

What is claimed is:

1. A polishing-surface cleaning apparatus for cleaning a polishing surface with a cleaning fluid, comprising:

- 5 an arm having a fluid passage;
 a nozzle communicating with the fluid passage; and
 a weld material securing the nozzle to the arm, the weld material filling a gap between a bottom surface of the arm and an edge of a front-end surface of the nozzle,
 wherein the bottom surface of the arm, a bottom surface of the weld material, and the
10 front-end surface of the nozzle lie in the same plane, and
 at least the weld material is covered with a water-repellent material.

2. The polishing-surface cleaning apparatus according to claim 1, wherein the bottom surface of the arm, the bottom surface of the weld material, and the edge of the front-end surface
15 of the nozzle lie in the same plane.

3. A polishing-surface cleaning apparatus for cleaning a polishing surface with a cleaning fluid, comprising:

- 20 an arm having a fluid passage;
 a nozzle communicating with the fluid passage; and
 a weld material securing the nozzle to the arm, the weld material filling a gap between a bottom surface of the arm and an edge of a front-end surface of the nozzle,
 wherein the bottom surface of the arm, a bottom surface of the weld material, and the front-end surface of the nozzle lie in the same plane, and
25 a surface roughness Ra of the bottom surface of the arm, a bottom surface of the weld material, and the front-end surface of the nozzle is less than 3.2 μm .

4. The polishing-surface cleaning apparatus according to claim 1 or 2, wherein a projecting portion is formed on the front-end surface of the nozzle, and a fluid outlet is formed in
30 the projecting portion.

5. The polishing-surface cleaning apparatus according to claim 4, wherein the projecting portion of the nozzle projects from the bottom surface of the arm by 0.1 mm to 0.2 mm.

35 6. The polishing-surface cleaning apparatus according to any one of claims 1

through 5, wherein the bottom surface of the arm, the front-end surface of the nozzle, and the bottom surface of the weld material are constituted by flat surfaces.

5 7. The polishing-surface cleaning apparatus according to any one of claims 1 through 6, wherein at least one of the nozzle and the arm is made of water-repellent material.

8. The polishing-surface cleaning apparatus according to any one of claims 1 through 7, wherein at least one of the front-end surface of the nozzle and the bottom surface of the arm is covered with water-repellent material.

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9. A polishing apparatus comprising:

a polishing table for supporting a polishing pad having a polishing surface;

a polishing head configured to press a substrate against the polishing surface; and

a polishing-surface cleaning apparatus according to any one of claims 1 through 8.

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10. A method of manufacturing a polishing-surface cleaning apparatus for cleaning a polishing surface with a cleaning fluid, comprising:

inserting a nozzle into a recess formed in a bottom surface of an arm;

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welding the nozzle to the arm, thereby filling a gap between the bottom surface of the arm and an edge of a front-end surface of the nozzle with a weld material;

after welding the nozzle to the arm, cutting the bottom surface of the arm, a bottom surface of the weld material, and the front-end surface of the nozzle until the bottom surface of the arm, the bottom surface of the weld material, and the front-end surface of the nozzle lie in the same plane; and

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covering at least the weld material with a water-repellent material.

11. A method of manufacturing a polishing-surface cleaning apparatus for cleaning a polishing surface with a cleaning fluid, comprising:

inserting a nozzle into a recess formed in a bottom surface of an arm;

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welding the nozzle to the arm, thereby filling a gap between the bottom surface of the arm and an edge of a front-end surface of the nozzle with a weld material; and after

welding the nozzle to the arm, cutting the bottom surface of the arm, a bottom surface of the weld material, and the front-end surface of the nozzle until the bottom surface of the arm, the bottom surface of the weld material, and the front-end surface of the nozzle lie in the same plane and until a surface roughness Ra of the bottom surface of the arm, the bottom surface of the weld material, and the front-end surface of the nozzle becomes less than 3.2 μm .

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12. The method of manufacturing the polishing-surface cleaning apparatus according to claim 10 or 11, wherein said cutting the front-end surface of the nozzle comprises cutting a region of the front-end surface which includes the edge of the front-end surface of the nozzle and does not include a fluid outlet of the nozzle.

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13. The method of manufacturing the polishing-surface cleaning apparatus according to any one of claims 10 through 12, wherein said welding the nozzle to the arm comprises welding the nozzle to the arm by a groove welding.