WHAT IS CLAIMED IS:

1. A polishing apparatus which performs polishing of an object to be polished using a polishing pad having a polishing surface, the polishing apparatus comprising:

a polishing table configured to be rotatable, and to support the polishing pad;

a holder configured to hold the object to be polished, and to press the object to be polished against the polishing pad;

a polishing liquid supplying portion configured to supply a polishing liquid to the polishing surface; and

a polishing liquid removing portion configured to remove the polishing liquid from the polishing surface, wherein

the polishing liquid removing portion includes a suction portion configured to suck the polishing liquid and a dam portion which comes into contact with the polishing liquid on the polishing surface thus preventing the polishing liquid from moving in a rotating direction of the polishing table, and

the dam portion includes a rounded or chamfered portion which comes into contact with the polishing surface and the dam portion is disposed rearward of the suction portion in the rotating direction, and is integrally formed with the suction portion.

2. A polishing apparatus which performs polishing of an object to be polished using a polishing pad having a polishing surface, the polishing apparatus comprising:

a polishing table configured to be rotatable, and to support the polishing pad;

a holder configured to hold the object to be polished, and to press the object to be polished against the polishing pad;

a polishing liquid supplying portion configured to supply a polishing liquid to the polishing surface; and

a polishing liquid removing portion configured to remove the polishing liquid from the polishing surface, wherein

the polishing liquid removing portion includes a suction portion having a slit and configured to suck the polishing liquid through the slit and a dam portion which comes into contact with the polishing liquid on the polishing surface thus preventing the polishing liquid from moving in a rotating direction of the polishing table, and

in a longitudinal direction of the polishing liquid removing portion, the slit is formed with a length shorter than a length of the dam portion and longer than a diameter of the object held by the holder.

3. The polishing apparatus according to claim 1 or 2 further comprising a temperature adjuster configured to adjust a temperature of the polishing surface, the temperature adjuster includes at least one of an injector which is configured to spray a gas to the polishing surface or a heat exchanger in which a fluid flows.

4. The polishing apparatus according to claim 2, wherein

the dam portion is disposed rearward of the suction portion in the rotating direction, and is integrally formed with the suction portion.

5. The polishing apparatus according to claim 3 further comprising a temperature measuring portion configured to measure a temperature of the polishing surface, wherein

the temperature adjuster is configured to adjust the temperature of the polishing surface such that the temperature measured by the temperature measuring portion reaches a target temperature.

6. A polishing method where a polishing table on which a polishing pad is mounted is rotated, and an object to be polished is pressed against the polishing pad so as to polish the object to be polished, the polishing method comprising:

supplying a polishing liquid to a polishing surface of the polishing pad; and

removing the polishing liquid from the polishing surface with a polishing liquid

removing portion, wherein

the polishing liquid removing portion includes a suction portion having a slit and configured to suck the polishing liquid through the slit and a dam portion which comes into contact with the polishing liquid on the polishing surface thus preventing the polishing liquid from moving in a rotating direction of the polishing table, and

in a longitudinal direction of the polishing liquid removing portion, the slit is formed with a length shorter than a length of the dam portion and longer than a diameter of the object held by the holder.