What is claimed is:

1. A polishing apparatus, comprising:

a polishing table configured to support a polishing pad;

a top ring configured to press a substrate against the polishing pad; and

a liquid supply mechanism configured to supply a liquid onto the polishing pad,

wherein the liquid supply mechanism comprises:

a nozzle arm configured to be movable in a radial direction of the polishing table; ~~and~~

a liquid ejection nozzle attached to the nozzle arm, the liquid ejection nozzle being a fan-shaped nozzle having a liquid throttle surface, the liquid throttle surface being formed on an inner surface of the liquid ejection nozzle and having a tapered shape;

a slurry nozzle attached to the nozzle arm, the slurry nozzle being disposed above a center of the polishing pad when the nozzle arm is in a processing position, the liquid ejection nozzle being disposed at a region between the center of the polishing pad and an outer peripheral portion of the polishing pad when the nozzle arm is in the processing position;

a nozzle cleaning device disposed outside the polishing pad,

wherein the nozzle cleaning device comprises:

a first cleaning nozzle configured to clean the slurry nozzle; and

a second cleaning nozzle configured to clean the liquid ejection nozzle.

~~2. The polishing apparatus according to claim 1, wherein:~~

~~the liquid supply mechanism comprises a slurry nozzle attached to the nozzle arm;~~

~~the slurry nozzle is disposed above a center of the polishing pad when the nozzle arm is in a processing position; and~~

~~the liquid ejection nozzle is disposed at a region between the center of the polishing pad and an outer peripheral portion of the polishing pad when the nozzle arm is in the processing positon.~~

~~3. The polishing apparatus according to claim 2, wherein the liquid supply mechanism comprises a nozzle cleaning device disposed outside the polishing pad, and~~

~~wherein the nozzle cleaning device comprises:~~

~~a first cleaning nozzle configured to clean the slurry nozzle; and~~

~~a second cleaning nozzle configured to clean the liquid ejection nozzle.~~

~~4~~2. The polishing apparatus according to claim 1, wherein the liquid supply mechanism comprises:

a slurry line coupled to the liquid ejection nozzle and flowing a polishing liquid;

a flushing line coupled to the liquid ejection nozzle and flowing a flushing liquid for cleaning the liquid ejection nozzle.

3~~5~~. The polishing apparatus according to claim 1, further comprising an atomizer configured to eject a cleaning fluid onto the polishing pad,

wherein the liquid supply mechanism comprises a dressing liquid supply device attached to the atomizer.

4~~6~~. The polishing apparatus according to claim 1, wherein:

the liquid supply mechanism comprises a slurry nozzle attached to the nozzle arm; and

the slurry nozzle and the liquid ejection nozzle are disposed above a center of the polishing pad when the nozzle arm is in a processing position.

~~7. A polishing apparatus, comprising:~~

~~a polishing table configured to support a polishing pad;~~

~~a top ring configured to press a substrate against the polishing pad; and~~

~~a liquid supply mechanism configured to supply a liquid onto the polishing pad,~~

~~wherein the liquid supply mechanism comprises a nozzle abnormality detection device configured to detect an abnormality of a liquid ejection nozzle attached to a nozzle arm, the nozzle arm being movable in a radial direction of the polishing table, and~~

~~wherein the nozzle abnormality detection device determines the abnormality of the liquid ejection nozzle based on a degree of opening of a flow rate adjustment valve, the flow rate adjustment valve being configured to adjust a size of a flow path of a liquid supply line coupled to the liquid ejection nozzle.~~

~~8. The polishing apparatus according to claim 7, wherein the nozzle abnormality detection device is configured to:~~

~~determine an abnormal clogging of the liquid ejection nozzle under a condition that the degree of opening of the flow rate adjustment valve reaches a predetermined upper limit side threshold value; and~~

~~determine an abnormal wear of the liquid ejection nozzle under a condition that the degree of opening of the flow rate adjustment valve reaches a predetermined lower limit side threshold value.~~

~~9. The polishing apparatus according to claim 8, wherein:~~

~~the upper limit side threshold value has a first upper limit side threshold value and a second upper limit side threshold value larger than the first upper limit side threshold value; and~~

~~the nozzle abnormality detection device is configured to issue one of a minor failure alarm for recommending an exchange of the liquid ejection nozzle and a major~~

~~failure alarm for stopping an operation of the polishing apparatus based on the first upper-limit-side threshold value and the second upper-limit-side threshold value.~~

~~10. The polishing apparatus according to claim 8, wherein:~~

~~the lower-limit-side threshold value has a first lower-limit-side threshold value and a second lower-limit-side threshold value lower than the first lower-limit-side threshold value; and~~

~~the nozzle abnormality detection device is configured to issue one of a minor failure alarm for recommending an exchange of the liquid ejection nozzle and a major failure alarm for stopping an operation of the polishing apparatus based on the first lower-limit-side threshold value and the second lower-limit-side threshold value.~~