[Document Name] Claims

[Claim 1]

A gas floated workpiece supporting apparatus, comprising

a gas upward ejecting section ejecting gas upward, and a gas downward ejecting section located at an upper side from the gas upward ejecting section and ejecting gas downward,

wherein the gas downward ejecting section is installed at a position where the gas downward ejecting section ejects the gas downward from above a plate-shaped workpiece and applies pressure, to the plate-shaped workpiece that is floated and supported by the gas ejected from the gas upward ejecting section, except for a working area for the plate-shaped workpiece and in accordance with part of a region where the gas upward ejector is installed, with the plate-shaped workpiece sandwiched between the gas downward ejector and the gas upward ejector on both sides of the working area for the plate-shaped workpiece except the working area, and

a part of the gas upward ejector is installed at a position beside and below the working area for the plate-shaped workpiece, blowing out the gas upward.

[Claim 2]

The gas floated workpiece supporting apparatus according to claim 1, further comprising:

a position adjusting section that adjusts blowout positions partially or entirely with respect to one or both of a plurality of gas upward ejection holes provided in the gas upward ejecting

section and a plurality of gas downward ejection holes provided in the gas downward ejecting section.

[Claim 3]

The gas floated workpiece supporting apparatus according to claim 2,

wherein the position adjusting section is capable of position adjustment individually for each of ejection holes positions of which are adjustable, or every predetermined number of ejection holes.

[Claim 4]

The gas floated workpiece supporting apparatus according to any one of claims 1 to 3, further comprising:

a gas flow adjusting section that adjusts a gas blowout flow rate and/or pressure, with respect to a plurality of gas upward ejection holes provided in the gas upward ejecting section, and a part or all of a plurality of gas downward ejection holes provided in the gas downward ejecting section.

[Claim 5] The gas floated workpiece supporting apparatus according to claim 4,

wherein the gas flow adjusting section is capable of adjusting a gas blowout flow rate and/or pressure individually for each of ejection holes gas flows of which are adjustable, or every predetermined number of ejection holes.

[Claim 6]

The gas floated workpiece supporting apparatus according to claim 2 or 3, further comprising:

a control section that controls an adjustment amount of the position adjusting section at a time of floating and supporting the plate-shaped workpiece.

[Claim 7]

The gas floated workpiece supporting apparatus according to claim 4 or 5, further comprising:

a control section that controls an adjustment amount of the gas flow adjusting section at a time of floating and supporting the plate-shaped workpiece.

[Claim 8]

The gas floated workpiece supporting apparatus according to claim 6 or 7, further comprising:

a detection section that detects a height position of the plate-shaped workpiece,

wherein the control section controls the adjustment amount based on a detection result of the detection section.

[Claim 9]

The gas floated workpiece supporting apparatus according to any one of claims 1 to 8,

wherein some or all of a plurality of downward ejection holes provided in the gas downward ejecting section are overlaid on a plurality of upward ejection holes provided in the gas upward ejecting section, in mutual blowout directions.

[Claim 10]

A noncontact workpiece support method,

wherein gas is ejected to a plate-shaped workpiece from above and below the plate-shaped workpiece respectively, and the plate-shaped workpiece is floated and supported in a noncontact manner while the plate-shaped workpiece is sandwiched by the gas, and in the gas ejection from above the plate-shaped workpiece, the gas is ejected from an area except for a working area for the plate-shaped workpiece and in accordance with part of a region where the gas is ejected upward from below the workpiece, and in the gas ejection from below the plate-shaped workpiece, the gas is ejected upward from a region including an area below the working area for the plate-shaped workpeice.

[Claim 11]

The noncontact workpiece support method according to claim 10,

wherein a warp and a curve of the plate-shaped workpiece are corrected to flatten the plate-shaped workpiece, by adjusting one or both of a gap amount of ejection positions of gas to the plate-shaped workpiece, and a flow rate of the gas.