

WHAT IS CLAIMED IS:

1. A workpiece processing apparatus which coats a front surface of a workpiece with a resin, the workpiece having a device formed in each of regions demarcated by a plurality of planned dividing lines ~~formed in a lattice manner~~, the workpiece processing apparatus comprising:

a cassette including a plurality of shelves formed therewithin and ~~cassette mounting means mounted with a cassette~~ housing a plurality of workpieces, said cassette is mounted on a cassette mounting means;

a spinner table surrounded by a cover and a first conveying means below said cover, said spinner table configured to hold the workpiece;

a second conveying means that transfers the workpiece between the cassette and the spinner table;

a resin coating means configured for coating the front surface of the workpiece with the resin;

a resin curing means including a chamber having an external stimulus, the workpiece on said spinner table being reciprocally movable between said resin coating means and within said chamber of said resin curing means using said first conveying means, said resin curing means curing the resin on the workpiece by applying the external stimulus to the resin on the front surface of

the workpiece to provide a cured~~curing the resin by~~
~~applying an external stimulus to the~~ coated resin on the
front surface of the workpiece;

a resin grinding means including a rotating
grinding stone that flattens~~flattening~~ the cured coated
resin by grinding a portion of the cured coated resin
such that a portion of the cured resin remains on the
front surface of the workpiece after~~by a rotating~~
~~grinding stone; and~~

a thickness measuring means including a chuck table
that holds the workpiece with the cured coated resin,
wherein the thickness measuring means measures a
thickness of the cured coated resin on the workpiece
after the cured coated resin is ground by the resin
grinding means and provides a measured thickness of the
cured coated resin, and transmits the measured thickness
of the cured coated resin to a control mean~~conveying~~
~~means conveying the workpiece between the cassette~~
~~mounting means, the resin coating means, the resin curing~~
~~means, and the resin grinding means;~~

a grinding apparatus in a next process that grinds
a back surface of the workpiece to a predetermined
thickness based on the measured thickness of the cured
coated resin on the front surface; and

the control means controlling operations of the workpiece processing apparatus, wherein the control means stores a number associated with each of the plurality of shelves within the cassette and the measured thickness value of the cured coated resin of the workpieces housed in each of the plurality of shelves and transmits, the number associated with each of the plurality of shelves within the cassette and the measured thickness value of the cured coated resin of the respective workpiece housed in each of the plurality of shelves to the grinding apparatus.

2. The workpiece processing apparatus according to claim 1, wherein

the resin coating means coats the front surface of the workpiece with the resin by a spin coating method.

~~3. The workpiece processing apparatus according to claim 1, wherein~~

~~the workpiece processing apparatus measures a thickness of the resin after being ground, and transmits the measured thickness of the resin to a grinding apparatus in a next process, the grinding apparatus thinning the workpiece to a predetermined thickness by grinding a back surface of the workpiece.~~

3. The workpiece processing apparatus according to claim 1, wherein said thickness measuring means includes a light projecting element and a light detecting element, said light projecting element directs light at an upper surface of the cured coated resin on the workpiece and through the cured coated resin to a lower surface of the cured coated resin and said light detecting element receives reflected light from the upper surface and the lower surface of the cured coated resin, and said thickness measuring means calculates an optical path difference to determine the thickness of the cured coated resin.

4. The workpiece processing apparatus according to claim 1, wherein the thickness measuring means includes a first height measuring means that measures a holding surface of a holding table for the workpiece, and a second height measuring means that measures an upper surface of the cured coated resin on the workpiece.

5. The workpiece processing apparatus according to claim 1, wherein said first height measuring means and said second height measuring means each include a contact that is raised and lowered relative to the workpiece, wherein the contact of said first height measuring means contacts the holding surface, and the contact of the

second height measuring means contacts the upper surface of the cured coated resin.

6. The workpiece processing apparatus according to claim 1, further comprising a cleaning apparatus configured for cleaning a ground surface of the cured coated resin on the workpiece.

7. The workpiece processing apparatus according to claim 1, wherein the resin curing means includes a plurality of light sources of ultraviolet light that emit ultraviolet light rays of a predetermined wavelength on the workpiece to provide the cured coated resin on the front surface of the workpiece.