What we claim is:

1. A coating apparatus, comprising:

a centering device for determining a center of a lens;

a lens height measuring device for measuring a gradient of the lens ranging from a center on a face side of the lens to an edge portion on the face side of the lens;

a primer fluid applicator device for coating a primer coating fluid onto the face side of the lens by an ejection nozzle;

a primer spinning device for rotating the lens coated with the primer coating fluid at a rotational speed conformed to the gradient of the lens;

a drying device for drying the primer coating fluid coated onto the lens;

a photochromic fluid applicator device for coating a photochromic coating fluid onto a primer film coated onto the lens;

a photochromic spinning device for rotating the lens coated with the photochromic coating fluid at a rotational speed conformed to the gradient of the lens; and

a UV device for irradiating the lens, which has been coated with the photochromic coating fluid, with UV light in a nitrogen atmosphere to cure a coating layer,

wherein each of the centering device, the lens height measuring device, the primer spinning device, the drying device, the photochromic spinning device, and the UV device has a lens support portion for supporting the lens, and

a lens transport means capable of transferring the lenses is provided.

2. The coating apparatus according to claim 1, wherein

the centering device, the lens height measuring device, the primer spinning device, the drying device, the photochromic spinning device, and the UV device are being

divided into a former group and a latter group according to a sequence of a coating operation for the lens ; the lens transport means comprises a pair of handling devices each having an arm-shaped member pivoting about a shaft ;

each of lens support portions of devices belonging to the former group is being disposed inside a track of one of the handling devices of the lens transport means, and each of lens support portions of devices belonging to the latter group is being disposed inside a track of the the other handling device of the lens transport means ; and

of the respective lens support portions of the former group, the lens support portion used finally in the sequence of the operation is being disposed not only inside the track of the handling device but inside the track of the other handling device.

3. The coating apparatus according to claim 2, wherein

the former group includes the centering device, the lens height measuring device, the primer spinning device, the drying device, and the photochromic spinning device ;

the latter group includes the UV device and

the lens support portion of the photochromic spinning device is disposed inside the tracks of both the one handling device and the other handling device.

4. The coating apparatus according to claim 1, wherein a plurality of the lens support portions of the lens drying device are arranged, and a plurality of the UV devices are arranged.

5. The coating apparatus according to claim 1, wherein a lens height difference between two points at a center of a lens surface of the lens supported by the centering jig and at other location on the lens surface spaced from the center is detected by a sensor provided in the lens height measuring sensor.

6. The coating apparatus according to claim 5, wherein the lens height measuring device comprises ~~two~~ at least one set of a light emitter for emitting a light and a light receiver for detecting the light emitted from the light emitter ; and

the height of the lens is determined based on an information resulting from interruption of the light detecting at the light receiver by the lens.

7. The coating apparatus according to claim 1, wherein the primer coating fluid is coated onto the surface of the lens while the ejection nozzle of the primer fluid applicator device is being moved at a distance from, and along, a straight line connecting the center of the surface of the lens to an edge portion of the surface of the lens.

8. The coating apparatus according to claim 1, which further comprising a coating film uniformizing device having a flexible film for spreading the photochromic coating fluid on the surface of the lens, wherein the coating film uniformizing device spreads the photochromic coating fluid on the surface of the rotating lens by moving the flexible film along a linear track connecting a central portion of an upper surface of the lens to an edge portion of the upper surface of the lens and by contacting an edge portion of the flexible film with the photochromic coating fluid during the movement.

9. The coating apparatus according to claim 1, wherein one of the lens support portions is formed to be movable, and two of the respective lens support portions are rendered common by the one lens support portion.

10. The coating apparatus according to claim 1, which further comprising a cleaning nozzle for cleaning a back of the lens supported by the primer spinning device by discharging a

solvent toward the back of the lens.

11. The coating apparatus according to claim 1, which further comprising a waiting tank provided within a range of movement of the ejection nozzle of the primer coating device, wherein the waiting tank stores a solvent for preventing solidification of the primer coating fluid by dipping the ejection nozzle of the primer coating device in the solvent when the ejection nozzle is not in operation.

CLAIMS:

1. A coating apparatus, comprising:

a centering device for determining a center of a lens;

a lens height measuring device for measuring a gradient of the lens ranging from a center on a face side of the lens to an edge portion on the face side of the lens; a primer fluid applicator device for coating a primer coating fluid onto the face side of the lens by an ejection nozzle;

a primer spinning device for rotating the lens coated with the primer coating fluid at a rotational speed conformed to the gradient of the lens;

a drying device for drying the primer coating fluid coated onto the lens;

a photochromic fluid applicator device for coating a photochromic coating fluid onto a primer film coated onto the lens;

a photochromic spinning device for rotating the lens coated with the photochromic coating fluid at a rotational speed conformed to the gradient of the lens; and

a UV device for irradiating the lens, which has been coated with the photochromic coating fluid, with UV light in a nitrogen atmosphere to cure a coating layer,

wherein each of the centering device, the lens height measuring device, the primer spinning device, the drying device, the photochromic spinning device, and the UV device has a lens support portion for supporting the lens, and

a lens transport means capable of transferring the lenses is provided and wherein

the centering device, the lens height measuring device, the primer spinning device, the drying device, the photochromic spinning device, and the UV device are being divided into a former group and a latter group according to a sequence of a coating operation for the lens ; the lens transport means comprises a pair of handling devices each having an arm-shaped member pivoting about a shaft;

each of lens support portions of devices belonging to the former group is being disposed inside a track of one of the handling devices of the lens transport means, and each of lens support portions of devices belonging to the latter group is being disposed inside a track of the other handling device of the lens transport means; and

of the respective lens support portions of the former group, the lens support portion used finally in the sequence of the operation is being disposed not only inside the track of the handling device but inside the track of the other handling device.

2. The coating apparatus according to claim 1, wherein

the former group includes the centering device, the lens height measuring device, the primer spinning device, the drying device, and the photochromic spinning device;

the latter group includes the UV device and

the lens support portion of the photochromic spinning device is disposed inside the tracks of both the one handling device and the other handling device.

3. The coating apparatus according to any preceding claim, wherein a plurality of the lens support portions of the lens drying device are arranged, and a plurality of the LIV devices are arranged.

4. The coating apparatus according to any preceding claim, wherein a lens height difference between two points at a center of a lens surface of the lens supported by the centering jig and at other location on the lens surface spaced from the center is detected by a sensor provided in the lens height measuring sensor.

5. The coating apparatus according to claim 4, wherein

the lens height measuring device comprises at least one set of a light emitter for emitting a light and a light receiver for detecting the light emitted from the light emitter; and

the height of the lens is determined based on an information resulting from interruption of the light detecting at the light receiver by the lens.

6. The coating apparatus according to any preceding claim, wherein the primer coating fluid is coated onto the surface of the lens while the ejection nozzle of the primer fluid applicator device is being moved at a distance from, and along, a straight line connecting the center of the surface of the lens to an edge portion of the surface of the lens.

7. The coating apparatus according to any preceding claim, which further comprising a coating film uniformizing device having a flexible film for spreading the photochromic coating fluid on the surface of the lens, wherein the coating film uniformizing device spreads the photochromic coating fluid on the surface of the rotating lens by moving the flexible film along a linear track connecting a central portion of an upper surface of the lens to an edge portion of the upper surface of the lens and by contacting an edge portion of the flexible film with the photochromic coating fluid during the movement.

8. The coating apparatus according to any preceding claim, wherein one of the lens support portions is formed to be movable, and two of the respective lens support portions are rendered common by the one lens support portion.

9. The coating apparatus according to any preceding claim, which further comprising a cleaning nozzle for cleaning a back of the lens supported by the primer spinning device by discharging a solvent toward the back of the lens.

10. The coating apparatus according to any preceding claim, which further comprising a waiting tank provided within a range of movement of the ejection nozzle of the primer coating device, wherein the waiting tank stores a solvent for preventing solidification of the primer coating fluid by dipping the ejection nozzle of the primer coating device in the solvent when the ejection nozzle is not in operation.

11. The coating apparatus according to any preceding claim, which further comprising a spatula disposed in surroundings of the photochromic spinning device, wherein the spatula is capable to contact with a side surface of the lens supported by the photochromic spinning device during coating with the photochromic coating fluid.

12. A coating apparatus as herein described with reference to the accompanying drawings.