

WHAT IS CLAIMED IS:

1. A cutting apparatus comprising:

a cutting unit having a spindle with a cutting blade mounted thereon and cutting an outer peripheral edge of a wafer to form an annular groove;

a holding section and a plurality of holding portions holding the wafer in a rotatable manner;

a line scan camera having a plurality of light receiving elements arranged in a row along a width direction of the annular groove so as to face the annular groove of the wafer held by the holding portions;

an inspection section forming an image of the annular groove corresponding to an entire circumference of the wafer from a signal output by the line scan camera that captured the annular groove while the holding portions rotate the wafer and detecting a width of the annular groove and a chipping from the formed image; and

a warning section sending warning information in a case in which an inspection result of the inspecting section is out of an allowable range registered in advance,

wherein the plurality of holding portions rotatably hold the wafer while holding the outer peripheral edge of the wafer, and are spaced apart from each other in the circumferential direction of the wafer; and

the line scan camera is spaced apart from the plurality of holding portions in a circumferential direction

of the wafer, and the plurality of light receiving elements are arranged along the width direction of the annular groove and a front surface of the wafer, and the line scan camera is movable back and forth between a capturing position in which some of the light receiving elements face the front surface of the wafer in a direction orthogonal to the front surface and are arranged above the annular groove of the wafer, and a retracted position in which the line scan camera is retracted from a position above the wafer.

2. The cutting apparatus according to claim 1, further comprising

a storage section storing a width of the annular groove and a position of the chipping that are out of the allowable range based on the notch of the wafer.

3. A wafer processing method of cutting an outer peripheral edge of a wafer with a chamfered portion extending from a front surface of the wafer to a back surface of the wafer formed in the outer peripheral edge by using a cutting apparatus according to claim 1 or claim 2, comprising:

a circular shape cutting step of holding the wafer on a holding surface, causing the cutting blade to cut in the outer peripheral edge of the wafer with the holding section being rotated, and forming the annular groove in the outer peripheral edge;

a capturing step of positioning the line scan camera at such a position that the line scan camera faces the annular

groove of the wafer held by the holding portions holding the wafer in a rotatable manner, causing the holding portions to rotate while capturing the wafer, and capturing the entire circumference of the outer peripheral edge of the wafer to thereby obtain a captured image, after the circular shape cutting step is carried out; and

an inspecting step of inspecting the captured image in the capturing step in the inspecting section, and sending warning information in a case in which the inspection result of the inspection section is out of the allowable range registered in advance.

4. The wafer processing method according to claim 3, wherein

a storage section stores a width of the annular groove and a position of the chipping that are out of the allowable range based on the notch of the wafer, after the inspecting step.