WHAT IS CLAIMED IS:

1. An automatic blade changer adapted to be coupled to a cutting apparatus including a chuck table having a holding surface for holding a workpiece thereon, a cutting means having a cutting blade mounted thereon with a mounting nut, for cutting the workpiece held on the chuck table, an X-axis feeding means for processing-feeding the chuck table along an X-axis, a Y-axis feeding means for indexing-feeding the cutting means along a Y-axis perpendicular to the X-axis, and a Z-axis feeding means for incising-feeding the cutting means along a Z-axis perpendicular to the X-axis and the Y-axis, the holding surface being defined by the X-axis and the Y-axis, the automatic blade changer comprising:

a cutting blade storing means for storing a plurality of cutting blades therein;

an unloading and loading means for unloading cutting blades from the cutting blade storing means, delivering the unloaded cutting blades to the cutting means, and loading the cutting blades removed from the cutting means to the cutting blade storing means; and

a reading means disposed adjacent to a working position in which the unloading and loading means works on the cutting blade storing means, for reading an

indicator marked on a side surface of each of the cutting blades stored in the cutting blade storing means and indicating the kind of each of the cutting blades,

wherein the reading means includes a camera, a mirror, and a positioning unit for positioning the mirror selectively in a working position and a retracted position, and the reading means reads the indicator from an image of the side surface of each of the cutting blades captured by the camera via the mirror positioned in the working position.

2. The automatic blade changer according to claim 1, wherein the reading means includes

a rotating unit for rotating the mirror about an optical axis of the camera,

the mirror having a reflecting surface inclined 45° to the optical axis of the camera,

wherein the reflecting surface of the mirror faces at an angle of 45° a first side surface of one of the cutting blades stored in the cutting blade storing means and a second side surface, opposite the first side surface, of one of the cutting blades unloaded from the cutting blade storing means by the unloading and loading means, and

the reading means reads the indicator marked on

the first side surface or the second side surface of each of the cutting blades and indicating the kind of each of the cutting blades from an image of the first side surface or the second side surface captured by the camera via the mirror positioned in the working position.

3. The automatic blade changer according to claim 1, wherein the cutting blade storing means includes

a drive gear having a rotational shaft extending along the Y-axis,

a driven gear that is spaced from the drive gear along the Z-axis and that has a rotational shaft extending along the Y-axis,

an endless track trained around the drive gear and the driven gear, and

a plurality of blade support shafts disposed on the endless track at predetermined spaced intervals and supporting the respective cutting blades thereon by being inserted in respective central openings defined in the cutting blades, the blade support shafts extending along the Y-axis.

4. The automatic blade changer according to claim 1, further comprising:

a Y-axis moving means for selectively bringing the unloading and loading means into the working position

and a retracted position along the Y-axis with respect to the cutting blade storing means;

a Z-axis moving means for moving the unloading and loading means along the Z-axis; and

an X-axis moving means for moving the unloading and loading means along the X-axis and positioning the unloading and loading means in the working position in which the unloading and loading means works on the cutting blade mounted on a spindle of the cutting means,

wherein the unloading and loading means includes

a Z-axis rotational shaft extending along the Z-axis,

a blade holder coupled radially to the Z-axis rotational shaft for holding a cutting blade under suction thereon, and

a mounting nut holder for threading a mounting nut over or off an externally threaded distal end portion of the spindle.

5. The automatic blade changer according to claim 4, wherein each of the cutting blades stored in the cutting blade storing means is a hub blade including a base and an annular cutting blade disposed on an outer circumferential portion of the base,

each of the blade support shafts has a diameter

commensurate with a diameter of the central openings of the hub blades, and

the blade holder supports at least one of the hub blades.

6. The automatic blade changer according to claim 4, wherein each of the cutting blades stored in the cutting blade storing means is a washer blade including an annular cutting edge,

each of the blade support shafts has a diameter commensurate with a diameter of the central openings of the washer blades, and

the blade holder supports at least one of the washer blades and also a mounting flange for mounting the washer blade on the spindle of the cutting means.

7. The automatic blade changer according to claim 4, wherein the unloading and loading means is disposed in a frame by a bendable arm of the X-axis moving means, and the frame is slidably supported on a guide rail disposed on a vertically movable table and extending along the Y-axis and is able to selectively be positioned in the working position and the retracted position along the Y-axis with respect to the cutting blade storing means by the Y-axis moving means.