CLAIMS

WHAT IS CLAIMED IS:

1. An unmanned aerial vehicle centering device, characterized by comprising a fixed plate (100), a driving member (200), a driving disk (300), and a scraper (400), wherein

a plurality of scrapers (400) are provided, a centering region is defined by the plurality of scrapers (400), and a bottom surface of each scraper (400) is slidably connected to the fixed plate (100);

the driving member (200) is in transmission connection with the driving disk (300), and the driving member (200) is configured to drive the driving disk (300) to rotate along an axial direction of the driving disk (300), so as to drive the plurality of scrapers (400) to move toward each other or away from each other through the driving disk (300);

the unmanned aerial vehicle centering device further comprises a pushing assembly (500); and

the pushing assembly (500) is connected to a top surface of the driving disk (300), and the pushing assembly (500) is configured to rotate together with the driving disk (300), so that the pushing assembly (500) pushes unmanned aerial vehicle arms (11) to move.

2. The unmanned aerial vehicle centering device according to claim 1,

wherein

a top surface of the fixed plate (100) is provided with a plurality of guide rails (110), each scraper (400) is correspondingly provided with a guide rail (110), a bottom surface of each scraper (400) is fixed with a slider (420), and the slider (420) is slidably connected to the guide rail (110), so that the plurality of scrapers (400) is capable of moving toward each other or away from each other along the guide rails (110) to which the sliders are slidably connected.

3. The unmanned aerial vehicle centering device according to claim 1, wherein

a top surface of each scraper (400) is provided with a protruding portion (410), and the protruding portion (410) extends into a slot (310) of the driving disk (300).

4. The unmanned aerial vehicle centering device according to claim 1, wherein

the driving disk (300) has a rack section (320), a driving end of the driving member (200) is provided with a gear (210), and the gear (210) is meshed with the rack section (320).

5. The unmanned aerial vehicle centering device according to claim 1,

wherein

an end portion and a side surface of the scraper (400) are respectively provided with a sliding board (430) and a sliding groove (440), the sliding board (430) of the scraper (400) extends into a sliding groove (440) of an adjacent scraper (400), and the sliding board (430) is capable of sliding in the sliding groove (440).

6. The unmanned aerial vehicle centering device according to claim 1, wherein

the pushing assembly (500) comprises a moving seat (510) and a pushing member (520);

a bottom surface of the moving seat (510) has an insertion protrusion (511), the insertion protrusion (511) extends into the driving disk (300), and a top surface of the moving seat (510) is connected to the pushing member (520); and

in response to the pushing member (520) moving together with the driving disk (300) through the moving seat (510), a side surface of the pushing member (520) is capable of pushing the unmanned aerial vehicle arms (11).

7. The unmanned aerial vehicle centering device according to claim 6,

wherein

the pushing member (520) is provided with an elongated hole (521), a top surface of the moving seat (510) is provided with a plurality of connecting holes (512), and a connecting member passes through the elongated hole (521) and selectively extends into different connecting holes (512), so as to adjust a relative position between the pushing member (520) and the moving seat (510).

8. The unmanned aerial vehicle centering device according to claim 7, wherein

the pushing assembly (500) further comprises a fixed guiding member (530) and a connecting member (540); and

the fixed guiding member (530) is located above the driving disk (300), the fixed guiding member (530) is fixed to the fixed plate (100) through the connecting member (540), a bottom surface of the fixed guiding member (530) is provided with a sliding groove (533), the insertion protrusion (511) passes through the sliding groove (533) and extends into the driving disk (300), and the insertion protrusion (511) is capable of moving within the sliding groove (533).

9. The unmanned aerial vehicle centering device according to claim 8, wherein

the fixed guiding member (530) comprises a guiding base plate (531) and a guiding housing (532); and

the guiding base plate (531) is connected to the connecting member (540), the guiding base plate (531) is provided with the sliding groove (533), the guiding housing (532) is connected to two side edges of the guiding base plate (531), the guiding housing (532) and the guiding base plate (531) together define an arc-shaped chamber, and the pushing member (520) extends into or retracts from the arc-shaped chamber with rotation of the driving disk (300).

10. The unmanned aerial vehicle centering device according to claim 9, wherein

the connecting member (540) comprises a connecting upper plate (541), a connecting side plate (542), and a connecting lower plate (543);

the connecting upper plate (541) is located above the driving disk (300), and the connecting upper plate (541) is configured to connect to the guiding base plate (531);

the connecting lower plate (543) is located below the fixed plate (100), and the connecting lower plate (543) is configured to connect to the fixed plate (100); and

a top end of the connecting side plate (542) is connected to a side end of the connecting upper plate (541), and a bottom end of the connecting

side plate (542) is connected to a side end of the connecting lower plate (543).

11. The unmanned aerial vehicle centering device according to any one of claims 1-10, wherein

a peripheral outer circumference of the fixed plate (100) is provided at intervals with an opening detection switch (601) and a closing detection switch (603);

a peripheral outer circumference of the driving disk (300) is provided at intervals with an opening detection member (602) and a closing detection member (604);

the opening detection switch (601) is configured to sense the opening detection member (602), so that the plurality of scrapers (400) stop moving in directions away from each other; and

the closing detection switch (603) is configured to sense the closing detection member (604), so that the plurality of scrapers (400) stop moving in directions toward each other.

12. A centering control method for unmanned aerial vehicle takeoff and landing positioning based on the unmanned aerial vehicle centering device according to any one of claims 1-11, characterized by comprising the following steps:

driving the plurality of scrapers (400) to move away from each other by a rotation of the driving disk (300), in response to the unmanned aerial vehicle being ready to land;

sensing, by the opening detection switch (601), the opening detection member (602), and stopping movement of the plurality of scrapers (400), in response to the opening detection member (602) rotating with the driving disk (300) to a position above the opening detection switch (601);

driving, after the unmanned aerial vehicle lands in the centering region, the plurality of scrapers (400) to move toward each other by the rotation of driving disk (300); and

in response to the closing detection member (604) rotating with the driving disk (300) to a position above the closing detection switch (603), sensing, by the closing detection switch (603), the closing detection member (604), stopping the movement of the plurality of scrapers (400) stop moving, thereby completing the positioning centering of the unmanned aerial vehicle.

13. The centering control method for unmanned aerial vehicle takeoff and landing positioning according to claim 12, further comprising the following steps:

detecting, by the unmanned aerial vehicle detection switch (605), the unmanned aerial vehicle, and driving the plurality of scrapers (400) to

move away from each other by the rotation of the driving disk (300), in response to the unmanned aerial vehicle being ready to be launched;

sensing, by the opening detection switch (601), the opening detection member (602), stopping the movement of the plurality of scrapers (400), and launching the unmanned aerial vehicle, in response to the opening detection member (602) rotating with the driving disk (300) to a position above the opening detection switch (601); and

after launching the unmanned aerial vehicle, driving the plurality of scrapers (400) to move toward each other by the rotation of the driving disk (300), and stopping the movement of the plurality of scrapers toward each other in response to the closing detection switch (603) detecting the closing detection member (604).

14. A computer device, configured to execute the centering control method for unmanned aerial vehicle takeoff and landing positioning according to any one of claims 12-13.

15. A computer-readable storage medium, configured to store software for executing the centering control method for unmanned aerial vehicle takeoff and landing positioning according to any one of claims 12-13.