WHAT IS CLAIMED IS:

1. A workpiece grinding method that is applied when a circular plate-shaped workpiece having a first surface and a second surface on an opposite side of the first surface is to be ground, the workpiece grinding method comprising:

a first grinding step of grinding the workpiece by moving the workpiece and a first grinding wheel relative to each other while rotating them, the first grinding wheel including a plurality of first grindstones that each include abrasive grains and are arrayed in an annular area with a first diameter smaller than a diameter of the workpiece, and causing the first grindstones to come into contact with the workpiece from the second surface side, to thereby form in the workpiece a circular plate-shaped first thin plate portion and an annular first thick plate portion that surrounds the first thin plate portion and that has an inner side surface at least part of which is inclined with respect to the second surface; and

a second grinding step of, after the first grinding step, grinding the workpiece by moving the workpiece and a second grinding wheel relative to each other while rotating them, the second grinding wheel

including a plurality of second grindstones that each include abrasive grains smaller than those of the first grindstones and are arrayed in an annular area with a second diameter smaller than the diameter of the workpiece, and causing the second grindstones to come into contact with one of the first thin plate portion or the part of the side surface of the first thick plate portion from the second surface side and then with the other of the first thin plate portion or the part of the side surface of the first thick plate portion, in such a manner that the part of the side surface of the first thick plate portion is partially removed, to thereby form in the workpiece a circular plate-shaped second thin plate portion that is larger in diameter but thinner than the first thin plate portion and an annular second thick plate portion that surrounds the second thin plate portion,

wherein, in the second grinding step, the second grinding wheel and the workpiece are moved relative to each other in a direction inclined with respect to the second surface, in such a manner that a center of rotation of the second grinding wheel is distanced from a center of rotation of the workpiece.

2. The workpiece grinding method according to

claim 1, wherein,

in the first grinding step, the first grinding wheel and the workpiece are moved relative to each other in a direction inclined with respect to the second surface, in such a manner that a center of rotation of the first grinding wheel approaches a center of rotation of the workpiece.

3. The workpiece grinding method according to claim 1, wherein,

in the first grinding step, after the first grinding wheel and the workpiece are moved relative to each other in a direction that intersects the second surface, in such a manner that a center of rotation of the first grinding wheel does not approach a center of rotation of the workpiece, the first grinding wheel and the workpiece are moved relative to each other in a direction inclined with respect to the second surface, in such a manner that the center of rotation of the first grinding wheel approaches the center of rotation of the workpiece.

4. The workpiece grinding method according to claim 1, wherein,

in the second grinding step, after at least the first thin plate portion is ground by moving the second

grinding wheel and the workpiece relative to each other in a direction that intersects the second surface, in such a manner that a center of rotation of the second grinding wheel is not distanced from a center of rotation of the workpiece, at least the part of the side surface of the first thick plate portion is partially removed by moving the second grinding wheel and the workpiece relative to each other in a direction along the second surface in such a manner that the center of rotation of the second grinding wheel is distanced from the center of rotation of the workpiece.

5. The workpiece grinding method according to claim 1, wherein,

in the second grinding step, after at least the part of the side surface of the first thick plate portion is partially removed by moving the second grinding wheel and the workpiece relative to each other in a direction along the second surface in such a manner that a center of rotation of the second grinding wheel is distanced from a center of rotation of the workpiece, at least the first thin plate portion is ground by moving the second grinding wheel and the workpiece relative to each other in a direction that intersects the second surface, in such a manner that the center of rotation of the second

grinding wheel is not distanced from the center of rotation of the workpiece.