Claims

1. A gangway, comprising a first side wall (1000), a side wall unlocking mechanism (2000), and a locking lever mechanism (3000), wherein the first side wall (1000) is used in the gangway to cover a corrugated bellow assembly in the gangway and overhaul the gangway; the side wall unlocking mechanism (2000) is connected to the first side wall (1000) and used to install and remove the first side wall (1000) in the gangway; and the locking lever mechanism (3000) is located at an end part of an outer side of the gangway and used to realize connection between the gangway and an external coupling assembly or coupling mechanism;

characterized in that

the side wall unlocking mechanism (2000) further comprises:

a connection plate (2100), an unlocking mechanism (2200), and a handle assembly (2300);

the handle assembly (2300) is mounted on a second side of the connection plate (2100); and

the handle assembly (2300) unlocks the unlocking mechanism (2200);

further characterized in that

the unlocking mechanism (2200) includes an end part that penetrates through the connection plate (2100) and is exposed from the second side of the connection plate (2100), and at the same time, the unlocking mechanism (2200) penetrates through the rotating shaft sleeve assembly (1600) on the first side wall (1000);

the end part of the unlocking mechanism (2200) resists against and contacts the handle assembly (2300) mounted on the second side of the connection plate (2100); and

the unlocking mechanism (2200) is fixed on the connection plate (2100) through a fastening screw located on the outer side of the connection plate (2100).

2. The gangway according to claim 1, wherein the first side wall (1000) comprises a first side wall assembly (1100), a second side wall assembly (1200), a rotating shaft assembly (1300), an oscillating mechanism (1400), an anti-wear assembly (1500), and a rotating shaft sleeve

assembly (1600); the first side wall assembly (1100) is connected with the vehicle body in a swayable and/or rotatable manner through the rotating shaft assembly (1300); the second side wall assembly (1200) is detachably connected with the vehicle body through the rotating shaft sleeve assembly (1600); the first side wall assembly (1100) is located outside the second side wall assembly (1200); and an inner surface of the first side wall assembly (1100) and an outer surface of the second side wall assembly (1200) are approximately parallel to each other and have a constant spatial clearance.

3. The gangway according to claim 2, wherein the anti-wear assembly (1500) and the oscillating mechanism (1400) are respectively mounted on the first side wall assembly (1100) and the second side wall assembly (1200); the anti-wear assembly (1500) is located between the inner surface of the first side wall assembly (1100) and the outer surface of the second side wall assembly (1200); the oscillating mechanism (1400) is located on the inner surfaces of the first side wall assembly (1100) and the second side wall assembly (1200); the first side wall assembly (1100) and the second side wall assembly (1200) extend and retract and/or swing through structures combined with the anti-wear assembly (1500) and the oscillating mechanism (1400); one end of the rotating shaft assembly (1300) is mounted on the first side wall assembly (1100), and the other end is mounted on the vehicle body; and one end of the rotating shaft sleeve assembly (1600) is mounted on the second side wall assembly (1200), and the other end is mounted on a couple frame of the gangway.

4. The gangway according to claim 3, wherein the oscillating mechanism (1400) comprises a pull rod seat assembly (1410), a guide rod assembly (1420), a screw group (1430), a pore plate (1440), a first bracket assembly (1450) and a bracket (1460); the pull rod seat assembly (1410) and the guide rod assembly (1420) are connected into a whole through the screw group (1430); the first bracket assembly (1450) is mounted on the guide rod assembly (1420); the bracket (1460) and the pore plate (1440) are respectively mounted on two sides of the first bracket assembly (1450), and are tightly connected with side wall panels through screws; the first bracket assembly (1450) is connected with the bracket (1460) and the pore plate (1440) in a swayable manner; and the first bracket assembly (1450) is movably connected with the guide rod

assembly (1420).

5. The gangway according to claim 4, wherein the guide rod assembly (1420) comprises a stop piece (1421) and a guide rod (1422); one end of the stop piece (1421) is used to weld or adhere the guide rod (1422); the other end of the stop piece (1421) is in planar fit with the pull rod seat assembly (1410) and is connected with the pull rod seat assembly (1410) through the screw group (1430) to form a whole; the first bracket assembly (1450) is mounted on the guide rod (1422); and the guide rod (1422) is of a double-sided opened guide slot structure.

6.The gangway according to claim 4, wherein the first bracket assembly (1450) comprises a casting (1451), a sliding bearing (1452), a pipe (1453) and a guide screw (1454); the sliding bearing (1452) is sleeved in the pipe (1453); the pipe (1453) penetrates through the casting (1451); the guide screw (1454) is mounted on the pipe (1453); and the pipe (1453) has a first straight section (14531), a second straight section (14532), a shoulder part (14533), a notch (14534) and a threaded hole (14535).

7. The gangway according to claim 2, wherein the rotating shaft assembly (1300) comprises a rotating shaft fixing part (1310), a rotating shaft swing part (1320) and a rotating shaft part (1330); the rotating shaft fixing part (1310) and the rotating shaft swing part (1320) are connected into a whole through the rotating shaft part (1330); the rotating shaft fixing part (1310) is fixedly connected to the side wall panel; the rotating shaft swing part (1320) is connected with an external vehicle body; and the rotating shaft fixing part (1310) and the rotating shaft swing part (1320) rotate and/or swing through the rotating shaft part (1330).

8. The gangway according to claim 7, wherein the rotating shaft swing part (1320) comprises a rotating shaft plate pin shaft assembly (1321), a rotating shaft base plate (1322), a lining (1323), a rotating shaft plate assembly (1324) and a screw washer group (1325); the rotating shaft plate pin shaft assembly (1321) is welded with a pin shaft stud; the rotating shaft plate pin shaft assembly (1321) is inserted into a mounting hole of the rotating shaft base plate (1322) through the pin shaft stud, the lining (1323) is located outside the rotating shaft base plate (1322) and used to be sleeved on the pin shaft stud of the rotating shaft plate pin shaft assembly (1321); the

rotating shaft plate assembly (1324) is sleeved on an outer side of the lining (1323); the screw washer group (1325) is used to stop the rotating shaft plate assembly (1324) to move in a central axial direction of the pin shaft stud on the rotating shaft plate pin shaft assembly (1321); and the screw washer group (1325) is in threaded fastening with the pin shaft stud on the rotating shaft plate pin shaft assembly (1321).

9. The gangway according to claim 8, wherein a waist-type hole of the rotating shaft plate assembly (1324) is set to have an included angle δ with a horizontal center axis of the rotating shaft plate assembly (1324), and the included angle δ is 10-18°; and a distance between a circle center of a circle in the waist-type hole of the rotating shaft plate assembly (1324) close to an outer end and an edge part is C, C=3-5 times of the radius of the circle of the outer end of the waist-type hole.

10. The gangway according to claim 8, wherein an included angle γ between the center of the waist-type hole in the rotating shaft plate assembly (1324) and a vertical center of the screw washer group (1325) is 60-80°; an included angle α between the center of the waist-type hole in the rotating shaft plate assembly (1324) and the vertical center of the screw washer group (1325) is 60-80°; and an included angle β between the center of the waist-type hole in the rotating shaft plate assembly (1324) and the vertical center of the screw washer group (1325) is 90-120°.

11. The gangway according to claim 2, wherein the anti-wear assembly (1500) comprises an anti-wear component (1510) located on the inner surface of the first side wall assembly (1100) and a wear-resistant component (1520) located on the outer surface of the second side wall assembly (1200); the anti-wear component (1510) is made of a soft material; the wear-resistant component (1520) is made of a steel material; the wear-resistant component (1520) is wrapped on the outer surface of the second side wall assembly (1200); the anti-wear component (1510) is fixed on the inner surface of the first side wall assembly (1100) through a screw; and the wear-resistant component (1520) is fixed on the outer surface of the second side wall assembly (1200) through a rivet.

12. The gangway according to claim 2, wherein the rotating shaft sleeve assembly (1600)

comprises a fixed seat (1610), a rotating shaft sleeve pin shaft (1620), a lockup block (1630) and a positioning pin (1640); the fixed seat (1610) of the rotating shaft sleeve assembly (1600) is mounted on the second side wall assembly (1200); the fixed seat (1610) and the rotating shaft sleeve pin shaft (1620) are integrated into one piece; the rotating shaft sleeve pin shaft (1620) of the rotating shaft sleeve assembly (1600) is inserted into the lockup block (1630) fixedly mounted on the side wall unlocking mechanism (2000) through a fastener; the rotating shaft sleeve pin shaft (1620) and the lockup block (1630) have positioning holes having centers on the same axis and penetrate through each other; and part of the rotating shaft sleeve pin shaft (1620) of the rotating shaft sleeve assembly (1600) and the lockup block (1630) are threaded into the positioning holes through the positioning pin (1640) for connection and positioning.

13. The gangway according to claim 1, wherein the handle assembly (2300) comprises a handle (2301), a longitudinal cushion block (2302) and a transverse cushion block (2303); the longitudinal cushion block (2302) and the transverse cushion block (2303) are respectively fixed on the second side of the connection plate (2100); the longitudinal cushion block (2302) is located on one side of the handle (2301); and the transverse cushion block (2303) is located below the handle (2301) and used to limit a rotation position of the handle (2301).

14. The gangway according to claim 1, wherein the unlocking mechanism (2200) comprises a first positioning pin assembly (2210), a second positioning pin assembly (2220), a seat body (2230), an elastic piece (2240), and a rod part (2250); the first positioning pin assembly (2210) and the seat body (2230) are mounted into a whole; the unlocking mechanism (2200) tightly connects the seat body (2230) with the lockup block (1630) in the rotating shaft sleeve assembly (1600) on the first side wall (1000) through a mounting screw (2280) penetrating through the seat body (2230); the first positioning pin assembly (2210) is mounted, by a first fastener (2260), at a first end of the rod part (2250) having a double-head thread; the second positioning pin assembly (2220) and the rod part (2250) are mounted into a whole; the elastic piece (2240) is located at a bottom of the second positioning pin assembly (2220) and is spatially spaced from the second positioning pin assembly (2220); and the elastic piece (2240) is limited by a second fastener (2270) and mounted at a second end of the rod part (2250) having the double-head

thread.

15. The gangway according to claim 1, wherein the locking lever mechanism (3000) is used to connect and lock the vehicle body in a rail transit vehicle, and comprises a lock bar (3100), a locking lever (3200), a locking lever pin shaft (3300) and a corner connection assembly (3400); the lock bar (3100) and the locking lever (3200) are both connected with the corner connection assembly (3400) through the locking lever pin shaft (3300); the corner connection assembly (3400) is of a multi-section drive piece structure; and a center axis of the lock bar (3100) and a center axis of the locking lever (3200) are always approximately perpendicular.

16. The gangway according to claim 15, wherein the corner connection assembly (3400) comprises a first end (3401), a second end (3402), a roller (3403) and a connection rod (3404); the connection rod (3404) is paired; the first end (3401) and the second end (3402) are respectively located on two sides of the connection rod (3404); the roller (3403) is mounted in the connection rod (3404) in a rolling manner; the lock bar (3100) drags, through the corner connection assembly (3400), the locking lever (3200) to move synchronously; the first end (3401) of the corner connection assembly (3400) is connected with the lock bar (3100) through the locking lever pin shaft (3300); the second end (3402) of the corner connection assembly (3400) is connected with the locking lever (3200) through the locking lever pin shaft (3300); and the lock bar (3100) drags, through the corner connection assembly (3400), the locking lever (3200) to move.

17. The gangway according to claim 16, wherein the corner connection assembly (3400) is of a three-section type structure; and the first end (3401) and the second end (3402) of the corner connection assembly (3400) swing respectively.

18. The gangway according to claim 17, wherein when the locking lever mechanism (3000) moves from a first working position to a third working position, an included angle α between a center line of the first end (3401) of the corner connection assembly (3400) and the center axis of the lock bar (3100) is equal to 3.3-15.3°; when the locking lever mechanism (3000) moves from the first working position to the third working position, an included angle β between a center line

of the second end (3402) of the corner connection assembly (3400) and the center axis of the locking lever (3200) is equal to 5.2-18.8°; when the locking lever mechanism (3000) moves from the first working position to the third working position, the corner connection assembly (3400) always moves in a tangential direction of an arc of an corner curved section of the couple frame accommodating slot in the couple frame assembly; at least one roller in a roller group of the corner connection assembly (3400) is always in linear contact with the corner curved section of the connection frame accommodating slot in the couple frame assembly.

19. A gangway coupling device having a gangway, comprising the first gangway according to any one of claims 1 to 18, and further comprising a second gangway, wherein latch hook of a coupling part of the first gangway is connected with a lock plate of a coupling part of the second gangway; a latch hook of the coupling part of the second gangway is connected with a lock plate of the coupling part of the first gangway; the first gangway is fixedly connected to a first vehicle body; the second gangway is fixedly connected to a second vehicle body; the first gangway includes a first corrugated bellow assembly and a first side wall; and the second gangway includes a second corrugated bellow assembly and a second side wall.