【CLAIMS】

【Claim 1】

A ship cleaning robot which, when assembled, comprises:

a rear horizontal body 420;

a first caterpillar module 501 disposed at a right side of the rear horizontal body 420, assembled to be rotatable relative to the rear horizontal body 420 in a vertical direction, and configured to provide propulsive force to move on a hull;

a second caterpillar module 502 disposed at a left side of the rear horizontal body 420, assembled to be rotatable relative to the rear horizontal body 420 in the vertical direction, and configured to provide propulsive force to move on the hull; and

a stabilizer 600 disposed in the rear horizontal body 420, and allowing the first caterpillar module 501 and the second caterpillar module 502 to symmetrically rotate in the vertical direction.

【Claim 2】

The ship cleaning robot of claim 1, wherein

the first caterpillar module 501 is disposed to be rotatable in the vertical direction through a first module rotary shaft 541 disposed at the right side of the rear horizontal body 420, and

the second caterpillar module 502 is disposed to be rotatable in the vertical direction through a second module rotary shaft 542 disposed at the left side of the rear horizontal body 420.

【Claim 3】

The ship cleaning robot of claim 2, wherein

the first caterpillar module 501 comprises:

a first module casing 511 extended in forward and backward directions and

opened downwards;

a first caterpillar 521 disposed inside the first module casing 511 and forming continuous tracks in the forward and backward directions;

a first caterpillar actuator disposed inside the first module casing 511 and circulating the first caterpillar 521; and

a first module rotator 531 disposed in the first module casing 511 and rotatably assembled with the rear horizontal body 420, and

the first module rotary shaft 541 is rotatably assembled with the first module rotator 531, and the first module rotary shaft 541 is disposed in the forward and backward directions.

【Claim 4】

The ship cleaning robot of claim 3, wherein

a first rear magnet 830 is disposed under the first module rotator 531, and the first rear magnet 830 is disposed at a right side of the first module rotary shaft 541.

【Claim 5】

The ship cleaning robot of claim 2, wherein

the second caterpillar module 502 comprises:

a second module casing 512 extended in forward and backward directions and opened downwards;

a second caterpillar 522 disposed inside the second module casing 512 and forming continuous tracks in the forward and backward directions;

a second caterpillar actuator disposed inside the second module casing 512 and circulating the second caterpillar 522; and

a second module rotator 532 disposed in the second module casing 512 and rotatably assembled with the rear horizontal body 420, and

the second module rotary shaft 542 is rotatably assembled with the second module rotator 532, and the second module rotary shaft 542 is disposed in the forward and backward directions.

【Claim 6】

The ship cleaning robot of claim 5, wherein

a second rear magnet 840 is disposed under the second module rotator 532, and the second rear magnet 840 is disposed at a left side of the second module rotary shaft 542.

【Claim 7】

The ship cleaning robot of claim 1, wherein

the first caterpillar module 501 comprises: a first module casing 511 extended in forward and backward directions and opened downwards; a first caterpillar 521 disposed inside the first module casing 511 and forming continuous tracks in the forward and backward directions; a first caterpillar actuator disposed inside the first module casing 511 and circulating the first caterpillar 521; and a first module rotator 531 disposed in the first module casing 511 and rotatably assembled with the rear horizontal body 420, and

the second caterpillar module 502 comprises: a second module casing 512 extended in forward and backward directions and opened downwards; a second caterpillar 522 disposed inside the second module casing 512 and forming continuous tracks in the forward and backward directions; a second caterpillar actuator disposed inside the second module casing 512 and circulating the second caterpillar 522; and a second module rotator 532 disposed in the second module casing 512 and rotatably assembled with the rear horizontal body 420.

【Claim 8】

The ship cleaning robot of claim 7, wherein

the rear horizontal body 420 further comprises a supporting column 450 disposed to protrude upwards, and

the stabilizer 600 comprises:

a main link 650 rotatably disposed in the supporting column 450;

a main link shaft 655 rotatably connecting the main link 650 and the supporting column 450;

a first link 610 rotatably connected to the main link 650 and the first module casing 511;

a second link 620 rotatably coupled to the main link 650 and the second module casing 512;

a 1-1 hinge 611 rotatably connecting the main link 650 and the first link 610;

a 1-2 hinge 612 rotatably connecting the first link 610 and the first module casing 511;

a 2-1 hinge 621 rotatably connecting the main link 650 and the second link 620; and

a 2-2 hinge 622 rotatably connecting the second link 620 and the second module casing 512.

【Claim 9】

The ship cleaning robot of claim 8, wherein

the 1-2 hinge 612 is disposed above the first module rotary shaft 541,

the 2-2 hinge 622 is disposed above the second module rotary shaft 542.

【Claim 10】

The ship cleaning robot of claim 1, further comprising:

a front body 200 disposed in front of the rear horizontal body 420;

a body shaft 310 rotatably assembled with the front body 200;

a body shaft 310 rotatably assembled with the front body 200; and

a connection body 300 disposed behind the body shaft 310 and connecting the rear horizontal body 420 and the body shaft 310,

wherein the body shaft 310 is disposed in the forward and backward directions, and

wherein the front body 200 is rotatable around the body shaft 310 clockwise or counterclockwise when viewed from the front.

【Claim 11】

The ship cleaning robot of claim 10, further comprising:

a connection vertical body 410 coupled to the connection body 300 and disposed in the vertical direction,

wherein the rear horizontal body 420 is assembled to the connection vertical body 410 and tiltable with respect to the rear horizontal shaft 430, and extended from the connection vertical body 410 leftwards and rightwards, and

wherein the rear horizontal shaft 430 is disposed in left and right directions, when viewed from the front, and the connection vertical body 410 is rotated around the rear horizontal shaft 430 in the forward and backward directions.

【Claim 12】

The ship cleaning robot of claim 11, further comprising:

a third rear magnet 850 disposed under a front extension portion 425 of the rear horizontal body 420; and

a fourth rear magnet 860 disposed under a rear extension portion 426 of the rear horizontal body 420.

【Claim 13】

The ship cleaning robot of claim 10, wherein

the front body 200 comprises:

a lower front portion 210 under which a front magnet 810 is installed;

an upper front portion 220 formed protruding from the lower front portion 210 upwards and rotatably coupling with the connection body 300; and

front wings 230 and 240 formed protruding from at least one of the lower front portion 210 or the upper front portion 220 laterally.

【Claim 14】

The ship cleaning robot of claim 13, wherein

the upper front portion 220 comprises:

a first upper front portion 221 extended from the lower front portion 210 upwards;

a second upper front portion 222 detachably coupled to the first upper front portion 221;

a lower groove 223 recessed downwards on an upper surface of the first upper front portion 221 and inserting a lower portion of the body shaft 310 therein, and

an upper groove 224 recessed upwards on a lower surface of the second upper front portion 222 and inserting an upper portion of the body shaft 310 therein.

【Claim 15】

The ship cleaning robot of claim 14, further comprising:

a first coupling guide 311 protruding from a front outer circumferential surface of the body shaft 310 outwards in a radial direction; and

a second coupling guide 312 disposed to be spaced backward apart from the first coupling guide 311 and protruding outward in the radial direction of the body shaft 310.

【Claim 16】

The ship cleaning robot of claim 12, further comprising:

at least one of a first auxiliary wheel 441 and a second auxiliary wheel 442 rotatably provided in the front extension portion 425, and

at least one of a third auxiliary wheel 443 and a fourth auxiliary wheel 444 rotatably provided in the rear extension portion 426.