

CLAIMS

1. A susceptor support portion supporting a susceptor from below, within an epitaxial growth apparatus that forms an epitaxial film on a surface of a semiconductor wafer placed on the susceptor having a through hole, the susceptor support portion comprising:

a susceptor shaft that supports the susceptor; and

a substrate lift portion that supports the semiconductor wafer,

wherein the susceptor shaft includes a support column and a plurality of arms that extend radially from the support column,

the substrate lift portion includes a support column and a plurality of arms that extend radially from the support column,

the arm of the susceptor shaft includes a first arm, a second arm coupled to the first arm, and a third arm coupled to the second arm, from the support column side of the susceptor support portion, the second arm being provided with a through hole which passes through the second arm in a vertical direction,

the arm of the substrate lift portion includes a first arm, a second arm coupled to the first arm, and a pedestal portion coupled to the second arm, from the support column side of the substrate lift portion,

a lift pin capable of passing through the through hole of the susceptor shaft and the through hole of the susceptor is provided between the pedestal portion of the substrate lift portion and the semiconductor wafer, and

a width of the first arm of the susceptor shaft is smaller than a width of the second arm of the susceptor shaft.

2. The susceptor support portion according to claim 1, wherein the width of the first arm of the susceptor shaft is equal to or less than a diameter of the through hole of the susceptor shaft.

3. The susceptor support portion according to claim 1, wherein a width of the third arm of the susceptor shaft is smaller than a width of the second arm of the susceptor shaft.

4. The susceptor support portion according to claim 3, wherein the width of the third

arm of the susceptor shaft is equal to or less than the diameter of the through hole of the susceptor shaft.

5. The susceptor support portion according to claim 1, wherein a width of the second arm of the substrate lift portion is smaller than the width of the first arm of the substrate lift portion.

6. The susceptor support portion according to claim 1, wherein the width of the second arm of the substrate lift portion is the same as the width of the first arm of the susceptor shaft.

7. The susceptor support portion according to claim 1, wherein the support column of the susceptor shaft is provided with a cap that supports the susceptor.

8. The susceptor support portion according to claim 1, wherein the pedestal portion is provided with a concave portion capable of supporting a lower end of the lift pin.

9. An epitaxial growth apparatus forming an epitaxial film on a surface of a semiconductor wafer placed on a susceptor having a through hole, comprising:

a susceptor support portion that supports the susceptor from below,
wherein the susceptor support portion includes a susceptor shaft that supports the susceptor and a substrate lift portion that supports the semiconductor wafer,

wherein the susceptor shaft includes a support column and a plurality of arms that extend radially from the support column,

the substrate lift portion includes a support column and a plurality of arms that extend radially from the support column,

the arm of the susceptor shaft includes a first arm, a second arm coupled to the first arm, and a third arm coupled to the second arm, from the support column side of the susceptor shaft, the second arm being provided with a through hole which passes through the second arm in a vertical direction,

the arm of the substrate lift portion includes a first arm, a second arm coupled to the first arm, and a pedestal portion coupled to the second arm, from the support column side of the substrate lift portion,

a lift pin capable of passing through the through hole of the susceptor shaft and the through hole of the susceptor is provided between the pedestal portion of the substrate lift portion and the semiconductor wafer, and

a width of the first arm of the susceptor shaft is smaller than a width of the second arm of the susceptor shaft.