CLAIMS

1. A wafer container comprising :

a top housing and a bottom housing that nest together to form a clam shell housing with an inner cavity for storage for at least one semiconductor wafer;

said top housing having an essentially planar rectangular base with least one rib that extends perpendicular from said base in an essentially circular orientation;

said bottom housing having an essentially planar rectangular base with at least one rib that extends perpendicular from said base wherein said at least one rib on said bottom housing further includes at least two living hinges arranged normal to said essentially planar base wherein each said living hinge is formed from at least one movable wall segment;

at a distal end away from said living hinge, said at least one movable wall has a first panel closing ramp, and

said top housing has a second closing ramp configured to engage with said first panel closing ramp such that when said top housing is seated on said bottom housing said first closing ramp pushes said second closing ramp to push said movable walls concentrically towards said inner cavity.

2. The wafer container according to claim 1 wherein a plurality of wall segments move radially to maintain said at least one semiconductor wafer concentric with said wafer container.

3. The wafer container according to claim 1 wherein said wall segments further include elastomeric inserts that are located between said wall segment and said at least one semiconductor wafer.

4. The wafer container according to claim 1 wherein said movable wall make contact with said at least one semiconductor wafer at a location between said living hinge and said first closing ramp.

5. The wafer container according to claim 1 that includes at least two movable walls.

6. The wafer container according to claim 1 that includes at least four movable walls.

7. The wafer container according to claim 1 that includes at least eight movable walls.

8. A wafer container comprising :

a top housing and a bottom housing that nest together to form a clam shell housing with an inner cavity for storage for at least one semiconductor wafer;

said top housing having an essentially planar rectangular base with least one rib that extends perpendicular from said base in an essentially circular orientation;

said bottom housing having a base with at least one rib that extends perpendicular from said base wherein said at least one rib on said bottom housing has a plurality of flexible wall segments;

each of said plurality of flexible wall segments have a first panel closing ramp;

said top housing is configured to engage with said first panel closing ramp such that when said top housing is seated on said bottom housing said at least one rib on said top housing engages on said first panel closing rib to flex said wall segments radially inward to said inner cavity.

9. The wafer container according to claim 8 wherein said rib on said top housing further includes a closing ramp that engages on said first closing ramp.

10. The wafer container according to claim 8 wherein said closing ramps are stepped.

11. The wafer container according to claim 8 wherein said wall segments further include elastomeric inserts that are located between said wall segment and said at least one semiconductor wafer.

12. The wafer container according to claim 8 wherein said movable wall makes contact with said at least one semiconductor wafer at a location between said hinge and said first closing ramp.

13. The wafer container according to claim 8 that includes at least four movable walls.

14. The wafer container according to claim 8 that includes at least eight movable walls.

15. A wafer container comprising :

a top housing and a bottom housing that nest together to form a clam shell housing with an inner cavity for storage for at least one semiconductor wafer;

said top housing having an essentially planar rectangular base with least one rib that extends perpendicular from said base in an essentially circular orientation;

said bottom housing having an essentially planar rectangular base with at least one rib that extends perpendicular from said base wherein said at least one rib on said bottom housing further includes at least one hinge arranged normal to said essentially planar base and at least one movable wall segment that is articulatable from said hinge such that said at least one movable wall segment can hinge to make contact with said at least one semiconductor wafer.

16. The wafer container according to claim 15 wherein a plurality of wall segments move radially to maintain said at least one semiconductor wafer concentric with said wafer container.

17. The wafer container according to claim 15 wherein said at least one movable wall is articulated when said top housing is nested on said bottom housing.

18. The wafer container according to claim 17 wherein said articulation is with complimentary ribs located on said top and said bottom housings.

19. The wafer container according to claim 18 wherein at least one of said complimentary ribs on said top or said bottom housing is stepped.

20. The wafer container according to claim 15 wherein at least one of said complimentary ribs on said top or said bottom housing is ramped.

CLAIMS

1. A wafer container comprising :

a top housing and a bottom housing, the bottom housing having an inner cavity for storage for at least one semiconductor wafer;

the top housing having a base with at least one rib that extends perpendicular from the base of the top housing in an essentially circular orientation;

the bottom housing having a base with at least one rib that extends perpendicular from the base of the bottom housing, wherein the at least one rib on the bottom housing is arranged concentric and at a different radius from the at least one rib that extends perpendicular from the base of the top housing, the at least one rib on the bottom housing having an arc angle of < 360°;

wherein the at least one rib on the bottom housing further includes at least one living hinge arranged normal to the base of the bottom housing wherein the living hinge is formed from at least one movable wall segment, wherein the at least one movable wall segment is a flexible panel within the at least one rib on the bottom housing, and wherein the at least one movable wall segment is unsupported on three sides;

wherein the at least one movable wall has a first panel closing ramp, and

the top housing has a second closing ramp configured to engage with the first panel closing ramp such that when the top housing is seated on the bottom housing the first closing ramp engages the second closing ramp to push the movable walls towards the inner cavity.

2. The wafer container according to claim 1 wherein a plurality of wall segments are arranged to move radially to maintain the at least one semiconductor wafer concentric with the wafer container.

3. The wafer container according to claim 1 wherein the wall segments further include elastomeric inserts that are arranged to be located between the wall segment and the at least one semiconductor wafer.

4. The wafer container according to claim 1 wherein the movable wall is arranged to make contact with the at least one semiconductor wafer at a location between the living hinge and the first closing ramp.

5. The wafer container according to claim 1 that includes at least two movable walls.

6. The wafer container according to claim 1 that includes at least four movable walls.

7. The wafer container according to claim 1 that includes at least eight movable walls.

8. A wafer container comprising :

a top housing and a bottom housing ,the bottom housing having an inner cavity for storage for at least one semiconductor wafer;

the top housing having a base with at least one rib that extends perpendicular from the base of the top housing in an essentially circular orientation;

the bottom housing having a base with at least one rib that extends perpendicular from the base of the bottom housing, wherein the at least one rib on the bottom housing is arranged concentric and at a different radius from the at least one rib that extends perpendicular from the base of the top housing, the at least one rib on the bottom housing having an arc angle of < 360°;

the bottom housing having at least one latch that extends essentially perpendicular from the base of the bottom housing, wherein the distance between the base of the bottom housing to the top surface of the latch is less than the distance between the base of the bottom housing and the top of the at least one rib on the bottom housing;

the top housing having at least one latch well, the latch well having a bottom surface and a rim around the well, wherein the bottom surface is located below the surface of the base of the top housing, and wherein when the top housing is joined with the bottom housing, the top surface of the latch is lower than the rim around the well, and wherein the latch well comprises a notch configured to receive the at least one latch on the bottom housing;

wherein the at least one rib on the bottom housing has a plurality of flexible wall segments, wherein each flexible wall segment is a flexible panel within the at least one rib on the bottom housing, and wherein the at least one movable wall segment is unsupported on three sides;

each of the plurality of flexible wall segments have a first panel closing ramp;

the top housing is configured to engage with the first panel closing ramp such that when said the top housing is seated on the bottom housing the at least one rib on the top housing engages on the first panel closing ramp to flex the wall segments radially inward to the inner cavity.

9. The wafer container according to claim 8 wherein the rib on the top housing further includes a closing ramp that engages on the first closing ramp.

10. The wafer container according to claim 8 wherein the closing ramps are stepped.

11. The wafer container according to claim 8 wherein the wall segments further include elastomeric inserts that are arranged to be located between the wall segment and the at least one semiconductor wafer.

12. The wafer container according to claim 8 wherein the movable wall is arranged to make contact with the at least one semiconductor wafer at a location between a hinge and the first closing ramp.

13. The wafer container according to claim 8 that includes at least four movable walls.

14. The wafer container according to claim 8 that includes at least eight movable walls.

15. A wafer container comprising :

a top housing and a bottom housing, the bottom housing having an inner cavity for storage for at least one semiconductor wafer;

the top housing having a base with at least one rib that extends perpendicular from the base of the top housing in an essentially circular orientation;

the bottom housing having a base with at least one rib that extends perpendicular from the base of the bottom housing, wherein the at least one rib on the bottom housing is arranged concentric and at a different radius from the at least one rib that extends perpendicular from the base of the top housing, the at least one rib on the bottom housing having an arc angle of $< 360°$;

the bottom housing having at least one latch that extends essentially perpendicular from the base of the bottom housing, wherein the distance between the base of the bottom housing to the top surface of the latch is less than the distance between the base of the bottom housing and the top of the at least one rib on the bottom housing;

the top housing having at least one latch well, the latch well having a bottom surface and a rim around the well, wherein the bottom surface is located below the surface of the base of the top housing, and wherein when the top housing is joined with the bottom housing, the top surface of the latch is lower than the rim around the well, and wherein the latch well comprises a notch configured to receive the at least one latch on the bottom housing;

wherein the at least one rib on the bottom housing further includes at least one hinge arranged normal to the essentially planar base and at least one movable wall segment that is articulatable from the hinge such that the at least one movable wall

segment can hinge to make contact with the at least one semiconductor wafer, wherein each flexible wall segment is a flexible panel within the at least one rib on the bottom housing, and wherein the at least one movable wall segment is unsupported on three sides.

16. The wafer container according to claim 15 wherein a plurality of wall segments are arranged to move radially to maintain the at least one semiconductor wafer concentric with the wafer container.

17. The wafer container according to claim 15 wherein the at least one movable wall is articulated when the top housing is nested on the bottom housing.

18. The wafer container according to claim 17 wherein the articulation is with complimentary ribs located on the top and the bottom housings.

19. The wafer container according to claim 18 wherein at least one of the complimentary ribs on the top or the bottom housing is stepped.

20. The wafer container according to claim 15 wherein at least one of the complimentary ribs on the top or the bottom housing is ramped.