Claims

[Claim 1]

A tank system comprising:

a tank that contains liquefied carbon dioxide therein;

a loading pipe that extends in an up-down direction, has a lower end that is open into the tank, and discharges liquefied carbon dioxide that is supplied from an outside, from the lower end into the tank; and

a pipe pressure resistance part that is provided on a lower end side with respect to a pipe top portion that is located at a highest position in the loading pipe, and generates a pressure loss in the liquefied carbon dioxide flowing through the loading pipe, wherein the pipe pressure resistance part generates a pressure loss that is determined such that a value obtained by subtracting a pressure corresponding to a height difference between a liquid level of the liquefied carbon dioxide in the tank and the pipe top portion from a value obtained by adding the pressure loss that is generated by the pipe pressure resistance part to a tank operating pressure exceeds a setting pressure lower limit value obtained by adding a safety margin value to a triple point pressure value of the liquefied carbon dioxide.

[Claim 2]

The tank system according to claim 1, wherein the pipe pressure resistance part is provided at the lower end of the loading pipe.

[Claim 3]

The tank system according to claim 1, wherein the pipe pressure resistance part is higher than the lower end of the loading pipe, and a height thereof from a tank bottom surface of the tank is provided such that a pressure of the liquefied carbon dioxide that has passed through the pipe pressure resistance part does not fall below the triple point pressure value.

[Claim 4]

The tank system according to any one of claims 1 to 3, wherein the pipe pressure resistance part has a flow opening portion which has an opening area smaller than a flow path cross-sectional area in the loading pipe and through which the liquefied carbon dioxide flows.

[Claim 5]

The tank system according to claim 4, wherein the pipe pressure resistance part includes

a control valve that makes an opening area of the flow

opening portion variable, and

a control device that adjusts an opening degree of the flow opening portion in the control valve.

[Claim 6]

The tank system according to claim 5, further comprising:

a pipe top portion pressure sensor that detects a pressure of the liquefied carbon dioxide in the pipe top portion of the loading pipe,

wherein the control device adjusts an opening degree of the control valve, based on a detection value in the pipe top portion pressure sensor.

[Claim 7]

A ship comprising:

a hull; and

the tank system according to any one of claims 1 to 6, which is provided in the hull.