

[0011]

FIG. 1 shows the external views of the outer shell constituting the semiconductor wafer container of the present invention, while 1-A, 1-B and 1-C show the top view, the bottom view and the partially enlarged view of the bottom view, respectively.

FIG. 2 shows the assembly view of the semiconductor wafer container of the present invention when a semiconductor wafer is stored by vertically overlapping the two outer shells.

FIG. 3 shows the partial sectional views of the semiconductor wafer container of the present invention. 3-A shows the sectional shape when cut through at A-A' as shown in FIG. 2, while 3-B shows the sectional shape when cut through at B-B' as shown in FIG. 2. Further, 3-C shows the sectional shape when cut through at C-C' as shown in FIG. 2 and 3-D shows the partially enlarged view of 3-A.

FIG. 4 shows the assembly view of the semiconductor wafer container of the present invention where the upper outer shell is reversed upside down and overlaps the lower outer shell so as to store the semiconductor wafer.

FIG. 5 shows the partial sectional views of the semiconductor wafer container of the present invention where the upper outer shell is reversed upside down and overlaps the lower outer shell so as to store the semiconductor wafer. 5-A shows the sectional shape when cut through at D-D' as shown in FIG. 4, while 5-B shows the sectional shape when cut through at E-E' as shown in FIG. 4. Further, 5-C shows the sectional shape when cut through at F-F' as shown in FIG. 4.

FIG. 6 shows the partial sectional view 6-D of the semiconductor wafer container of the present invention. 6-A shows the sectional shape where a single outer shell is cut through at G-G', while 6-B shows the sectional shape where the two outer shells vertically overlapping are cut through at G-G'. Further, 6-C shows the sectional shape where the two outer shells, in which the upper outer shell is reversed upside down and overlaps the lower outer shell, are cut through at G-G'.

Fig. 7 shows the explanatory views of the engaging condition where a boss engages with a boss hole in the semiconductor wafer container of the present invention. 7-A shows the engaging condition of the boss and the boss hole in which the two outer shells vertically overlap, while 7-B shows the engaging condition of the boss and the boss hole in which the upper outer shell is reversed upside down and overlaps the lower outer shell.

Embodiments Carrying out the Present Invention

[0012]

wafer 9 will be conducted by which each outer edge of both surfaces of the semiconductor wafer 9 is only in line contact with the inclined surface 3. Accordingly, the above may not be sufficient if the semiconductor wafer 9 should be transported.

In the above case where the outer shells 2, 2 overlap, the hanging portion 16 formed on the outer peripheral edge of the bottom surface of the outer shell 2 does not constitute an external wall.

[0019]

5-B of FIG. 5 shows a sectional shape when cut through at E-E' in FIG. 4. As defined by the sectional shape of 5-B, as the same with the sectional shape cut through at D-D', also in the sectional shape cut through at E-E', the semiconductor wafer 9 is pinched and fixed between the inclined surface 3 formed on the lower outer shell 2 and the inclined surface 3 formed on the upper outer shell 2.

5-C of FIG. 5 shows a sectional shape when cut through at F-F' in FIG. 4. As defined by the sectional shape of 5-C, in the position cut through at F-F', both of the upper and the lower outer shells 2, 2 do not constitute the inclined surface 3 making line contact with the outer peripheral edge of the semiconductor wafer 9.

[0020]

Assembly as shown in FIG. 4 enables operators to inspect and observe both upper and bottom surfaces of the wafer by handling containers themselves in automated facilities, while constantly keeping the wafer non-contact. Supposing that the semiconductor wafer 9 is to be transported, the above assembly structure cannot fully avoid damages such as scratches or cracks.

The semiconductor wafer container of the present invention has the boss and the boss hole as the positioning device, the boss and the boss hole being engageable with each other and being provided on the surface of the outer shell in a position linearly symmetrical with a line crossing the center of the outer shell. Further, the boss of one outer shell can engage with the boss hole of the other outer shell when the two outer shells vertically overlap.

FIG. 6 shows the partial sectional view of the outer shell constituting the semiconductor wafer container of the present invention where the boss 5 and the boss hole 6 are cut through at G-G'.

In FIG. 6, 6-A shows the sectional shape where the single outer shell 2 is cut through at G-G', 6-B shows the sectional shape where the two outer shells 2, 2 vertically overlap and are cut through at G-G', and 6-C shows the sectional shape where the two