What is claimed is:

1. A cleaning apparatus for a heat exchanger to regulate a surface temperature of a polishing pad, comprising:

a moving mechanism configured to move the heat exchanger between a temperature-regulating position in which the heat exchanger can exchange heat with the polishing pad, and a retreat position in which the heat exchanger is separated from a surface of the polishing pad; and

a cleaning mechanism configured to clean a bottom surface of the heat exchanger moved to the retreat position by use of a cleaning liquid,

wherein the retreat position is located on a side of the polishing pad, ~~and~~

the cleaning mechanism includes at least one cleaning nozzle for ejecting ~~a~~ the cleaning liquid to the bottom surface of the heat exchanger moved to the retreat position, ~~or a cleaning tank in which the bottom surface of the heat exchanger can be immersed~~ and,

the moving mechanism includes:

a pivoting mechanism configured to turn the heat exchanger with respect to the surface of the polishing pad in a vertical direction while pivoting the heat exchanger with respect to the surface of the polishing pad in a horizontal direction; and

an elevating mechanism configured to move the heat exchanger upward and downward with respect to the surface of the polishing pad.

2. A cleaning apparatus for a heat exchange to regulate a surface temperature of a polishing pad, comprising:

a moving mechanism configured to move the heat exchanger between a temperature-regulating position in which the heat exchanger can exchange heat with the polishing pad, and a retreat position in which the heat exchanger is separated from a surface of the polishing pad; and

a cleaning mechanism configured to clean a bottom surface of the heat

exchanger moved to the retreat position by use of a cleaning liquid,

wherein the retreat position is located above the polishing pad, and

the cleaning mechanism includes a cleaning tank in which the bottom surface of the heat exchanger can be immersed into the cleaning liquid.

3. The cleaning apparatus according to claim ~~1~~ 2,

wherein the cleaning mechanism further includes:

a cleaning-liquid supply line coupled to the cleaning tank; and

a cleaning-liquid discharge line coupled to the cleaning tank, and

the cleaning-liquid discharge line is coupled to the lowermost end of the cleaning tank.

4. The cleaning apparatus according to claim ~~1~~ 2,

wherein the cleaning mechanism further includes:

a cleaning-liquid supply line coupled to the cleaning tank;

an overflow tank for receiving the cleaning liquid overflowing from the cleaning tank; and

a cleaning-liquid discharge line coupled to the overflow tank.

5. The cleaning apparatus according to claim ~~1~~ 2,

wherein the cleaning mechanism further includes:

a cleaning-liquid supply line coupled to the cleaning tank; and

a cleaning-liquid discharge line coupled to the cleaning tank,

the cleaning-liquid discharge line has an inlet opened inside of the cleaning tank, and

the inlet is located below an upper end of the cleaning tank.

6. The cleaning apparatus according to claim ~~1~~ 2,

wherein the cleaning mechanism further includes:

a cleaning-liquid supply line coupled to the cleaning tank; and

a cleaning-liquid discharge line coupled to the cleaning tank,

the cleaning-liquid discharge line has an inlet coupled to the lowermost end of the cleaning tank, and an outlet opened to the atmosphere, and

the outlet is located at a position lower than an upper end of the cleaning tank and higher than a lower end of the cleaning tank.

7. The cleaning apparatus according to claim 3, wherein the cleaning-liquid supply line is mounted to a side wall of the cleaning tank such that the cleaning liquid is discharged in a tangential direction of the cleaning tank.

8. The cleaning apparatus according to claim 4, wherein the cleaning mechanism includes a plate member which constitutes a bottom wall of the cleaning tank or is disposed inside of the cleaning tank, and

the plate member has a flow passage coupled to the cleaning-liquid supply line, and a plurality of holes which enables the flow passage to communicate with an inside of the cleaning tank.

~~9. The cleaning apparatus according to claim 1,~~

~~wherein the moving mechanism includes:~~

~~a pivoting mechanism configured to pivot the heat exchanger with respect to the surface of the polishing pad in a horizontal direction; and~~

~~an elevating mechanism configured to move the heat exchanger upward and downward with respect to the surface of the polishing pad.~~

~~10. The cleaning apparatus according to claim 1,~~

~~wherein the moving mechanism includes:~~

~~a pivoting mechanism configured to turn the heat exchanger with respect to the surface of the polishing pad in a vertical direction while pivoting the heat exchanger with respect to the surface of the polishing pad in a horizontal direction; and~~

~~an elevating mechanism configured to move the heat exchanger upward and downward with respect to the surface of the polishing pad.~~

~~11~~9. The cleaning apparatus according to claim ~~10~~ 1,

wherein the pivoting mechanism includes;

a shaft coupled to the heat exchanger through an arm;

an actuator configured to rotate the shaft to pivot the arm and the heat exchanger with respect to the surface of the polishing pad;

a cam mechanism configured to convert a rotational movement of the shaft into a turning movement of the heat exchanger, and

the cam mechanism includes:

a cam fixed to the arm; and

a guide plate having a guide surface for guiding the turning movement of the heat exchanger.

~~12. The cleaning apparatus according to claim 1,~~

~~wherein the moving mechanism includes:~~

~~a piston-cylinder mechanism having a piston; and~~

~~a link mechanism configured to convert movement of the piston into a vertically pivoting movement of the arm to which the heat exchanger is coupled.~~

~~13. The cleaning apparatus according to claim 1, wherein the cleaning mechanism includes a cleaning member which contacts the bottom surface of the heat exchanger during moving of the heat exchanger from the temperature-regulating position to the retreat position.~~

~~14. The cleaning apparatus according to claim 13, wherein the cleaning member is a cleaning brush, and~~

~~the cleaning brush is disposed in a cutout formed in an upper end of a cylindrical cup which surrounds the polishing pad.~~

~~15. The cleaning apparatus according to claim 13, wherein the cleaning member is a cleaning brush, and~~

~~the cleaning mechanism further includes a cleaning plate which contacts a surface of the cleaning brush to remove dirt attached to the cleaning brush.~~

~~16~~10. ~~The~~ A cleaning apparatus ~~according to claim 1~~ for a heat exchanger to regulate a surface temperature of a polishing pad, comprising:

a moving mechanism configured to move the heat exchanger between a temperature-regulating position in which the heat exchanger can exchange heat with the polishing pad, and a retreat position in which the heat exchanger is separated from a surface of the polishing pad; and

a cleaning mechanism configured to clean a bottom surface of the heat exchanger moved to the retreat position,

wherein the retreat position is located on a side of the polishing pad,

~~wherein~~ the cleaning mechanism is a cleaning brush mechanism configured to contact the bottom surface of the heat exchanger lying in the retreat position, and

the cleaning brush mechanism includes:

a cleaning brush which contacts the bottom surface of the heat exchanger;

a brush stand in which the cleaning brush is disposed;

a cleaning block having an opening configured to eject the cleaning liquid to the bottom surface of the heat exchanger; and

a rotational shaft to which the brush stand and the cleaning block are coupled, and which are rotated by utilizing a reaction force generated when the cleaning liquid is ejected from the cleaning block.

~~17. The cleaning apparatus according to claim 1, wherein the cleaning member is a cleaning pad having a brush which contact the bottom surface of the heat exchanger, and~~

~~the cleaning pad is configured to be rotatable around its axis and revolvable with respect to the bottom surface of the heat exchanger.~~

~~18. The cleaning apparatus according to claim 17,~~

~~wherein the cleaning pad includes:~~

~~an imaging device which is disposed in a recess formed in an upper surface of the cleaning pad, and can acquire an image of the bottom surface of the heat exchanger; and~~

~~a transparent window for closing an opening of the recess.~~

~~19~~11. A polishing apparatus comprising:

a polishing table for supporting a polishing pad;

a polishing head configured to press a substrate against a surface of the polishing pad to polish the substrate;

a heat exchanger configured to regulate a surface temperature of the polishing pad; and

a cleaning apparatus for cleaning the heat exchanger,

wherein the cleaning apparatus comprises a cleaning apparatus according to claim 1.