WHAT IS CLAIMED IS:

1. A temperature adjusting device for adjusting temperature of a rotating polishing pad, comprising:

a heat conductor that can contact with a top face of the polishing pad;

an arm for holding the heat conductor on or above the polishing pad, the arm comprising an arm base part and an arm tip part;

at least one upstream-side column members formed to stand on a top face of the heat conductor, the at least one upstream-side column members arranged at a position at an upstream side of rotation of the polishing pad;

at least one downstream-side column members formed to stand on the top face of the heat conductor, the at least one downstream-side column members arranged at a position at a downstream side of rotation of the polishing pad; and

overhung members extending, from the at least one upstream-side column members and the at least one downstream-side column members, in directions that are parallel to the top face of the heat conductor, wherein the overhung members can contact with a top face of the arm tip part.

2. The temperature adjusting device according to Claim 1, wherein, when the heat conductor is in contact with the polishing pad, the overhung members are separated from the top face of the arm tip part.

3. The temperature adjusting device according to Claim 2, wherein, when the top face of the arm tip part is in contact

with the overhung members, the heat conductor is separated from the polishing pad.

4. The temperature adjusting device according to Claim 1, wherein

the arm tip part comprises one or more guide parts,

the at least one upstream-side column members are a pair of upstream-side column members,

each of the upstream-side column members is positioned on an opposite side relative to the arm tip part,

the at least one downstream-side column members are a pair of downstream-side column members,

each of the downstream-side column members is positioned on an opposite side relative to the arm tip part,

the upstream-side column members are contactable with one of a first side face and a second side face of a guide part of the one or more guide parts,

the downstream-side column members are contactable with the other of the first side face and the second side face of a guide part of the one or more guide parts,

the first side face is a face that is directed to the upstream side of the rotation, and

the second side face is a face that is directed to the downstream side of the rotation.

5. The temperature adjusting device according to Claim 4, wherein

one of the upstream-side column members and one of the downstream-side column members are contactable with a third side face of the arm tip part,

the other of the upstream-side column members and the other of the downstream-side column members are contactable with a fourth side face of the arm tip part,

the third side face is a face that is directed to an inner periphery side in a radial direction in the polishing pad, and

the fourth side face is a face that is directed to an outer periphery side in the radial direction in the polishing pad.

6. The temperature adjusting device according to Claim 4, wherein the upstream-side column member and the downstream-side column member regulate relative movement between the heat conductor and the arm in a direction parallel to the top face of the heat conductor.

7. The temperature adjusting device according to Claim 1, wherein the top face of the arm tip part comprises an elastic material.

8. The temperature adjusting device according to Claim 4, wherein the guide parts of the arm tip part comprise an elastic material.

9. The temperature adjusting device according to Claim 1, wherein the overhung member extends in a radial direction in the polishing pad.

10. The temperature adjusting device according to Claim 1, wherein, when the heat conductor is in contact with the polishing pad, a size of a space in a height direction between the overhung member and the top face of the arm tip part at the upstream-side column member is different from a size of a

space in the height direction between the overhung member and the top face of the arm tip part at the downstream-side column member.

11. The temperature adjusting device according to Claim 10, wherein, when the heat conductor is in contact with the polishing pad, the size of the space in the height direction between the overhung member and the top face of the arm tip part at the upstream-side column member is smaller than the size of the space in the height direction between the overhung member and the top face of the arm tip part at the downstream-side column member.

12. The temperature adjusting device according to Claim 11, wherein a diameter of the upstream-side column member is larger than a diameter of the downstream-side column member.

13. The temperature adjusting device according to Claim 1, wherein the at least one upstream-side column members and the at least one downstream-side column members are positioned around the arm.

14. The temperature adjusting device according to Claim 1, wherein the at least one upstream-side column members and the at least one downstream-side column members are positioned within through holes formed in the arm.

15. The temperature adjusting device according to Claim 1, further comprising a movable mechanism for moving the heat conductor upward and downward.

16. The temperature adjusting device according to Claim 15, wherein the movable mechanism can move the heat conductor in a horizontal direction.

17. A polishing device comprising:

a polishing pad,

a holding mechanism for holding a to-be-polished object on the polishing pad, and

the temperature adjusting device according to Claim 1.