switches from the expanded state to the
15 folded state.
2. The carrier according to claim 1, characterized in that the carrier frame comprises a seat tube extending in a front-rear direction of the carrier;
the seat assembly comprises a movable frame slidably disposed on the seat tube;
20 the movable frame has a connecting portion provided with a guiding groove;
the first movement section is inserted into the guiding groove and movable along the guiding groove.
3. The carrier according to claim 2, characterized in that,
25 the guiding groove comprises a first groove section and a second groove section in communication with each other, the first groove section extends in a movement direction of the movable frame, and the second groove section extends in a direction intersecting with the extending direction of the first groove section; and/or
the guiding groove has a first end and a second end, the first movement section is located
30 at the first end when the carrier frame is in the expanded state, and the first movement section is located at the second end when the carrier frame is in the folded state.
4. The carrier according to claim 2, characterized in that the carrier frame comprises a handle frame pivotally connected to the seat tube, the handle frame is operable to rotate relative
35 to the seat tube so that a travel direction of the carrier is switched between a first travel direction and a second travel direction, during the switching of the travel direction of the carrier from the first travel direction to the second travel direction, the handle frame drives the movable frame to

move in the first travel direction along the seat tube, and/or the handle frame drives the first connecting rod to move in the second travel direction.

5 5. The carrier according to claim 4, characterized in that the movable frame has an engagement portion, when the carrier frame is in the expanded state, the engagement portion engages the second movement section, and when the handle frame is operated to switch the travel direction of the carrier, the engagement portion disengages from the second movement section.

10 6. The carrier according to claim 1, characterized in that the first connecting rod has a driving groove between the first movement section and the first pivot section, and the second movement section is inserted into the driving groove and slidable along the driving groove.

15 7. The carrier according to claim 2, characterized in that the backrest assembly includes a first backrest frame, a second backrest frame, and a backrest tube; a first end of the first backrest frame is pivotally connected to the second pivot section of the second connecting rod; a second end of the first backrest frame is pivotally connected to a first end of the second backrest frame; a second end of the second backrest frame is pivotally connected to a first end of the backrest tube; and a second end of the backrest tube, a section of the second connecting rod between the second movement section and the second pivot section, and the movable frame are pivotally connected by a first connecting shaft.
20

8. The carrier according to claim 7, characterized in that the second connecting rod comprises a first rod part and a second rod part connected to each other and form an angle therebetween; the second movement section is located at an end of the first rod part away from the second rod part; the second pivot section is located on the second rod part, and the first connecting shaft is located at a
25 junction of the first rod part and the second rod part.

9. The carrier according to claim 8, characterized in that the backrest assembly further comprises a connecting harness and a harness regulator; each of lateral sides of the carrier frame is provided with the connecting rod assembly; one end of the connecting harness is connected to an end of the
30 second rod part away from the first rod part at one of the lateral sides of the carrier frame; the other end of the connecting harness passes across a side of the backrest tube facing away from the seat assembly to be connected to an end of the second rod part away from the first rod part at the other one of the lateral sides of the carrier frame; and the harness regulator is disposed on the connecting harness to adjust the length of the connecting harness.

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10. The carrier according to claim 1, characterized by comprising an armrest installation unit comprising:

a first connection seat provided with an engaged member;
a first magnetic element disposed at the first connection seat;
a second connection seat provided with an engaging member; and
a second magnetic element disposed at the second connection seat;

5 where the first connection seat and the second connection seat are detachably connected to each other via both the detachable snap-fit of the engaging member with the engaged member and the magnetic adsorption between the first magnetic element and the second magnetic element.

10 11. The carrier according to claim 10, characterized in that,
the second connection seat has a first accommodation space and an insertion hole in communication with the first accommodation space;
the engaging member comprises at least one elastic arm disposed in the first accommodation space;
15 the engaged member is adapted to enter or exit the first accommodation space through the insertion hole, and is provided with at least one engagement groove adapted to be in snap-fit with the at least one elastic arm.

12. The carrier according to claim 11, characterized in that the second connection seat is
20 further mounted with a releasing member and an elastic restoring member, the releasing member is operably coupled to the at least one elastic arm to push the at least one elastic arm to disengage from the at least one engagement groove, and the elastic restoring member is adapted to restore the releasing member.

25 13. The carrier according to claim 1, characterized by comprising a height adjustment mechanism comprising:
a front leg support assembly,
a footrest plate slidable in a height direction along the front leg support assembly; and
a locking assembly provided between the front leg support assembly and the footrest plate,
30 wherein the locking assembly is switchable between a locking state and an unlocking state; when the locking assembly is in the locking state, the footrest plate is capable of being fixed at a height position relative to the front leg support assembly, and/or the footrest plate is capable of being operated to move in a first direction; when the locking assembly is in the unlocking state, the footrest plate is capable of being operated to move in the first direction or in a second direction;
35 wherein the first direction or the second direction are opposite to each other and parallel to the height direction.

14. The carrier according to claim 13, characterized in that the locking assembly comprises:
a first locking groove provided on the front leg support assembly and having a first inclined abutment surface gradually inclined toward the footrest plate along the first direction, and/or a second locking groove provided on the front leg support assembly and having a first limiting wall and a second limiting wall opposite to each other in the height direction; and
a locking member movably disposed at an end of the footrest plate and switchable between a locking position and an unlocking position, when the locking member is in the locking position, the locking member is protruded out from the end of the footrest plate and inserted into the first locking groove or the second locking groove, and when the locking member is in the unlocking position, the locking member is removed from the first locking groove or the second locking groove.

15. The carrier according to claim 13, characterized in that the front leg support assembly is provided with a guiding groove extending in the movement direction of the footrest plate;
the footrest plate comprises a footrest body used to support the feet of the user and a clamping member integrated with the footrest body, at a least part of the clamping member is inserted into the guiding groove and slidable along the guiding groove; and/or
the height adjustment mechanism further comprises a clamping member disposed between the front leg support assembly and the footrest plate; the clamping member is telescopically connected or movably connected to the footrest plate; the clamping member comprises a clamping body and a connecting portion connected to each other and form an angle therebetween; at a least part of the clamping body is inserted into the guiding groove and slidable along the guiding groove; the end of the footrest plate is provided with a notch; and the connecting portion is inserted into the notch.

16. A carrier, characterized by comprising:
a foldable carrier frame;
a limiting block disposed on the carrier frame and provided with a telescoping portion;
a movable frame disposed on the carrier frame; and
a backrest frame disposed on the carrier frame and having a movement end;
wherein when the carrier frame switches from an expanded state to a folded state, the backrest frame rotates in a first direction toward the movable frame, the telescoping portion abuts against the movement end to apply a force in the second direction opposite to the first direction.

17. The carrier according to claim 16, characterized in that the limiting block further comprises a limiting body secured to the carrier frame;
the telescoping portion comprises a sliding block in sliding fit with the limiting body and adapted to abut against the movement end, and an elastic restoring member sandwiched between the limiting body and the sliding block.

18. The carrier according to claim 17, characterized in that the limiting body has a guiding groove; the telescoping portion is mounted in the guiding groove; the sliding block is capable of elastically telescoping with respect to a groove mouth of the guiding groove under the action of
5 the elastic restoring member.

19. The carrier according to claim 18, characterized in that a prolonged support portion extending outwardly is provided at a lower portion of the groove mouth of the guiding groove, and/or a limiting projection is provided at an upper portion of or above the groove mouth of the
10 guiding groove.

20. The carrier according to claim 18, characterized in that a limiting mechanism is provided between the sliding block and the limiting body to limit the sliding travel of the sliding block; the limiting mechanism comprises a limiting hole provided on one of a groove wall of the
15 guiding groove and the sliding block, and a limiting protrusion provided on the other one of the groove wall of the guiding groove and the sliding block; and the limiting protrusion is in sliding fit with the limiting hole.

21. The carrier according to claim 16, characterized in that the limiting block further
20 comprises a limiting body secured to the carrier frame, and the telescoping portion is mounted to the limiting body and is elastically deformable.

22. The carrier according to claim 16, characterized in that the movable frame is movably disposed on the carrier frame, when the carrier frame is in the expanded state, the movement end
25 is sandwiched between the limiting block and the movable frame, and during the switching of the carrier frame to the folded state, the movable frame moves away from the limiting block to allow the backrest frame to rotate.

23. A carrier, characterized by comprising:
30 a carrier frame,
a seat assembly mounted to the carrier frame and movable in a front-rear direction of the carrier frame relative to the carrier frame between a first position and a second position;
a backrest assembly comprising a harness and a backrest tube supported on the harness, a bottom section of the backrest tube being pivotally connected to the seat assembly;
35 a handle frame pivotally connected to the carrier frame, when the handle frame pivots relative to the carrier frame, the handle frame drives the seat assembly to move in the front-rear direction of the carrier frame relative to the carrier frame; and

a linkage mechanism is disposed at a side of the seat assembly, and connected to an end of the harness to enable the end of the harness to move synchronously with the seat assembly in the front-rear direction of the carrier frame.

5 24. The carrier according to claim 23, characterized in that the linkage mechanism comprises a linkage rod; a first end of the linkage rod is connected to the seat assembly, and a second end of the linkage rod is connected to the end of the harness; when the seat assembly moves in the front-rear direction of the carrier frame, the seat assembly drives the end of the harness to move in the front-rear direction of the carrier frame via the linkage rod.

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25. The carrier according to claim 23, characterized in that the carrier frame comprises a lateral frame and a seat tube mounted to the lateral frame;

the seat assembly comprises a moveable frame mounted on the seat tube, when the handle frame pivots relative to the carrier frame, the handle frame drives the moveable frame to move in the front-rear direction of the carrier frame relative to the seat tube;

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the linkage rod is disposed between the moveable frame and the lateral frame; the moveable frame is provided with a recessed portion on a side thereof facing the linkage rod; the first end of the linkage rod is received in the recessed portion; the second end of the linkage rod is movably connected to the lateral frame along the front-rear direction of the carrier frame; when the moveable frame moves in the front-rear direction of the carrier frame relative to the seat tube, the moveable frame drives the end of the harness to move in the front-rear direction of the carrier frame via the linkage rod.

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26. The carrier according to claim 25, characterized in that the moveable frame is provided with a second protrusion on a side thereof facing away from the linkage rod, the linkage mechanism further comprises a resilient member, one end of the resilient member is looped around a periphery of the second protrusion, and the other end of the resilient member is hooked to a side of the linkage rod away from the movable frame.

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27. The carrier according to claim 23, characterized in that the linkage mechanism comprises a transmission assembly and a sliding member, and the sliding member is slidably mounted to the carrier frame in the front-rear direction of the carrier frame and connected to the end of the harness;

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the transmission assembly is connected to each of the handle frame and the sliding member, and converts the rotation of the handle frame to the movement of the sliding member in the front-rear direction of the carrier frame, thereby driving the end of the harness to move synchronously with the seat assembly in the front-rear direction of the carrier frame.

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28. The carrier according to claim 27, characterized in that the transmission assembly comprises

a linkage gear; the sliding portion is provided with teeth thereon; the handle frame is fixedly connected to a pivot shaft inserted through the carrier frame; the pivot shaft is connected to the linkage gear to drive the linkage gear to rotate; the linkage gear engages the teeth of the sliding portion such that the linkage gear in rotation drives the sliding portion to move in the front-rear direction of the carrier frame.

29. The carrier according to claim 23, characterized in that the linkage mechanism comprises a guiding member and a connecting member; the guiding member is attached to the carrier frame; the end of the harness passes around the guiding member to be connected to the connecting member; the connecting member is further connected to the seat assembly and is capable of moving with the seat assembly in the front-rear direction of the carrier frame to drive the backrest tube to move synchronously with the seat assembly via the harness; and the connecting member is a separate member or is integrated with the harness.