WHAT IS CLAIMED IS:

1. A hard wafer grinding method for grinding a radius part from a center to a periphery of a hard wafer held on a holding surface of a chuck table by lower surfaces of grinding stones arranged in an annular shape having a diameter larger than a radius of the hard wafer, the hard wafer grinding method comprising:

a rough grinding step of rotating the chuck table holding the hard wafer by the holding surface, bringing rough grinding stones arranged in an annular shape into contact with the radius part of the hard wafer, and forming a section along a diameter of the hard wafer into a centrally recessed shape by roughly grinding the hard wafer such that a central part of the hard wafer is thinner than a peripheral part of the hard wafer; and

a finish grinding step of rotating the chuck table holding the hard wafer of the centrally recessed shape after the rough grinding by the holding surface, expanding a ground area of the hard wafer from the peripheral part in an annular shape to the central part while dressing, by the peripheral part of the hard wafer, dulled lower surfaces of finish grinding stones capable of coming into contact with the radius part of the hard wafer and arranged in an annular shape by making the

finish grinding stones approach the hard wafer from above the holding surface along a direction perpendicular to the holding surface, then setting a whole of the radius part of the hard wafer as the ground area, and further finish-grinding the hard wafer so as to obtain a predetermined thickness.

2. A hard wafer grinding method for grinding a radius part from a center to a periphery of a hard wafer held on a holding surface of a chuck table by lower surfaces of grinding stones arranged in an annular shape having a diameter larger than a radius of the hard wafer, the hard wafer grinding method comprising:

a rough grinding step of rotating the chuck table holding the hard wafer by the holding surface, bringing rough grinding stones arranged in an annular shape into contact with the radius part of the hard wafer, and forming a section along a diameter of the hard wafer into a centrally projecting shape by roughly grinding the hard wafer such that a peripheral part of the hard wafer is thinner than a central part of the hard wafer; and

a finish grinding step of rotating the chuck table holding the hard wafer of the centrally projecting shape after the rough grinding by the holding surface, expanding a ground area of the hard wafer from the

central part to the peripheral part while dressing, by the central part of the hard wafer, dulled lower surfaces of finish grinding stones capable of coming into contact with the radius part of the hard wafer and arranged in an annular shape by making the finish grinding stones approach the hard wafer from above the holding surface along a direction perpendicular to the holding surface, then setting a whole of the radius part of the hard wafer as the ground area, and further finish-grinding the hard wafer so as to obtain a predetermined thickness.

3. A hard wafer grinding method for grinding a radius part from a center to a periphery of a hard wafer held on a holding surface of a chuck table by lower surfaces of grinding stones arranged in an annular shape having a diameter larger than a radius of the hard wafer, the hard wafer grinding method comprising:

a rough grinding step of rotating the chuck table holding the hard wafer by the holding surface, bringing rough grinding stones arranged in an annular shape into contact with the radius part of the hard wafer, and forming a section along a diameter of the hard wafer into a W-shape by roughly grinding the hard wafer such that an intermediate part between a central part and a peripheral part of the hard wafer is thinnest; and

a finish grinding step of rotating the chuck table holding the hard wafer of the W-shape after the rough grinding by the holding surface, expanding a ground area of the hard wafer from the central part toward the peripheral part and expanding the ground area of the hard wafer from the peripheral part toward the central part while dressing, by the central part and the peripheral part of the hard wafer, dulled lower surfaces of finish grinding stones capable of coming into contact with the radius part of the hard wafer and arranged in an annular shape by making the finish grinding stones approach the hard wafer from above the holding surface along a direction perpendicular to the holding surface, then setting a whole of the radius part of the hard wafer as the ground area, and further finish-grinding the hard wafer so as to obtain a predetermined thickness.

4. The hard wafer grinding method according to claim 1, wherein

grinding stones of a grain size of #1000 to #1400 are used as the rough grinding stones, and

grinding stones of a grain size of #1800 to #2400 are used as the finish grinding stones.

5. The hard wafer grinding method according to claim 2, wherein

grinding stones of a grain size of #1000 to #1400 are used as the rough grinding stones, and

grinding stones of a grain size of #1800 to #2400 are used as the finish grinding stones.

6. The hard wafer grinding method according to claim 3, wherein

grinding stones of a grain size of #1000 to #1400 are used as the rough grinding stones, and

grinding stones of a grain size of #1800 to #2400 are used as the finish grinding stones.