CLAIMS

1. A power head, comprising: an installation box (2), provided with an installation cavity inside; the installation box (2) being also provided with an opening communicating with the installation cavity; an input shaft (3), arranged in the installation cavity; a first end of the input shaft (3) connected to the installation cavity through a first bearing, and a second end of the input shaft (3) extending outward from the opening; a reducer (1), arranged on the installation box (2) and coaxial with the input shaft (3); an output end of the reducer (1) sleeved on a second end of the input shaft (3), and the output end of the reducer (1) meshing with the second end of the input shaft (3), wherein the reducer (1) is provided with a second bearing (11), the second bearing (11) is configured to support an outside of the output end, and the second end of the input shaft (3) extends at least to a position of the output end where the second bearing (11) is arranged.

2. The power head according to claim 1, wherein the second end of the input shaft (3) is provided with a spline portion (31), the spline portion (31) is provided with a first spline structure, and the output end of the reducer (1) is provided with a second spline structure matched with the first spline structure.

3. The power head according to any one of claims 1-2, further comprising: an annular oil seal structure (5), wherein the oil seal mechanism (5) is configured to fit with the opening and inserted into the opening for installation, an accommodating cavity (52) is provided in the center of the oil seal structure (5); a gear portion (33) is formed at a position between the first end and the second end of the input shaft (3), and an oil seal portion (32) is formed at a position between the second end and the gear portion (33) of the input shaft (3), and the oil seal portion (32) is configured to be inserted into the accommodating cavity (52).

4. The power head according to claim 3, wherein a sealing ring is arranged between the oil seal structure and the installation box (2); and/or, a sealing ring is arranged between the oil seal structure (5) and the oil seal portion (32).

5. The power head according to claim 3, wherein the oil seal structure (5) is provided with a ring portion (51) in a circumferential direction at an edge of one end close to the reducer (1), and

the ring portion (51) extends outward in a radial direction of the opening for being stopped outside an edge of the installation box (2) around the opening.

6. The power head according to claim 5, wherein the ring portion (51) is fixed to the edge of the opening by a fastener.

7. The power head according to claim 3, wherein the installation box (2) is provided with a groove on a circumferential surface that is in contact with the oil seal structure (5) or on an outer circumferential surface of the oil seal structure (5), and a sealing ring is arranged between the oil seal structure (5) and the installation box (2), and the sealing ring is adapted to be embedded in the groove.

8. The power head according to any one of claims 1 to 7, further comprising: a reducer base (4), arranged on the installation box (2); wherein the reducer base (4) is suitable for installing the reducer (1).

9. The power head according to claim 8, wherein the reducer base (4) comprises a first receiving portion (41) and a second receiving portion (42) connected to each other, one end of the first receiving portion (41) away from the second receiving portion (42) is connected to the reducer (1), and one end of the second receiving portion (42) away from the first receiving portion (41) is connected to the installation box (2).

10. The power head according to claim 9, wherein the first receiving portion (41) and the second receiving portion (42) are both arranged in a cylindrical shape, an outer diameter of the first receiving portion (41) is larger than an outer diameter of the second receiving portion (42), and an inner diameter of the first receiving portion (41) is larger than an inner diameter of the second receiving portion (42); geometric centers of the first receiving portion (41) and the second receiving portion (42) are on an axes of the input shaft (3).

11. The power head of claim 9, wherein the first receiving portion (41) is connected to the reducer (1) by a bolt.

12. The power head of claim 9, wherein the second receiving portion (42) is welded to the installation box (2).

13. A power head, comprising: a reducer (1), comprising a sleeve-shaped output end and a bearing supporting an outer side of the output end; an input shaft (3), a portion of the input shaft (3) located between a first end and a second end being formed as a gear portion (33) for power output; wherein, the output end of the reducer (1) is sleeved on the second end of the input shaft (3), and the output end meshes with the second end of the input shaft (3) so that the output end drives the input shaft (3) to rotate, wherein the reducer (1) is provided with a second bearing (11), the second bearing (11) is configured to support an outside of the output end, and the second end of the input shaft (3) extends at least to a position of the output end where the second bearing (11) is arranged.

14. A rotary drilling rig, comprising a power head according to any one of claims 1 to 12.