What is claimed is:

1. A polishing apparatus comprising:

a polishing table for supporting a polishing pad;

a polishing head for pressing a substrate against the polishing pad; and

a head motor for rotating the polishing head,

wherein the polishing head includes:

a head body having a substrate contact surface;

a drive ring coupled to the head body; and

a retainer ring surrounding the substrate contact surface and coupled to the drive ring,

a first screw thread is formed on the drive ring,

a second screw thread, which engages with the first screw thread, is formed on the retainer ring, and

the second screw thread extends in a circumferential direction of the retainer ring; and wherein:

the drive ring includes an annular drive ring body and an annular protrusion which protrudes downwardly from a lower surface of the annular drive ring body;

an annular recess, which houses the annular protrusion therein, is formed in an upper surface of the retainer ring; and

the first screw thread is formed on a side surface of the annular protrusion, and the second screw thread is formed on a side surface of the annular recess.

2. The polishing apparatus according to claim 2, wherein the annular protrusion is constituted by at least a part of a screw ring secured to the annular drive ring body.

3. The polishing apparatus according to claim 1, wherein a lower surface of the annular drive ring body is in contact with the upper surface of the retainer ring.

4. The polishing apparatus according to claim 1, wherein:

the retainer ring includes an annular retainer ring body and a recess ring, the annular recess and the second screw thread being formed in the recess ring; and

the recess ring has a higher strength than the annular retainer ring body.

5. A polishing apparatus comprising:

a polishing table for supporting a polishing pad;

a polishing head for pressing a substrate against the polishing pad; and

a head motor for rotating the polishing head,

wherein the polishing head includes:

a head body having a substrate contact surface;

a drive ring coupled to the head body; and

a retainer ring surrounding the substrate contact surface and coupled to the drive ring,

a first screw thread is formed on the drive ring,

a second screw thread, which engages with the first screw thread, is formed on the retainer ring, and

the second screw thread extends in a circumferential direction of the retainer ring; and wherein:

the retainer ring includes an annular retainer ring body and an annular protrusion which protrudes upwardly from an upper surface of the annular retainer ring body;

an annular recess, which houses the annular protrusion therein, is formed in a lower surface of the drive ring; and

the first screw thread is formed on a side surface of the annular recess, and the second screw thread is formed on a side surface of the annular protrusion.

6. The polishing apparatus according to claim 5, wherein the annular protrusion is constituted by at least a part of a screw ring secured to the annular retainer ring body.

7. The polishing apparatus according to claim 5, wherein an upper surface of the annular retainer ring body is in contact with a lower surface of the drive ring.

8. The polishing apparatus according to claim 1, wherein seal rings, which seal a gap between the drive ring and the retainer ring, are disposed inside and outside the first screw thread and the second screw thread, respectively.

9. The polishing apparatus according to claim 1, wherein a recess, with which a tightening tool for rotating the retainer ring about its own axis can engage, is formed in an outer circumferential surface of the retainer ring.

10. The polishing apparatus according to claim 1, wherein the head motor has a lock function to lock a rotation of the polishing head.

11. The polishing apparatus according to claim 1, wherein a direction in which the second screw thread is tightened is opposite to a direction in which the polishing head is rotated by the head motor when the polishing head is polishing the substrate.

12. The polishing apparatus according to claim 1, further comprising:

a locking structure for the first screw thread and the second screw thread.

13. The polishing apparatus according to claim 12, wherein the locking structure is a lock ring which presses the retainer ring against the drive ring.

14. The polishing apparatus according to claim 12, wherein the locking structure is a lock screw which restrains the rotation of the retainer ring relative to the drive ring.

15. The polishing apparatus according to claim 12, wherein the locking structure includes a pin which is vertically movably supported by the drive ring, and the retainer ring has a hole into which a distal end of the pin can be inserted.

16. The polishing apparatus according to claim 15, wherein the locking structure further includes a camshaft which is rotatably supported by the drive ring, and the camshaft has a cam portion and an exposed end, the cam portion being in engagement with the pin.

17. The polishing apparatus according to claim 1, further comprising:

a looseness detector for detecting a looseness of the second screw thread relative to the first screw thread.

18. The polishing apparatus according to claim 17, wherein the looseness detector is a mark detector which detects a relative position of a first mark formed on the drive ring and a second mark formed on the retainer ring.

19. The polishing apparatus according to claim 17, wherein the looseness detector is a load cell which is sandwiched between the drive ring and the retainer ring.

20. A polishing head comprising:

a head body having a substrate contact surface;

a drive ring coupled to the head body; and

a retainer ring surrounding the substrate contact surface and coupled to the drive ring,

wherein a first screw thread is formed on the drive ring,

a second screw thread, which engages with the first screw thread, is formed on the retainer ring, and

the second screw thread extends in a circumferential direction of the retainer ring; and wherein:

the drive ring includes an annular drive ring body and an annular protrusion which protrudes downwardly from a lower surface of the annular drive ring body;

an annular recess, which houses the annular protrusion therein, is formed in an upper surface of the retainer ring; and

the first screw thread is formed on a side surface of the annular protrusion, and the second screw thread is formed on a side surface of the annular recess.

21. The polishing head according to claim 20, wherein the annular protrusion is constituted by at least a part of a screw ring secured to the annular drive ring body.

22. The polishing head according to claim 20, wherein a lower surface of the annular drive ring body is in contact with an upper surface of the retainer ring.

23. The polishing head according to claim 20, wherein:

the retainer ring includes an annular retainer ring body and a recess ring, the annular recess and the second screw thread being formed in the recess ring; and

the recess ring has a higher strength than the annular retainer ring body.

24. A polishing head comprising:

a head body having a substrate contact surface;

a drive ring coupled to the head body; and

a retainer ring surrounding the substrate contact surface and coupled to the drive ring,

wherein a first screw thread is formed on the drive ring,

a second screw thread, which engages with the first screw thread, is formed on the retainer ring, and

the second screw thread extends in a circumferential direction of the retainer ring; and wherein:

the retainer ring includes an annular retainer ring body and an annular protrusion which protrudes upwardly from an upper surface of the annular retainer ring body;

an annular recess, which houses the annular protrusion therein, is formed in a lower surface of the drive ring; and

the first screw thread is formed on a side surface of the annular recess, and the second screw thread is formed on a side surface of the annular protrusion.

25. The polishing head according to claim 24, wherein the annular protrusion is constituted by at least a part of a screw ring secured to the annular retainer ring body.

26. The polishing head according to claim 24, wherein an upper surface of the annular retainer ring body is in contact with a lower surface of the drive ring.

27. The polishing head according to claim 24, wherein seal rings, which seal a gap between the drive ring and the retainer ring, are disposed inside and outside the first screw thread and the second screw thread, respectively.

28. A retainer ring for use in a polishing head which includes a head body having a substrate contact surface and a drive ring coupled to the head body, the retainer ring comprising:

a second screw thread which can engage with a first screw thread formed on the drive ring, the second screw thread extending in a circumferential direction of the retainer ring, wherein an annular recess is formed in an upper surface of the retainer ring, and the second screw thread is formed on a side surface of the annular recess.

29. The retainer ring for use in a polishing head which includes a head body having a substrate contact surface and a drive ring coupled to the head body, the retainer ring comprising:

a second screw thread which can engage with a first screw thread formed on the drive ring, the second screw thread extending in a circumferential direction of the retainer ring;

an annular retainer ring body; and

an annular protrusion which protrudes upwardly from an upper surface of the annular retainer ring body, the second screw thread being formed on a side surface of the annular protrusion.