device configured to adjust the loading device to be moved between the first chamber and the second chamber, the loading device is provided with a first connecting part, the second adjusting device is provided with a second connecting part, one of the first connecting part and the second connecting part is an electromagnet connector, the other thereof is a magnetic connector, and the magnetic connector and the electromagnet connector form a magnetically detachable connection structure.

[0006] Further options are: the first chamber is provided with a first sensor, the second chamber is provided with a second sensor, and both the first sensor and the second sensor are configured to detect a position of the loading device.

[0007] The second chamber is a coating chamber, and the first chamber is further provided with a third sensor configured to detect a position of the first connecting part.

[0008] The second adjusting device is provided with a fourth sensor configured to detect a connecting state between the first connecting part and the second connecting part.

[0009] The first connecting part is the electromagnet connector, and the second connecting part is the magnetic connector.

[0010] The magnetic connector is made of iron.

[0011] The first connecting part is floatingly mounted on the loading device in a first direction through a spring, the first direction is a distance direction between the first connecting part and the second connecting part, and the spring drives the first connecting part to move close toward the second connecting part.

[0012] The second adjusting device is a vacuum electric cylinder, the vacuum electric cylinder is mounted on the first chamber, the first chamber is located between the second chamber and the vacuum electric cylinder, a piston rod of the vacuum electric cylinder is arranged in the first direction, and both the second connecting part and the fourth sensor are mounted on a push end of the piston rod.

[0013] The first adjusting device is a gate valve provided on the connecting channel, the first chamber is a loading chamber configured to load the workpiece to be coated to the loading device, and the loading device is driven to move by using a servo motor on the vacuum electric cylinder.

[0014] Provided in the present application is further a method for loading and unloading a two-

and thus improves the production efficiency of the coating.

[0024] Further options are: the first chamber 11 is provided with a first sensor 21, the second chamber 12 is provided with a second sensor 22, and both the first sensor 21 and the second sensor 22 are configured to detect a position of the loading device 30. The second chamber 12 is a coating chamber, and the first chamber 11 is further provided with a third sensor 23 configured to detect a position of the first connecting part. The second adjusting device 14 is provided with a fourth sensor 24 configured to detect a connecting state between the first connecting part and the second connecting part. The first connecting part is the electromagnet connector 41, and the second connecting part is the magnetic connector 31. The magnetic connector 31 is made of iron. The first sensor 21, the second sensor 22, the third sensor 23, and the fourth sensor 24 are all contact sensors. The loading device 30 may specifically be a substrate turntable trolley, and the loading device 30 may be slidingly mounted or rollingly mounted thereon. Slide rails or traveling tracks are provided between the first chamber 11 and the second chamber 12, and the slide rails and traveling tracks are provided with a vacant segment corresponding to the first adjusting device 13, so as to reliably and conveniently adjust the loading device 30 for sliding or traveling. The first chamber 11 and the second chamber 12 may be provided with a first locking assembly and a second locking assembly, respectively, configured to lock the loading device 30 after it is moved into place. Alternatively, the loading device 30 is provided with a locking structure directly on the loading device 30, and the locking structure is provided to lock the loading device 30 as it moves into place.

[0025] Further, the first connecting part is floatingly mounted on the loading device 30 in a first direction through a spring 32, the first direction is a distance direction between the first connecting part and the second connecting part, the spring 32 drives the first connecting part to move close toward the second connecting part. A distance direction between the first chamber 11 and second chamber 12 is identical to the first direction. The second adjusting device 14 is a vacuum electric cylinder, the vacuum electric cylinder is mounted on the first chamber 11, the first chamber 11 is located between the second chamber 12 and the vacuum electric cylinder, a piston rod of the vacuum electric cylinder is arranged in the first direction, and both the second connecting part and the fourth sensor 24 are mounted on a push end of the piston rod. The first adjusting device 13 is

CLAIMS

1. An apparatus for loading and unloading a two-chamber coating device, comprising a first chamber, a second chamber, and a loading device configured to load a workpiece to be coated, wherein the loading device is movably mounted between the first chamber and the second chamber, a connecting channel configured for moving the loading device is provided between the first chamber and the second chamber, the connecting channel is provided with a first adjusting device configured to adjust a communication state of the connecting channel, and a second adjusting device configured to adjust the loading device to be moved between the first chamber and the second chamber, the loading device is provided with a first connecting part, the second adjusting device is provided with a second connecting part, one of the first connecting part and the second connecting part is an electromagnet connector, the other thereof is a magnetic connector, and the magnetic connector and the electromagnet connector form a magnetically detachable connection structure.

2. The apparatus for loading and unloading the two-chamber coating device according to claim 1, wherein the first chamber is provided with a first sensor, the second chamber is provided with a second sensor, and both the first sensor and the second sensor are configured to detect a position of the loading device.

3. The apparatus for loading and unloading the two-chamber coating device according to claim 1, wherein the second chamber is a coating chamber, and the first chamber is further provided with a third sensor configured to detect a position of the first connecting part.

4. The apparatus for loading and unloading the two-chamber coating device according to claim 1, wherein the second adjusting device is provided with a fourth sensor configured to detect a connecting state between the first connecting part and the second connecting part.

5. The apparatus for loading and unloading the two-chamber coating device according to any one of claims 1-4, wherein the first connecting part is the electromagnet connector, and the second connecting part is the magnetic connector.

6. The apparatus for loading and unloading the two-chamber coating device according to any one of claims 1-4, wherein the magnetic connector is made of iron.

7. The apparatus for loading and unloading the two-chamber coating device according to claim 6, wherein the first connecting part is floatingly mounted on the loading device in a first direction through a spring, the first direction is a distance direction between the first connecting part and the second connecting part, and the spring drives the first connecting part to move close toward the second connecting part.

8. The apparatus for loading and unloading the two-chamber coating device according to claim 7, wherein the second adjusting device is a vacuum electric cylinder, the vacuum electric cylinder is mounted on the first chamber, the first chamber is located between the second chamber and the vacuum electric cylinder, a piston rod of the vacuum electric cylinder is arranged in the first direction, and both the second connecting part and the fourth sensor are mounted on a push end of the piston rod.

9. The apparatus for loading and unloading the two-chamber coating device according to claim 8, wherein the first adjusting device is a gate valve provided on the connecting channel, the first chamber is a loading chamber configured to load the workpiece to be coated to the loading device, and the loading device is driven to move by using a servo motor on the vacuum electric cylinder.

10. A method operated in an apparatus for loading and unloading a two-chamber coating device according to claim 8, comprising following steps:

loading the workpiece to be coated to the loading device in the first chamber;

adjusting the first adjusting device to allow the connecting channel to be in a connected state;

powering on the electromagnet connector to be assembled with the magnetic connector;

adjusting the second adjusting device to move the loading device into the second chamber when it is detected that the electromagnet connector is finished in being assembled with the magnetic connector;

powering off the electromagnet connector to be detached from the magnetic connector and adjusting the electromagnet connector to move into the first chamber, when it is detected that the loading device is finished in movement;

adjusting the first adjusting device to allow the connecting channel to be in a closed state and performing a coating process on the workpiece on the loading device in the second chamber, when it is detected that the electromagnet connector is finished in movement;

adjusting the first adjusting device to allow the connecting channel to be in the connected state when the workpiece is finished in performing the coating process;
initiating the second adjusting device to allow the electromagnet connector to move into the second chamber;

powering on the electromagnet connector to be assembled with the magnetic connector when it is detected that the electromagnet connector is finished in movement;

initiating the second adjusting device to allow the loading device to move into the first chamber when it is detected that the electromagnet connector is finished in being assembled with the magnetic connector; and

adjusting the first adjusting device to allow the connecting channel to be in the closed state and unloading the workpiece after coating when it is detected that the loading device is finished in movement.