CLAIMS

~~[1] A thrust generating apparatus provided in a liquid and configured to generate thrust by ejecting the liquid,~~

~~the thrust generating apparatus comprising:~~

~~an annular stator at which a plurality of coils are provided;~~

~~a rotor including a plurality of magnets, an annular rotor core to which the magnets are attached and which is constituted by a magnetic body on which a corrosion resistant coating is formed, and an annular rotor main body externally fitted by the rotor core;~~

~~a propeller blade provided on a radially inner side of the rotor main body and formed integrally with the rotor main body;~~

~~a first sliding bearing provided on one side of the rotor main body, provided to be opposed to one side surface and outer peripheral surface of the rotor main body, and configured to support a thrust load and a radial load; and~~

~~a second sliding bearing provided on the other side of the rotor main body, provided to be opposed to the other side surface and outer peripheral surface of the rotor main body, and configured to support the thrust load and the radial load, wherein~~

~~the rotor main body includes a first member including the side surface and outer peripheral surface which are opposed to the first sliding bearing, a second member including the side surface and outer peripheral surface which are opposed to the second sliding bearing, and a third member including a supporting surface contacting an inner peripheral surface of the rotor core, and the first to third members are fixed to one another so that each member is detachable.~~

1.~~[2]~~ A thrust generating apparatus provided in a liquid and configured to generate thrust by ejecting the liquid,

the thrust generating apparatus comprising:

an annular stator including a casing, a plurality of coils being provided on an inner periphery side of the casing;

a rotor provided on an inner periphery side of the stator and including an annular rotor main body at which a plurality of magnets are provided;

a propeller blade provided on a radially inner side of the rotor main body and formed integrally with the rotor main body; and

a sliding bearing provided to be opposed to a side surface and outer peripheral surface of the rotor main body and configured to support a thrust load and a radial load,~~;~~ whereinand:

the casing includes an annular outer casing and an annular inner casing provided on an inner periphery side of the outer casing;

the inner casing includes funnel-shaped fairings respectively provided on both sides of the rotor main body and each formed so as to enlarge a diameter thereof in a direction away from the rotor main body;~~, wherein~~

~~the casing and~~ the fairings are provided on the inner periphery side of the outer casing and integrated with the outer casing~~one another~~ so that each is detachable;

the stator includes a coil accommodating space for accommodating a stator core around which the coils wind and a cooling space formed between the outer casing and the inner casing;

a gap is formed between each of outer end portions of the fairings and the outer casing; and

the cooling space communicates through the gap with a main channel where the propeller blade is provided.

2. The thrust generating apparatus according to claim 1, wherein:

the inner casing is detachably fixed to a bracket projecting from the outer casing in a radially inward direction; and

the bracket is provided partially in a circumferential direction so as not to divide the cooling space.

3. The thrust generating apparatus according to claim 1, wherein a first electric cable connected to the coil and a second electric cable connected to a power supply are connected to each other in the cooling space by a water proof connector.

4. The thrust generating apparatus according to claim 1, wherein:

a hole is formed on each of the fairings so as to be located at a position overlapping an extended axis line of a bolt by which the fairing is fixed to a part of the inner casing; and

the cooling space communicates through the hole with the main channel where the propeller blade is provided.

5. The thrust generating apparatus according to claim 1, wherein both ends of the outer casing are respectively welded and fixed to opposing ends of cylindrical walls of a hull.

6. The thrust generating apparatus according to claim 1, wherein the gap forms an annular shape along each of the outer end portions of the fairings.

7.~~[3]~~ A thrust generating apparatus provided in a liquid and configured to generate thrust by ejecting the liquid,

the thrust generating apparatus comprising:

an annular stator at which a plurality of coils are provided;

a rotor including a rotor main body at which a plurality of magnets are provided;

a propeller blade provided on a radially inner side of the rotor main body and formed integrally with the rotor main body; and

a boss formed integrally with a radially inner tip end of the propeller blade and provided on a rotation axis line of the rotor, wherein:

the rotor main body, the propeller blade, and the boss rotate integrally, and the rotor main body, the propeller blade, and the boss are fixed to one another so that each is detachable;

the boss includes a pair of separable bosses configured to be separable in both directions along the rotation axis line; and

the pair of separable bosses are fastened to each other by a bolt and compressively sandwich the radially inner tip end of the propeller blade directly.

8. The thrust generating apparatus according to claim 7, wherein the boss is a hollow member.