CLAIMS

What is claimed is:

1. A rotation mechanism comprising a main shaft assembly, a first fastening bracket, a first transmission arm, a first rotation arm, a second fastening bracket, a second transmission arm, and a second rotation arm, wherein

the first transmission arm comprises a sliding end and a rotation end, the sliding end of the first transmission arm is slidably connected to the first fastening bracket, the rotation end of the first transmission arm is rotatably connected to the main shaft assembly, one end of the first rotation arm is rotatably connected to the first fastening bracket, the other end of the first rotation arm is rotatably connected to the main shaft assembly, and wherein

the second transmission arm comprises a sliding end and a rotation end, the sliding end of the second transmission arm is slidably connected to the second fastening bracket, the rotation end of the second transmission arm is rotatably connected to the main shaft assembly, one end of the second rotation arm is rotatably connected to the second fastening bracket, the other end of the second rotation arm is rotatably connected to the main shaft assembly.

2. The rotation mechanism according to claim 1, wherein the rotation mechanism further comprises a first support plate and a second support plate, the main shaft assembly has a support surface, the support surface of the main shaft assembly is exposed relative to the first support plate and the second support plate, and the support surface of the main shaft assembly comprises a first arc surface region, a plane region, and a second arc surface region that are sequentially arranged in a direction from the first support plate to the second support plate.

3. The rotation mechanism according to claim 1, wherein the rotation mechanism further comprises a first support plate and a second support plate,

wherein when the rotation mechanism is unfolded to an unfolded state, a support surface of the first support plate and a support surface of the second support plate are parallel to a plane region of a support surface of the main shaft assembly; and

when the rotation mechanism is folded to a closed state, the support surface of the first support plate is inclined relative to the plane region of the support surface of the main shaft assembly, the support surface of the second support plate is inclined relative to the plane region of the support surface of the main shaft assembly, and the support surface of the first support plate and the support

surface of the second support plate are away from each other in a direction away from the support surface of the main shaft assembly.

4. The rotation mechanism according to any one of claims 1 to 3, wherein the rotation mechanism further comprises a first support plate and a second support plate,

wherein the main shaft assembly comprises a main inner shaft and a main outer shaft fastened to the main inner shaft, and the main outer shaft is partially exposed relative to the first support plate and the second support plate;

the first transmission arm and the main shaft assembly rotates relative to a first rotation center, wherein a distance between the first rotation center and the main inner shaft is less than a distance between the first rotation center and the main outer shaft;

the first rotation arm and the main shaft assembly rotates relative to a second rotation center, wherein a distance between the second rotation center and the main outer shaft is less than a distance between the second rotation center and the main inner shaft;

the second transmission arm and the main shaft assembly rotates relative to a third rotation center, wherein a distance between the third rotation center and the main inner shaft is less than a distance between the third rotation center and the main outer shaft;

the second rotation arm and the main shaft assembly rotates relative to a fourth rotation center, wherein a distance between the fourth rotation center and the main outer shaft is less than a distance between the fourth rotation center and the main inner shaft.

5. The rotation mechanism according to claim 4, wherein the main inner shaft and the main outer shaft jointly enclose a plurality of arc grooves;

the rotation end of the first transmission arm is in an arc shape and is disposed in a first arc groove of the plurality of arc grooves, and the end that is of the first rotation arm and that is rotatably connected to the main shaft assembly is in an arc shape and is disposed in a second arc groove of the plurality of arc grooves; and

the rotation end of the second transmission arm is in an arc shape and is disposed in a third arc groove of the plurality of arc grooves, and the end that is of the second rotation arm and that is rotatably connected to the main shaft assembly is in an arc shape and is disposed in a fourth arc groove of the plurality of arc grooves.

6. The rotation mechanism according to any one of claims 1 to 5, wherein the first fastening bracket has a first sliding slot, a first concave region, and a second concave region, both the first

concave region and the second concave region communicate with the first sliding slot, and the first concave region is located between the main shaft assembly and the second concave region;

the rotation mechanism further comprises a first stopper, the first stopper is disposed on the sliding end of the first transmission arm, and the sliding end of the first transmission arm is disposed in the first sliding slot; and

when the rotation mechanism is unfolded to the unfolded state, the first stopper is partially clamped into the first concave region, and when the rotation mechanism is folded to the closed state, the first stopper is partially clamped into the second concave region.

7. The rotation mechanism according to claim 6, wherein the sliding end of the first transmission arm has a first accommodating groove, and the first stopper is disposed in the first accommodating groove; and

the first stopper comprises a first bracket and a first elastic part, the first bracket comprises a control portion and an abutment portion, one end of the first elastic part is disposed on the control portion of the first bracket, the other end abuts against a groove wall of the first accommodating groove, and the abutment portion of the first bracket is clamped into the first fastening bracket.

8. The rotation mechanism according to any one of claims 1 to 7, wherein the first fastening bracket has a fifth arc groove, and the end that is of the first rotation arm and that is rotatably connected to the first fastening bracket is in an arc shape and is disposed in the fifth arc groove; and

the second fastening bracket has a sixth arc groove, and the end that is of the second rotation arm and that is rotatably connected to the second fastening bracket is in an arc shape and is disposed in the sixth arc groove.

9. The rotation mechanism according to any one of claims 1 to 8, wherein the rotation mechanism further comprises a first support plate and a second support plate,

wherein the first rotation arm comprises a first rotation part and a second rotation part;

the first rotation part comprises a fixed portion and a rotation portion, the end that is of the first rotation arm and that is rotatably connected to the first fastening bracket is formed on the rotation portion of the first rotation part, and the fixed portion of the first rotation part is fastened to the first support plate; and

the second rotation part comprises a fixed portion and a rotation portion, the end that is of the first rotation arm and that is rotatably connected to the main shaft assembly is formed on the

rotation portion of the second rotation part, and the fixed portion of the second rotation part is fastened to the first support plate.

10. The rotation mechanism according to any one of claims 1 to 8, wherein the rotation mechanism further comprises a first support plate and a second support plate,

wherein the first rotation arm comprises a first rotation part, a second rotation part, and a first fastening part;

the first rotation part comprises a fixed portion and a rotation portion, the end that is of the first rotation arm and that is rotatably connected to the first fastening bracket is formed on the rotation portion of the first rotation part, and the fixed portion of the first rotation part is fastened to the first fastening part;

the second rotation part comprises a fixed portion and a rotation portion, the end that is of the first rotation arm and that is rotatably connected to the main shaft assembly is formed on the rotation portion of the second rotation part, and the fixed portion of the second rotation part is fastened to the first fastening part; and

the first fastening part is fixedly connected to the first support plate.

11. The rotation mechanism according to any one of claims 1 to 8, wherein the rotation mechanism further comprises a first support plate and a second support plate,

wherein the first rotation arm is an integrally formed mechanical part, the first rotation arm comprises a first rotation portion, a fixed portion, and a second rotation portion that are sequentially arranged, the end that is of the first rotation arm and that is rotatably connected to the first fastening bracket is formed on the first rotation portion of the first rotation arm, and the end that is of the first rotation arm and that is rotatably connected to the main shaft assembly is formed on the second rotation portion of the first rotation arm; and the first support plate is fastened to the fixed portion of the first rotation arm.

12. The rotation mechanism according to any one of claims 1 to 11, wherein the rotation mechanism further comprises a first support plate and a second support plate,

wherein the rotation mechanism further comprises a first shielding plate and a second shielding plate, the first shielding plate is located on a side that is of the first transmission arm and that is away from the first support plate, and is fixedly connected to the sliding end of the first transmission arm, and the second shielding plate is located on a side that is of the second transmission arm and that is away from the second support plate, and is fixedly connected to the

sliding end of the second transmission arm;

when the rotation mechanism is unfolded to the unfolded state, the first shielding plate is flush with the second shielding plate, the first shielding plate is lapped between the first fastening bracket and the main shaft assembly, and the second shielding plate is lapped between the second fastening bracket and the main shaft assembly; and

when the rotation mechanism is folded to the closed state, the first shielding plate is located between the first fastening bracket and the first housing, and the second shielding plate is located between the second fastening bracket and the second housing.

13. The rotation mechanism according to any one of claims 1 to 12, wherein the rotation mechanism further comprises a third fastening bracket, a fourth fastening bracket, a first synchronous swing arm, and a second synchronous swing arm;

the third fastening bracket is fastened to the first housing, and the fourth fastening bracket is fastened to the second housing;

the first synchronous swing arm comprises a rotation end and a movable end, the rotation end of the first synchronous swing arm is rotatably connected to the main shaft assembly, the movable end of the first synchronous swing arm is movably connected to the third fastening bracket, and in a process in which the first housing and the second housing are folded or unfolded relative to each other, the movable end of the first synchronous swing arm slides and rotates relative to the third fastening bracket; and

the second synchronous swing arm comprises a rotation end and a movable end, the rotation end of the second synchronous swing arm is rotatably connected to the main shaft assembly, the rotation end of the second synchronous swing arm is engaged with the rotation end of the first synchronous swing arm, the movable end of the second synchronous swing arm is movably connected to the fourth fastening bracket, and in the process in which the first housing and the second housing are folded or unfolded relative to each other, the movable end of the second synchronous swing arm slides and rotates relative to the fourth fastening bracket.

14. The rotation mechanism according to claim 1, wherein the rotation mechanism further comprises a first support plate and a second support plate,

wherein the first support plate is lapped between the first fastening bracket and the main shaft assembly, and is fixedly connected to the first rotation arm, and the second support plate is lapped between the second fastening bracket and the main shaft assembly, and is fixedly connected to the

second rotation arm.

15. The rotation mechanism according to any one of claims 1 to 14, wherein the rotation end of the first transmission arm is rotatably connected to main shaft assembly by an arc groove, the rotation end of the second transmission arm is rotatably connected to the main shaft assembly by an arc groove.

16. The rotation mechanism according to any one of claims 1 to 15, wherein the one end of the first rotation arm is rotatably connected to the first fastening bracket by a virtual shaft or a real shaft, the one end of the second rotation arm is rotatably connected to the second fastening bracket by a virtual shaft or a real shaft, the other end is rotatably connected to the main shaft assembly by a virtual shaft or a real shaft, the other end is rotatably connected to the main shaft assembly by a virtual shaft or a real shaft.

17. The rotation mechanism according to claim 16, wherein:

the one end of the first rotation arm is rotatably connected to the first fastening bracket by a virtual shaft, comprising: the one end of the first rotation arm is rotatably connected to the first fastening bracket by an arc groove;

the one end of the second rotation arm is rotatably connected to the second fastening bracket by a virtual shaft, comprising: the one end of the second rotation arm is rotatably connected to the second fastening bracket by an arc groove;

the other end of the first rotation arm is rotatably connected to the main shaft assembly by a virtual shaft, comprising: the other end of the first rotation arm is rotatably connected to the main shaft assembly by an arc groove; and

the other end of the second rotation arm is rotatably connected to the main shaft assembly by a virtual shaft, comprising: the other end of the second rotation arm is rotatably connected to the main shaft assembly by an arc groove.

18. The rotation mechanism according to any one of claims 1 to 17, wherein the rotation mechanism further comprises a first support plate and a second support plate,

wherein:

the first support plate is fastened to a fixed portion of the first rotation arm by using a first fastener;

the second support plate is fastened to a fixed portion of the second rotation arm by using a second fastener.

19. The rotation mechanism according to any one of claims 1 to 18, wherein: the one end of the first rotation arm and the other end of the first rotation arm is an integrally formed mechanical part; or, the one end of the first rotation arm and the other end of the first rotation arm are two mechanical parts independent of each other.

20. An electronic device, comprising a first housing, a second housing, a flexible display and the rotation mechanism according to any one of claims 1 to 19, wherein

the first fastening bracket is fastened to the first housing, the second fastening bracket is fastened to the second housing;

the flexible display comprises a first part, a second part, and a third part that are sequentially arranged, the first part is fastened to the first housing, the third part is fastened to the second housing, and the second part deforms in a process in which the first housing and the second housing are folded or unfolded relative to each other.

21. The electronic device according to claim 20, wherein the flexible display is in an outer side of the electronic device when the electronic device is in a folded state.