PATENT CLAIMS

1. A hydrodynamic axial bearing for a shaft (10) which is mounted such that it can rotate in a bearing housing (20), comprising a floating disk which is arranged axially between the bearing housing and a bearing comb (11) which is arranged on the shaft, wherein a lubricating gap, which is bounded by a profiled annular surface and a smooth sliding surface is in each case formed between the bearing housing (20) and the floating disk (30), and the floating disk (30) and the bearing comb (11), wherein the profiled annular surfaces comprise a plurality of wedge surfaces (32) and radial lubricating grooves (31) which each narrow the lubricating gap in the circumferential direction ~~and radial lubricating grooves (31)~~, characterized in that at least one supply hole (35) is incorporated in the floating disk (30), wherein the at least one supply hole (35) open~~ings~~ towards ~~into a~~the lubrication groove on at least one side of the floating disk, connect~~ings~~ the two sides of the floating disk, and ~~allowing lubricating oil to be~~ supplie~~ds~~ lubricant from one side to the other side.

2. The hydrodynamic axial bearing ~~as claimed in claim~~of Claim 1, wherein the floating disk comprises lubricant~~ion~~ grooves (31), ~~on the side facing the bearing comb~~ and ~~wherein~~ the floating disk has ~~a~~ supply hole~~s~~ (35) for the respective ~~each~~ lubricant~~ion~~ groove~~s~~ on the~~each~~ side facing the bearing comb.

3. The hydrodynamic axial bearing ~~as claimed in claim~~of Claim 1, wherein ~~the~~ at least one of the supply hole~~s~~ (35) obliquely faces ~~is directed at an angle~~ radially outward.

4. The hydrodynamic axial bearing ~~as claimed in claim~~ of Claim 1, wherein one side of the floating disk (30) is radially stepped ~~with respect~~relative to the other side.

5. The hydrodynamic axial bearing ~~as claimed in claim~~of Claim 1, wherein the two profiled annular surfaces ~~which~~ form~~ing~~ the lubricating gap~~s~~ on both sides of the floating disk (30) are ~~each sub~~divided into a respectively different number~~s~~ of segments (34)~~,~~; in such case ~~wherein~~ one of the segment~~s~~ (34) ~~in each case~~ comprises one wedge surface (32).

6. The hydrodynamic axial bearing ~~as claimed in claim~~of Claim 1, wherein the two profiled annular surfaces ~~which~~ form~~ing~~ the lubricating gap~~s~~ on both sides of the floating disk are equipped with ~~have~~ wedge surfaces (32) ~~of~~that are formed to be mutually different ~~design~~.

7. The hydrodynamic axial bearing ~~as claimed in claim~~ of Claim 1, wherein the profiled annular surfaces comprise wedge surfaces (32) and a smooth latching surfaces (33), and the two profiled annular surfaces ~~which~~ form~~ing~~ the lubricating gap~~s~~ on both sides of the

floating disk have ~~a~~ different area ratios ~~from the latching surface (33) to~~of the wedge surfaces (32) relative to the latching surface (33).

8. ~~An~~The exhaust-gas turbocharger~~,~~ comprising a shaft ~~with a~~having the hydrodynamic axial bearing according to any one claim from among Claims 1 through 7~~as claimed in one of the preceding claims~~.

9. A floating disk for use in a hydrodynamic axial bearing between a bearing housing and a shaft which is mounted such that it can rotate in the bearing housing, which floating disk ~~has~~ is equipped with a profiled annular surface with a plurality of wedge surfaces (32) and radial lubricating grooves (31) on each of its two sides, wherein when the wedge surfaces are ~~designed such that they, when the floating disc is~~ used in a hydrodynamic axial bearing with the floating disk between the bearing house and the two flat~~smooth~~ sliding surfaces ~~on~~of the ~~bearing house and a~~ bearing comb~~,~~ ~~which is~~ arranged on the shaft, in the floating disk formed to respectively ~~each~~ narrow ~~a~~the lubricating gaps between the floating disk and ~~a~~the flat ~~smooth~~ sliding surface in the circumferential direction, ~~characterized in that~~ at least one supply hole (35) is ~~incorporated~~cut in the floating disk (30), ~~opening into~~ a lubrication groove is opened on at least one side of the floating disk, and ~~connecting the two~~both sides of the floating disk are connected.

10. The floating disk ~~as claimed in claim~~of Claim 9, wherein the floating disk has ~~a~~ supply holes (35) for the respective ~~each~~ lubrication grooves on one side of the floating disk.

11. The floating disk ~~as claimed in claim~~of Claim 9, wherein ~~the~~ at least one of the supply holes (35) obliquely faces ~~is directed at an angle~~ radially outward.

12. The floating disk ~~as claimed in one of claims~~ of any one claim from among Claims 9 ~~to~~through 11, wherein one side of the floating disk (30) is radially stepped ~~with respect~~relative to the other side.

13. The floating disk ~~as claimed in one of claims~~ of any one claim from among Claims 9 ~~to~~through 11, wherein the two profiled annular surfaces forming the lubricating gaps on both sides of the floating disk are ~~each sub~~divided into arespectively different numbers of segments (34)~~,~~; in such case ~~wherein~~ one of the segments (34) ~~in each~~ case comprises one wedge surface (32).

14. The floating disk ~~as claimed in one of claims~~ of any one claim from among Claims 9 ~~to~~through 11, wherein the two profiled annular surfaces ~~which~~ forming the lubricating gaps on both sides of the floating disk ~~have~~are equipped with wedge surfaces (32) ~~of~~ that are formed to be mutually different ~~design~~.

15. The floating disk ~~as claimed in one of claims~~ of any one claim from among Claims 9 ~~to~~through 11, wherein the profiled annular surfaces comprise wedge surfaces (32) and a smooth latching surfaces (33), and the two profiled annular surfaces ~~which~~ forming the lubricating gaps on both sides of the floating disk have ~~a~~ different area ratios of the wedge surfaces (32) relative to ~~from~~ the latching surface (33) ~~to the wedge surface (32)~~.