Claims

1. Propeller arrangement ~~(100)~~, in particular for a drive system of a water-craft, comprising a propeller ~~(10)~~, said propeller ~~(10)~~ being rotatable about a propeller axis ~~(13)~~, wherein at least one rotor fin ~~(30)~~ is provided which is disposed freely rotatably about the propeller axis ~~(13)~~, wherein the diameter ~~(31)~~ of a circular path described by the rotation of the at least one rotor fin ~~(30)~~ is less than the diameter ~~(16)~~ of the propeller ~~(10)~~.

2. The propeller arrangement according to claim 1,
characterised in that
the at least one rotor fin ~~(30)~~ is disposed on a propeller hub ~~(11)~~ of the propeller ~~(10)~~.

3. The propeller arrangement according to claim 1 or 2,
characterised in that
the diameter ~~(31)~~ of the circular path of the at least one rotor fin ~~(30)~~ is less than 75%, preferably less than 55%, particularly preferably less than 35%, most preferably less than 25% of the diameter ~~(16)~~ of the propeller ~~(10)~~.

4. The propeller arrangement according to any one of the preceding claims, characterised in that
at least one stator fin ~~(20)~~ co-rotating with the propeller ~~(10)~~ is provided, which is preferably disposed between the freely rotatable at least one rotor fin ~~(30)~~ and the propeller ~~(10)~~.

5. The propeller arrangement according to claim 4,
characterised in that
the at least one stator fin ~~(20)~~ is disposed on a propeller hub ~~(11)~~ of the propeller ~~(10)~~ and is firmly connected to said hub.

6. The propeller arrangement according to claim 4 or 5,
characterised in that
the diameter of a circular path described by a rotation of the at least one stator fin is less than the diameter ~~(16)~~ of the propeller ~~(10)~~, in particular the diameter of the circular path of the at least one stator fin is less than 75%, preferably less than 55%, particularly preferably less than 35% of the diameter ~~(16)~~ of the propeller ~~(10)~~.

7. The propeller arrangement according to claim 5 or 6,
characterised in that
the at least one stator fin ~~(20)~~ is arranged offset in the axial direction with respect to the propeller blades ~~(14)~~ of the propeller ~~(10)~~.

8. The propeller arrangement according to any one of the preceding claims,
characterised in that
a number of rotor fins ~~(30)~~ and/or stator fins ~~(20)~~ are provided, which are arranged distributed in the circumferential direction about the propeller axis ~~(13)~~.

9. The propeller arrangement according to claim 8,
characterised in that
the number of rotor fins ~~(30)~~ and/or stator fins ~~(20)~~ corresponds to the number of propeller blades ~~(14)~~ of the propeller ~~(10)~~.

10. The propeller arrangement according to any one of the preceding claims,
characterised in that
the at least one rotor fin ~~(30)~~ and/or the at least one stator fin ~~(20)~~ have an angle of attack with respect to the propeller axis, wherein the angle of attack is in particular 10° to 80°, preferably 25° to 70°, particularly preferably 40° to 60°.

11. The propeller arrangement according to any one of the preceding claims, characterised in that
the at least one rotor fin ~~(30)~~ and/or the at least one stator fin ~~(20)~~ are arranged to run radially to the propeller axis ~~(13)~~.

12. The propeller arrangement according to any one of claims 4 to 11, characterised in that
the at least one stator fin ~~(20)~~ is disposed on a stator body ~~(21)~~, wherein the stator body ~~(21)~~ is disposed on the front end side on a propeller hub ~~(11)~~ of the propeller ~~(10)~~ and is firmly connected to the propeller hub ~~(11)~~.

13. The propeller arrangement according to any one of claims 2 to 12, characterised in that
a friction bearing ~~(40)~~, in particular a self-lubricating friction bearing, is provided on the propeller hub ~~(11)~~ or on the stator body ~~(21)~~ for mounting the at least one rotor fin ~~(30)~~.

14. The propeller arrangement according to claim 13,
characterised in that
the friction bearing ~~(40)~~ comprises a first bearing element attached firmly to the propeller hub ~~(11)~~ or to the stator body ~~(21)~~ and a second bearing element, in particular a bearing ring ~~(41)~~, wherein the second bearing element is movable with respect to the first bearing element and wherein the at least one rotor fin ~~(30)~~ is firmly attached to the second bearing element.

15. The propeller arrangement according to any one of the preceding claims, characterised in that
the at least one rotor fin ~~(30)~~ is disposed in the direction of the propeller axis ~~(13)~~ at a short distance from the propeller ~~(10)~~, in particular at a distance of a maximum of 0.8 times the propeller diameter ~~(16)~~, preferably

a maximum of 0.5 times the propeller diameter ~~(16)~~, particularly preferably a maximum of 0.3 times the propeller diameter ~~(16)~~.