CLAIMS

1. A container refrigeration apparatus comprising:

a casing (11) fitted to an open end of a container body (1),

the casing (11) including an external casing (12) near outside of the container body (1), and an internal casing (13) near inside of the container body (1), the internal casing (13) being fixed to the external casing (12),

left and right edge portions of the external casing (12) each including a column member (50) that is continuous from an upper end to a lower end of the casing (11),

left and right edge portions of the internal casing (13) each including a side plate (41) that is continuous from the upper end to the lower end of the casing (11),

the column member (50) and the associated side plate (41) being fixed together,

the internal casing (13) has a protrusion (13a) forming part of a lower portion of the casing (11) between the left and right edge portions of the internal casing (13) and protruding toward the inside of the container body (1),

the side plate (41) has a first portion located on a side face of the protrusion (13a) of the internal casing (13) and a second portion located above the protrusion (13a), and

the first portion and the second portion are integrated with each other.

2. The container refrigeration apparatus of claim 1, wherein

the side plate (41) have a width extending uniformly in a longitudinal direction of the container body (1) from an upper end to a lower end.

3. The container refrigeration apparatus of claim 1 or 2, wherein

the first portion of the side plate (41) is integrated with the side face of the protrusion (13a) of the internal casing (3).

4. The container refrigeration apparatus of any one of claims 1 to 3, wherein

the internal casing (13) includes a plurality of sheet metal components (41 to 44) combined together, and

the side plate (41) is one of the sheet metal components.

5. The container refrigeration apparatus of any one of claims 1 to 4,

both the external casing (12) and the internal casing (13) are made of a metal material,

the casing (11) includes intermediate members (60) interposed between the external casing (12) and the internal casing (13) and fixed to the associated column members (50) and the associated side plates (41), and

the intermediate members (60) are made of a resin material having a lower thermal conductivity than the column members (50) and the side plates (41) do.

6. A container refrigeration apparatus comprising:

a casing (11) fitted to an open end of a container body (1),

the casing (11) including an external casing (12) near outside of the container body (1), and an internal casing (13) near inside of the container body (1), the internal casing (13) being fixed to the external casing (12),

left and right edge portions of the external casing (12) each including a column member (50) that is continuous from an upper end to a lower end of the casing (11),

left and right edge portions of the internal casing (13) each including a side plate (41) that is continuous from the upper end to the lower end of the casing (11),

the column member (50) and the associated side plate (41) being fixed together, wherein

both the external casing (12) and the internal casing (13) are made of a metal material,

the casing (11) includes intermediate members (60) interposed between the external casing (12) and the internal casing (13) and fixed to the associated column members (50) and the associated side plates (41), and

the intermediate members (60) are made of a resin material having a lower thermal conductivity than the column members (50) and the side plates (41) do.

7. The container refrigeration apparatus of claim 6, wherein

the internal casing (13) has a protrusion (13a) forming part of a lower portion of the casing (11) between the left and right edge portions of the internal casing (13) and protruding toward the inside of the container body (1).

8. The container refrigeration apparatus of claim 6, wherein,

the internal casing (13) has a protrusion (13a) forming part of a lower portion of the casing (11) between the left and right edge portions of the internal casing (13) and protruding toward the inside of the container body (1), and

the lower portion of the side plate (41) is integrated with a side face of the protrusion (13a) of the internal casing (13).

9. The container refrigeration apparatus of claim 6, further comprising:

a plurality of fastening members (70) configured to fix the column members (50) to the associated intermediate members (60) and to fix the side plates (41) to the associated intermediate members (60), the fastening members (70) being vertically spaced apart from one another.

10. The container refrigeration apparatus of claim 7 or 8, further comprising:

a plurality of fastening members (70) configured to fix the column members (50) to the associated intermediate members (60) and to fix the side plates (41) to the associated intermediate members (60), the fastening members (70) being vertically spaced apart from one another.

11. The container refrigeration apparatus of claim 10, wherein

a distance (D1) between each adjacent pair of some of the fastening members (70) arranged above the protrusion (13a) is shorter than a distance (D2) between each adjacent pair of the other fastening members (70) arranged within a range from a lower end to an upper end of the protrusion (13a).

12. The container refrigeration apparatus of any one of claims 6 to 11, wherein

the intermediate members (60) each include a first fastener (61) configured to be fastened to the internal casing (13).

13. The container refrigeration apparatus of claim 12, wherein

the internal casing (13) has plate-shaped edge portions (49c) extending in a top-to-bottom direction of the internal casing (13), and

the first fasteners (61) each have a hook portion (65) extending in the top-to-bottom direction, having a U-shaped cross section, and hooked on an associated one of the plate-shaped edge portions (49c).

14. The container refrigeration apparatus of any one of claims 6 to 11, wherein

the intermediate members (60) each include a second fastener (62) configured to be fastened to the external casing (12).

15. The container refrigeration apparatus of claim 14, wherein

the column members (50) of the external casing (12) each have a groove (53) extending in a top-to-bottom direction of the external casing (12), and

the second fasteners (62) each have a projection (66) that fits in the groove (53) of an associated one of the column members (50).

16. The container refrigeration apparatus of any one of claim 1 to 15, wherein

the internal casing (13) includes a plurality of sheet metal components (41 to 44) combined together, and

each side plate (41) is one of the sheet metal components, and is thickest of the sheet metal components (41 to 44).