CLAIMS

1. A buff processing device for executing buff processing of a substrate, comprising:

a rotatable shaft;

a buff head body;

a torque transmission mechanism for transmitting rotation of the shaft to the buff head body; and

an elastic member for elastically supporting the buff head body in the longitudinal direction of the shaft,

wherein the buff processing device has a head support portion fixed to the shaft directly or indirectly and a support member fixed to the buff head body;

the shaft is movable in the longitudinal direction of the shaft; and

the head support portion has a spherical recess surface configured to contact with the buff head body,

the buff head body has a spherical projection surface configured to contact with the spherical recess surface,

the head support portion is configured to be separated from the support member and to be brought into contact with the buff head body when the substrate is subjected to the buff processing, and the head support portion is configured to be brought into contact with the support member and to be separated from the buff head body when the buff head body is moved in a direction separated from the substrate;

the torque transmission mechanism and the elastic member include a bellows-type cup ring,

the bellows-type cup ring has one end coupled to the shaft directly or indirectly, while the other end is coupled to the buff head body,

the buff processing device further comprises a gimbal mechanism slidably supporting the buff head body,

the gimbal mechanism is configured by the spherical recess surface of the head

support portion and the spherical projection surface of the buff head body.

2. The buff processing device according to claim 1, further comprising:

a buff pad carrier removably mounted on the buff head body; and

a buff pad mounted on the buff pad carrier.

3. The buff processing device according to claim 1, wherein

a rotation center of the gimbal mechanism is configured to be close to a surface of the buff pad in a state where the buff pad is mounted.

4. The buff processing device according to claim 3, wherein

the rotation center of the gimbal mechanism is within a range of 10 mm from the surface of the buff pad in the state where the buff pad is mounted.

5. The buff processing device according to claim 1, wherein

a cover at least partially surrounding the shaft, the buff head body, the torque transmission mechanism, and the elastic member is provided.

6. A substrate processing device, comprising:

the buff device according to claim 1;

a conveyance mechanism for conveying the substrate;

a washing unit for washing the substrate; and

a drying unit for drying the substrate.