CLAIMS

1. A liner assembly, comprising:

a grounded liner ring, in which a plurality of shielding units are disposed at intervals along a circumferential direction of the liner ring, the plurality of shielding units being gaps which are formed between and penetrate an inner circumferential surface of the liner ring and an outer circumferential surface of the liner ring, and the gaps comprising a plurality of first passages disposed at intervals in a direction from the inner circumferential surface toward the outer circumferential surface and a plurality of second passages each communicating two adjacent first passages; orthographic projections of respective two first passages, which are adjacent to each other, on the inner circumferential surface of the liner ring are separated from each other; and the gaps constitute a labyrinthine structure, so as to protect a sidewall of a reaction chamber.

2. The liner assembly of claim 1, wherein the liner ring comprises at least two nesting sub-rings having different inner diameters, each of the sub-rings being grounded; with regard to the gaps, each first passage is a radial through hole correspondingly disposed in a respective sub-ring, and each second passage is an annular gap correspondingly disposed between respective two sub-rings adjacent to each other.

3. The liner assembly of claim 2, wherein a depth to width ratio of each gap satisfies:

$B/A+C/D>5$

where A is a width of the radial through hole in a circumferential direction of the sub-ring; B is a radial thickness of the sub-ring; C is a center distance between respective two radial through holes adjacent to each other in the same sub-ring; and D is a radial thickness of the annular gap.

4. The liner assembly of claim 2, wherein a center distance between respective two radial through holes adjacent to each other in the same sub-ring is greater than or equal to 2mm.

5. The liner assembly of claim 2, wherein a radial thickness of the sub-ring is less than or equal to 5mm.

6. The liner assembly of claim 2, wherein a radial thickness of the annular gap is less than 10mm.

7. The liner assembly of claim 2, wherein a width of the radial through hole in a circumferential direction of the sub-ring is in a range of 0.5mm to 10mm.

8. The liner assembly of any one of claims 1 to 7, wherein the number of the gaps is several tens.

9. The liner assembly of claim 8, wherein the number of the gaps is greater than or equal to 60.

10. The liner assembly of claim 2, wherein, between respective two sub-rings adjacent to each other, each radial through hole in one sub-ring corresponds to an intermediate position between two radial through holes in the other sub-ring, the two radial through holes in the other sub-ring being adjacent to the radial through hole in the one sub-ring.

11. The liner assembly of claim 2, wherein each radial through hole extends in an axial direction of the sub-ring.

12. The liner assembly of claim 11, wherein each radial through hole penetrates through the sub-ring in the axial direction of the sub-ring.

13. A reaction chamber comprising a chamber body, further comprising:
a base disposed in the chamber body for carrying a workpiece to be processed;
a target disposed above the base and in the chamber body; and
the liner assembly of any one of claims 1 to12, which is disposed at and surrounds an inner side of a sidewall of the chamber body.

14. The reaction chamber of claim 13, further comprising:
a coil wound along an outer side of the sidewall of the chamber body; and
a radio frequency power supply electrically connected to the coil.

15. The reaction chamber of claim 14, wherein a length of each gap in an axial direction

of the liner ring is greater than an axial length of the coil, and an orthographic projection of the coil on the outer circumferential surface of the liner ring is located between two ends of the gap in the axial direction of the liner ring.

16. A semiconductor processing apparatus, comprising the reaction chamber of any one of claims 13 to 15.