CLAIMS

1. A liquefied gas storage tank comprising:

a wall configured to form a storage space for accommodating liquefied gas and having a dome formed on its upper surface for inflow and outflow of the liquefied gas;

a pump tower having an upper end fixed to the dome and provided with a pipe configured to load and unload liquefied gas and a discharge pump configured to unload liquefied gas; and

a lower rotary bearing portion provided on the wall forming a bottom of the storage space and configured to constrain a lower end of the pump tower,

wherein the pump tower comprises an upper rotary bearing portion which is guided to have horizontal movement constrained while vertical movement is allowed by the lower rotary bearing portion, and

the lower rotary bearing portion comprises a plurality of constraining portions which are radially disposed based on a vertical center and provided side by side with the vertical center to have a plurality of constraining surfaces, respectively, so that the upper rotary bearing portion is seated among the plurality of constraining portions.

2. The liquefied gas storage tank of claim 1, wherein the lower rotary bearing portion comprises:

a fixed portion fixed to the wall to protrude inward from the wall and having a circular cross section; and

the plurality of constraining portions radially disposed around the fixed portion.

3. The liquefied gas storage tank of claim 1, wherein the constraining portion has an arc shape to connect a pair of the constraining surfaces that are spaced apart at a predetermined

angle.

4. The liquefied gas storage tank of claim 1, wherein the constraining portion is provided point-symmetrically based on the vertical center.

5. A liquefied gas storage tank comprising:

a wall configured to form a storage space for accommodating liquefied gas and having a dome formed on its upper surface for inflow and outflow of liquefied gas;

a pump tower having an upper end fixed to the dome and provided with a pipe configured to load and unload the liquefied gas and a discharge pump configured to unload liquefied gas; and

a lower rotary bearing portion provided on the wall forming a bottom of the storage space and configured to constrain a lower end of the pump tower,

wherein the pump tower comprises an upper rotary bearing portion which is guided to have horizontal movement constrained while vertical movement is allowed by the lower rotary bearing portion,

the lower rotary bearing portion comprises a plurality of constraining portions which are radially disposed based on a vertical center and provided side by side with the vertical center to constrain the upper rotary bearing portion, and

the upper rotary bearing portion comprises a plurality of seating portions protruding downward of the pump tower so as to be inserted among the plurality of constraining surfaces and having a seating surface facing the constraining surface, and a reinforcing portion configured to connect the plurality of seating portions having the seating surfaces at each different angle.

~~6. The liquefied gas storage tank of claim 5, wherein the seating portion comprises:~~

~~a protrusion vertically protruding downward of the pump tower; and~~

~~a reinforcing rib provided at an upper end of the protrusion,~~

~~wherein the seating surface is provided perpendicular to the protrusion to form a T-shape with the protrusion.~~

~~7. The liquefied gas storage tank of claim 6, wherein the seating portion further comprises a reinforcing plate which is provided parallel to the protrusion and in which the seating surface is installed.~~

~~8. The liquefied gas storage tank of claim 5, wherein the reinforcing portion is provided to connect the plurality of seating portions that are spaced apart to have a 90-degree angle.~~

~~9. The liquefied gas storage tank of claim 5, wherein the reinforcing portion has a shape provided to be curved or bent at least once in order to connect the plurality of seating portions disposed at each different angle.~~

~~10. The liquefied gas storage tank of claim 5, wherein the seating portion is provided point-symmetrically based on the vertical center.~~

~~11. A liquefied gas storage tank comprising:~~

~~a wall configured to form a storage space for accommodating liquefied gas and having a dome formed on its upper surface for inflow and outflow of liquefied gas;~~

a pump tower having an upper end fixed to the dome and provided with a pipe configured to load and unload the liquefied gas and a discharge pump configured to unload the liquefied gas; and

a lower rotary bearing portion provided on the wall forming a bottom of the storage space, configured to constrain a lower end of the pump tower, and provided with a fuel pump configured to supply the liquefied gas to an engine,

wherein the lower rotary bearing portion comprises:

a constraining portion having a plurality of constraining surfaces which are radially disposed based on a vertical center and provided side by side with the vertical center to constrain a lower end of the pump tower;

an extended portion extended in a direction away from the vertical center from the constraining portion; and

a pump support fixed to the extended portion and configured to support the fuel pump.

12. The liquefied gas storage tank of claim 11, wherein a plurality of the constraining portions are provided to be radially disposed based on the vertical center, and

the extended portion is provided to extend from any one of the constraining portions.

13. The liquefied gas storage tank of claim 11, wherein at least a portion of the pump support has a U-shape surrounding the fuel pump, and a reinforcing portion is provided around the fuel pump side by side with a load direction of the fuel pump.

14. The liquefied gas storage tank of claim 11, wherein the lower rotary bearing portion further comprises a level gauge support configured to support a level gauging pipe which is

~~configured to measure a level of the liquefied gas in the storage space, and~~

~~the pump support has one side fixed to the extended portion based on a portion surrounding the fuel pump while the level gauge support is fixed to the other side displaced from the one side.~~

~~15. The liquefied gas storage tank of claim 11, wherein the fuel pump implements, in addition to a function of supplying the liquefied gas stored in the storage space to the engine, a stripping function to discharge liquefied gas remaining in the storage space to the outside or a spraying function to circulate liquefied gas on the bottom of the storage space to an upper portion of the storage space in a complex way.~~

~~16. A ship comprising the liquefied gas storage tank of any one of claims 1 to 5.~~

CLAIMS

1. A liquefied gas storage tank comprising:

a wall configured to form a storage space for accommodating liquefied gas and having a dome formed on its upper surface for inflow and outflow of the liquefied gas;

a pump tower having an upper end fixed to the dome and provided with a pipe configured to load and unload liquefied gas and a discharge pump configured to unload liquefied gas; and

a lower rotary bearing portion provided on the wall forming a bottom of the storage space and configured to constrain a lower end of the pump tower,

wherein the pump tower comprises an upper rotary bearing portion which is guided to have horizontal movement constrained while vertical movement is allowed by the lower rotary bearing portion,

the lower rotary bearing portion comprises a plurality of constraining portions which are radially disposed based on a vertical center and provided side by side with the vertical center to have a plurality of constraining surfaces, respectively, so that the upper rotary bearing portion is seated among the plurality of constraining portions, and

the lower rotary bearing portion comprises:

a fixed portion fixed to the wall to protrude inward from the wall and having a circular cross section; and

the plurality of constraining portions radially disposed around the fixed portion.

2. The liquefied gas storage tank of claim 1, wherein the constraining portion has an arc shape to connect a pair of the constraining surfaces that are spaced apart at a predetermined angle.

3. The liquefied gas storage tank of claim 1, wherein the constraining portion is provided point-symmetrically based on the vertical center.

4. A ship comprising the liquefied gas storage tank of any one of the preceding claims.