What is claimed is:

1. A substrate cleaning apparatus comprising:

a substrate rotating part that rotates a substrate;

an edge cleaning member for cleaning an edge part of the substrate;

an edge rotating part that rotates the edge cleaning member around an edge rotary shaft that extends in a direction orthogonal to a substrate rotary shaft;

a moving part that moves a position of the edge cleaning member with respect to the edge part of the substrate; and

a control part that controls the moving part to move the position of the edge cleaning member with respect to the edge part of the substrate, and causes the edge cleaning member to clean a one-side edge area including a face on one side, a side face area including a side face, and an another-side edge area including a face on another side in the edge part of the substrate,

wherein the control part controls in such a way that the edge cleaning member cleans the one-side edge area during a predetermined time period, then the edge cleaning member cleans the side face area during a predetermined time period, and then the edge cleaning member cleans the another-side edge area during a predetermined time period; or the control part controls in such a way that the edge cleaning member cleans the another-side edge area during a

predetermined time period, then the edge cleaning member cleans the side face area during a predetermined time period, and then the edge cleaning member cleans the one-side edge area during a predetermined time period.

2. The substrate cleaning apparatus, according to claim 1, further comprising a detecting part that detects a force applied to the edge cleaning member, wherein

the control part controls the moving part based on a detection result by the detecting part in such a way that a force to be applied to the edge cleaning member at a time when the edge cleaning member cleans the one-side edge area or the another-side edge area is different from a force to be applied to the edge cleaning member at a time when the edge cleaning member cleans the side face area.

3. The substrate cleaning apparatus according to claim 2, wherein

the control part controls in such a way that the force to be applied to the edge cleaning member at the time when the edge cleaning member cleans the one-side edge area is substantially the same as the force to be applied to the edge cleaning member at the time when the edge cleaning member cleans the another-side edge area.

4. The substrate cleaning apparatus according to claim 2, wherein

the control part controls in such a way that the force to be applied to the edge cleaning member at the time when the edge cleaning member cleans the one-side edge area and the force to be applied to the edge cleaning member at the time when the edge cleaning member cleans the another-side edge area are greater than the force to be applied to the edge cleaning member at the time when the edge cleaning member cleans the side face area.

5. A substrate cleaning apparatus according to claim 1 or 2 further comprising a substrate cleaning liquid supplying part that supplies cleaning liquid to the substrate, wherein the control part controls to separate the edge cleaning member from the edge part of the substrate, and then stop a rotation of the substrate by the substrate rotating part.

6. The substrate cleaning apparatus according to claim 5, wherein

the control part controls to stop a supply of cleaning liquid from the substrate cleaning liquid supplying part after the edge cleaning member is separated from the edge part of the substrate and before the rotation of the substrate by the substrate rotating part is stopped.

7. The substrate cleaning apparatus according to claim 5, wherein

the control part controls to stop the rotation of the edge cleaning member by the edge rotating part before the edge cleaning member is separated from the edge part of the substrate.

8. The substrate cleaning apparatus according to claim 1, wherein

the substrate is a wafer, and

the edge cleaning member has a shape in which a side face is curved in accordance with a shape of the wafer.

9. The substrate cleaning apparatus, according to claim 1, further comprising an edge cleaning liquid supplying part that supplies cleaning liquid to a contact portion between the edge cleaning member and the substrate in a direction toward the edge part from a center part of the substrate.

10. The substrate cleaning apparatus according to claim 1, wherein

a bulkhead is provided on a center side of the substrate with respect to the edge cleaning member.

11. The substrate cleaning apparatus, according to claim 10, further comprising a cover member having the bulkhead, wherein

the cover member covers the edge cleaning member.

12. The substrate cleaning apparatus, according to claim 11, further comprising an edge cleaning liquid supplying part that supplies cleaning liquid to a contact portion between the edge cleaning member and the substrate in a direction toward the edge part from a center part of the substrate, wherein

an attachment part that is used to attach the edge cleaning liquid supplying part to the cover member.

13. The substrate cleaning apparatus, according to claim 11, further comprising an edge cleaning liquid supplying part that supplies cleaning liquid to a contact portion between the edge cleaning member and the substrate in a direction toward the edge part from a center part of the substrate, wherein

a discharge outlet that discharges cleaning liquid supplied from the edge cleaning liquid supplying part is provided at the cover member.

14. The substrate cleaning apparatus, according to claim 1, further comprising an edge cleaning mechanism that cleans the edge cleaning member.

15. The substrate cleaning apparatus according to claim 14, wherein

the edge cleaning mechanism has any one of a contact

member that can abut onto the edge cleaning member, a cleaning liquid supplying member that supplies cleaning liquid to the edge cleaning member, and a suction member that sucks the edge cleaning member.

16. The substrate cleaning apparatus according to claim 14, wherein

the control part controls in such a way that the edge cleaning mechanism cleans the edge cleaning member during a time period in which the edge cleaning member does not clean the edge part of the substrate.

17. The substrate cleaning apparatus according to claim 14, wherein

the control part controls in such a way that the edge cleaning member cleans the edge part of the substrate at least partially overlaps a time period during which the edge cleaning mechanism cleans the edge cleaning member.

18. The substrate cleaning apparatus, according to claim 1, comprising a pen unit that is rotated by the edge rotating part, wherein

the edge cleaning member is provided at a distal end of the pen unit.

19. The substrate cleaning apparatus, according to claim 1, comprising a substrate cleaning member that abuts onto

and cleans a face on one side or a face on another side of the substrate, wherein

the control part controls in such a way that a time period during which the substrate cleaning member cleans the face on the one side or the face on the another side of the substrate at least partially overlaps a time period during which the edge cleaning member cleans the edge part of the substrate.

20. A cleaning method of substrate comprising:

a step of rotating a substrate by a substrate rotating part; and

a step of cleaning an edge part of the substrate by an edge cleaning member rotated around an edge rotary shaft that extends in a direction orthogonal to a substrate rotary shaft, wherein a position of the edge cleaning member with respect to the edge part of the substrate is moved by a moving part, and a one-side edge area including a face on one side, a side face area including a side face, and an another-side edge area including a face on another side in the edge part of the substrate is cleaned by the edge cleaning member and

wherein the edge cleaning member cleans the one-side edge area during a predetermined time period, then the edge cleaning member cleans the side face area during a predetermined time period, and then the edge cleaning member cleans the another-side edge area during a

predetermined time period; or the edge cleaning member cleans the another-side edge area during a predetermined time period, then the edge cleaning member cleans the side face area during a predetermined time period, and then the edge cleaning member cleans the one-side edge area during a predetermined time period.

21. A cleaning method of substrate according to claim 20 further comprising a step of supplying cleaning liquid to the substrate by a substrate cleaning liquid supplying part,

wherein the edge cleaning member is separated from the edge part of the substrate, and then a rotation of the substrate by the substrate rotating part is stopped.