WHAT IS CLAIMED IS:

1. A processing apparatus comprising:

a chuck table that holds a workpiece;

a processing unit that forms a plurality of processed groove in the workpiece held by the chuck table including a latest processed groove;

a processing feed mechanism that relatively moves the chuck table and the processing unit in a processing feed direction that is an X-axis direction;

an indexing feed mechanism that relatively moves the chuck table and the processing unit in an indexing feed direction that is a Y-axis direction perpendicular to the processing feed direction;

an imaging unit that images the workpiece held by the chuck table including an area containing the latest processed groove;

a display unit that displays a captured image of the latest processed groove obtained by imaging, by the imaging unit, the latest processed groove formed through processing the workpiece by the processing unit; and

a control unit comprising a processor,

wherein the control unit includes

a memory that stores a Y-coordinate of the latest processed groove, and

wherein the processor causes a mark that identifies the location of the latest processed groove based on the Y-coordinate to be displayed in a superimposed manner on the captured image displayed on the display unit.

2. The processing apparatus according to claim 1, wherein the processor switches a direction indicated by the mark according to a present imaging position of the imaging unit relative to the Y-coordinate of the latest processed groove.

3. The processing apparatus according to claim 2,

wherein the display unit displays a reference line associated with the imaging unit, wherein the mark is elongated along a longitudinal direction, and wherein when the reference line of the imaging unit is within a predetermined range of the displayed processed groove, the longitudinal direction of the mark is displayed in the X-axis direction.

4. The processing apparatus according to claim 2, wherein the display unit displays a reference line associated with the imaging unit, wherein the mark is elongated along a longitudinal direction, and wherein when the reference line of the imaging unit is outside a predetermined range of the displayed processed groove, the longitudinal direction of the mark is displayed in the Y-axis direction.

5. The processing apparatus according to claim 1, wherein the display unit displays a captured image of a processed groove obtained by imaging, by the imaging unit, the processed groove formed through processing the workpiece by the processing unit on a stop screen when the formation of the processed groove by the processing unit has been suspended.

6. The processing apparatus according to claim 5, further comprising movement buttons to cause the location of the imaging unit to be moved relative to the workpiece.

7. The processing apparatus according to claim 6, wherein the display unit displays a reference line associated with the imaging unit, wherein the mark is elongated along a longitudinal direction, and wherein when the reference line of the imaging unit is within a predetermined range of the displayed processed groove, the longitudinal direction of the mark is displayed in the X-axis direction.

8. The processing apparatus according to claim 6, wherein the display unit displays a reference line associated with the imaging unit, wherein the mark is elongated along a longitudinal direction, and wherein when the reference line of the imaging unit is outside a predetermined range of the

displayed processed groove, the longitudinal direction of the mark is displayed in the Y-axis direction.

9. The processing apparatus according to claim 8, wherein the mark has the shape of an arrow having an arrowhead, and wherein the arrowhead points toward the latest processed groove.

10. A method of processing a workpiece using a processing apparatus comprising a chuck table that holds a workpiece; a processing unit that forms a processed groove in the workpiece held by the chuck table; a processing feed mechanism that relatively moves the chuck table and the processing unit in a processing feed direction that is an X-axis direction; an indexing feed mechanism that relatively moves the chuck table and the processing unit in an indexing feed direction that is a Y-axis direction perpendicular to the processing feed direction; an imaging unit that images the workpiece held by the chuck table; a display unit; a processor; and a memory that stores a Y-coordinate of a latest processed groove, the method comprising:

displaying on the display unit a captured image of the workpiece including an area of the workpiece containing a portion of a latest processed groove obtained by imaging, by the imaging unit, an area of the workpiece containing the latest processed groove formed through processing the workpiece by the processing unit; and

displaying in a superimposed manner on the display unit a mark that indicates the location of the latest processed groove displayed on the display unit.

11. The method according to claim 10, further comprising displaying on the display unit a reference line associated with the imaging unit, wherein the mark is elongated along a longitudinal direction, and

when the reference line of the imaging unit is within a predetermined range of the displayed latest processed groove,

displaying the mark such that the longitudinal direction of the mark is displayed in the X-axis direction.

12. The method according to claim 10, further comprising displaying on the display unit a reference line associated with the imaging unit, wherein the mark is elongated along a longitudinal direction, and

when the reference line of the imaging unit is outside a predetermined range of the displayed latest processed groove, displaying the mark such that the longitudinal direction of the mark is displayed in the Y-axis direction.

13. The method according to claim 10, wherein the act of displaying on the display unit a captured image of the workpiece occurs after the formation of the processed groove by the processing unit has been suspended.

14. The method according to claim 10, further comprising moving the location of the imaging unit relative to the workpiece and thereby changing the area of the workpiece which is displayed on the display unit.

15. The method according to claim 14, further comprising

displaying on the display unit a reference line associated with the imaging unit, wherein the mark is elongated along a longitudinal direction, and

when the reference line of the imaging unit is within a predetermined range of the displayed latest processed groove, displaying the mark such that the longitudinal direction of the mark is displayed in the X-axis direction.

16. The method according to claim 15, further comprising when the reference line of the imaging unit is outside the predetermined range of the displayed latest processed groove, displaying the mark such that the longitudinal direction of the mark is displayed in the Y-axis direction.

17. The method according to claim 16, further comprising switching the orientation of the mark from having the longitudinal direction of the mark being displayed in the X-

axis direction to having longitudinal direction of the mark being displayed in the Y-axis direction when the location of the imaging unit is moved such that the reference line associated with the imaging unit moves from being within the predetermined range to be outside the predetermined range.

18. The method according to claim 17, wherein the mark has the shape of an arrow having an arrowhead and wherein the arrowhead points toward the latest processed groove when the reference line of the imaging unit is outside the predetermined range.

19. The method according to claim 14, further comprising

displaying on the display unit a reference line associated with the imaging unit, wherein the mark is elongated along a longitudinal direction, and

when the reference line of the imaging unit is outside a predetermined range of the displayed latest processed groove, displaying the mark such that the longitudinal direction of the mark is displayed in the Y-axis direction.

20. The method according to claim 10, wherein the mark has the shape of an arrow having an arrowhead and wherein the arrowhead points toward the latest processed groove.