WHAT IS CLAIMED IS:

1. A fine adjustment device capable of being interposed between a table base rotatably supporting a chuck table for holding a workpiece on a holding surface and a base supporting the table base and that adjusts a distance between the table base and the base, the fine adjustment device comprising:

a support member that has an upper section and an intermediate section and a lower section, with the upper section capable of being fixed to the table base and with the intermediate section capable of being fixed to the base;

an accommodating chamber formed in the support member;

a piezoelectric actuator that is accommodated in the accommodating chamber and is capable of contracting and extending in a perpendicular direction; and

a contraction-extension structure in which first slits for cutting the intermediate section partially from a first side and second slits for cutting the intermediate section partially from a side opposite to the first side are alternately formed in plurality, whereby the accommodating chamber is capable of being contracted and extended in the perpendicular direction,

wherein, by controlling a voltage supplied to the piezoelectric actuator, the piezoelectric actuator is contracted and extended, and the contraction-extension structure is contracted and extended to enable the distance between the base and the table base to be changed.

2. The fine adjustment device according to claim 1,

wherein a plurality of the fine adjustment devices are capable of being interposed between the table base and the base at intervals in a circumferential direction.

3. The fine adjustment device according to claim 1, further comprising:

a compression spring mechanism that compresses the contraction-extension structure.

4. A processing apparatus comprising:

a chuck table that holds a workpiece on a holding surface;

a processing unit that has a processing tool disposed in a rotatable manner and that processes the workpiece held on the holding surface of the chuck table;

a control unit; and

a fine adjustment device that is interposed between a table base rotatably supporting the chuck table and a

base on which the table base is disposed and that adjusts a distance between the table base and the base,

wherein the fine adjustment device includes

a support member that has an upper section and an intermediate section and a lower section, with the upper section fixed to the table base and with the intermediate section fixed to the base,

an accommodating chamber formed in the support member,

a piezoelectric actuator that is accommodated in the accommodating chamber and is capable of contracting and extending in a perpendicular direction, and

a contraction-extension structure in which first slits for cutting the intermediate section partially from a first side and second slits for cutting the intermediate section partially from a side opposite to the first side are alternately formed in plurality, whereby the accommodating chamber is capable of being contracted and extended in the perpendicular direction, and

the control unit controls a voltage supplied to the piezoelectric actuator of the fine adjustment device, to thereby contract and extend the piezoelectric actuator,

whereby an inclination of the holding surface of the chuck table mounted on the table base in a rotatable manner is capable of being adjusted.

5. The processing apparatus according to claim 4,

wherein the processing unit includes a rotatable grinding wheel on which a plurality of grindstones are arranged in an annular pattern,

the processing apparatus further includes:

a motor that rotates a rotary shaft of the chuck table around the holding surface; and

an encoder that detects a rotational angle of the rotary shaft, and

the control unit controls a voltage supplied to the piezoelectric actuator according to the rotational angle detected by the encoder, to thereby change the inclination of the holding surface of the chuck table according to the rotational angle and to grind the workpiece by the grindstones.