CLAIMS:

1. A gas treatment system for transferring liquefied gas from a storage tank of a bunkering ship to a C-type fuel tank provided in a gas propulsion ship, the gas treatment system, comprising:

a bunkering line configured to supply the liquefied gas of the storage tank to the fuel tank;

a bunkering management part configured to control an internal pressure of the storage tank by liquefying evaporation gas of the storage tank, using a refrigerant, and returning the evaporation gas; and

an evaporation gas return line configured to transfer evaporation gas generated in the fuel tank to the bunkering ship in bunkering through the bunkering line,

~~wherein the bunkering management part lowers the internal pressure of the storage tank to a predetermined pressure or lower before the bunkering, and allow the evaporation gas to be transferred through the evaporation gas return line without compression performed by a separate compressor, by maintaining the internal pressure of the storage tank to be less than that of the fuel tank in the bunkering.~~

wherein the bunkering management part comprises:

a reliquefaction apparatus configured to liquefy the evaporation gas of the storage tank; and

a pressure control line configured to form a circulation flow path between the storage tank and the reliquefaction apparatus and lower the internal pressure of the storage tank by liquefying the evaporation gas of the storage tank in the reliquefaction apparatus and returning the evaporation gas to the storage tank,

wherein the evaporation gas return line transfers the evaporation gas generated in the fuel tank to the reliquefaction apparatus, or transfers the evaporation gas generated in the fuel tank to the storage tank by transferring the evaporation gas generated in the fuel tank to a lower stream of the reliquefaction apparatus on the pressure control line and detouring the reliquefaction apparatus, and

wherein the bunkering management part lowers the internal pressure of

the storage tank to a predetermined pressure using the reliquefaction apparatus before the bunkering and allows the evaporation gas to be transferred from the gas propulsion ship to the bunkering ship through the evaporation gas return line without compression performed by a separate compressor by maintaining the internal pressure of the storage tank to be less than an internal pressure of the fuel tank in the bunkering by controlling flow of the evaporation gas generated in the fuel tank through the reliquefaction apparatus and the evaporation gas return line.

2. The gas treatment system of claim 1, wherein the storage tank is a membrane-type or C-type tank, and

wherein the predetermined pressure is 0.04 barG or 0.2 barG.

~~3. The gas treatment system of claim 1, wherein the bunkering management part includes a reliquefaction apparatus configured to liquefy evaporation gas, and~~

~~wherein the evaporation gas return line transfers the evaporation gas to the reliquefaction apparatus.~~

3~~4~~. The gas treatment system of claim ~~3~~1, wherein the bunkering management part maintains the internal pressure of the storage tank to be less than that of the fuel tank, by reliquefying the evaporation gas transferred through the evaporation gas return line in the bunkering and returning the reliquefied evaporation gas to the storage tank.

4~~5~~. The gas treatment system of claim 1, wherein, when the internal pressure of the fuel tank before the bunkering is ~~the~~ a first pressure, and the bunkering is performed on the fuel tank of which the internal pressure drops due to introduction of the liquefied gas in the bunkering, the bunkering management part allows internal pressures of the storage tank before the bunkering and in the bunkering to be equal to or lower than that of the fuel tank when the bunkering of the fuel tank is completed.

5~~6~~. The gas treatment system of claim 4~~5~~, wherein, when the internal pressure of the fuel tank is a second pressure, and the bunkering is performed on the fuel tank of which the internal pressure rises due to generation of the evaporation gas in the bunkering, the bunkering management part allows internal pressures of the storage tank before the bunkering and in the bunkering to be equal to or lower than that of the fuel tank when the bunkering of the fuel tank is started.

6~~7~~. The gas treatment system of claim 5~~6~~, wherein the first pressure is a pressure which is equal to the predetermined pressure or is higher by 0.05 barG to 0.1 barG than the predetermined pressure, and

the second pressure is a pressure which is lower by 0.05 barG to 0.1 barG than the predetermined pressure.

7~~8~~. The gas treatment system of claim 5~~6~~, wherein the first pressure is 0.5 barG to 8 barG, and

the second pressure is 0.5 barG or lower.

8. A bunkering ship comprising the gas treatment system of any one of claims 1 to 7.

~~9. A gas treatment system for transferring liquefied gas from a storage tank of a bunkering ship to a fuel tank provided in a gas propulsion ship, the gas treatment system, comprising:~~

~~a bunkering line configured to supply the liquefied gas of the storage tank to the fuel tank;~~

~~a bunkering management part configured to control an internal pressure of the storage tank by compressing, cooling, and decompressing evaporation gas of the storage tank without heat exchange with a refrigerant and returning the evaporation gas; and~~

~~an evaporation gas return line configured to transfer evaporation gas generated in the fuel tank to the bunkering ship in bunkering through the bunkering line,~~

~~wherein the bunkering management part:~~

~~lowers the internal pressure of the storage tank to be a predetermined pressure or lower before the bunkering; and~~

~~allows the fuel tank to be pressure-accumulated by blocking the transfer of the evaporation gas through the evaporation gas return line in the bunkering or allows the evaporation gas to be transferred through the evaporation gas return line without compression performed by a separate compressor by maintaining the internal pressure of the storage tank to be less than that of the fuel tank.~~

~~10. The gas treatment system of claim 9, wherein the storage tank is a membrane-type or C-type tank, and~~

~~wherein the predetermined pressure is 0.04 barG or 0.2 barG.~~

~~11. The gas treatment system of claim 9, wherein the bunkering management part includes an evaporation gas heat exchanger configured to heat-exchange compressed evaporation gas with evaporation gas discharged from the storage tank, and~~

~~wherein the evaporation gas return line transfers evaporation gas between the storage tank and the evaporation gas heat exchanger.~~

~~12. The gas treatment system of claim 11, wherein the evaporation gas return line is provided to transfer evaporation gas between the storage tank and the evaporation gas heat exchanger by passing through or detouring the evaporation gas heat exchanger.~~

~~13. The gas treatment system of claim 11, wherein the bunkering management part includes:~~

~~a plurality of low-pressure compressors provided in parallel to compress evaporation gas of the storage tank and then supply the evaporation gas to a generator engine;~~

~~a multi-stage boosting compressor provided at a position branching off between the low-pressure compressor and the generator engine, the multi-stage boosting compressor compressing surplus evaporation gas to 150 barG or higher; and~~

~~a decompression valve configured to decompress and liquefy the evaporation gas compressed by the boosting compressor, and~~

~~wherein the evaporation gas heat exchanger cools high-pressure evaporation gas, using evaporation gas discharged from the storage tank, between the boosting compressor and the decompression valve.~~

~~14. The gas treatment system of claim 13, wherein the bunkering management part sucks the evaporation gas of the storage tank by operating, in parallel, the plurality of low-pressure compressors to lower the internal pressure of the storage tank to the predetermined pressure before the bunkering.~~

~~15. The gas treatment system of claim 11, wherein the bunkering management part includes:~~

~~a low-pressure compressor configured to compress evaporation gas of the storage tank and supply the evaporation gas to a generator engine;~~

~~a multi-stage high-pressure compressor provided in parallel to the low-pressure compressor, the multi-stage high-pressure compressor compressing the evaporation gas of the storage tank to 150 barG or higher; and~~

~~a decompression value configured to decompress and liquefy the evaporation gas compressed by the high-pressure compressor,~~

~~wherein the evaporation gas heat exchanger cools high-pressure evaporation gas, using evaporation gas discharged from the storage tank, between the high-pressure compressor and the decompression valve, and~~

~~wherein the high-pressure compressor supplies evaporation gas of an~~

intermediate stage to the generator engine.

16. The gas treatment system of claim 15, wherein the bunkering management part independently operates the low-pressure compressor and the high-pressure compressor according to a liquefied gas storage volume of the storage tank.

17. A gas treatment system for transferring liquefied gas from a storage tank of a bunkering ship to a fuel tank provided in a gas propulsion ship, the gas treatment system, comprising:

a bunkering line configured to supply the liquefied gas of the storage tank to the fuel tank;

a bunkering management part configured to control an internal pressure of the storage tank by supercooling liquefied gas of the storage tank, using a refrigerant, and returning the liquefied gas; and

an evaporation gas return line configured to transfer evaporation gas generated in the fuel tank to the bunkering ship in bunkering through the bunkering line,

wherein the bunkering management part:

lowers the internal pressure of the storage tank to be a predetermined pressure or lower before the bunkering; and

allows the fuel tank to be pressure-accumulated by blocking the transfer of the evaporation gas through the evaporation gas return line in the bunkering or allows the evaporation gas to be transferred through the evaporation gas return line without compression performed by a separate compressor by maintaining the internal pressure of the storage tank to be less than that of the fuel tank.

18. The gas treatment system of claim 17, wherein the storage tank is a membrane-type or C-type tank, and

wherein the predetermined pressure is 0.04 barG or 0.2 barG.

~~19. The gas treatment system of claim 17, wherein the bunkering management part includes:~~

~~a supercooling apparatus configured to supercool liquefied gas, using a refrigerant; and~~

~~a refrigerant supply part configured to supply the refrigerant to the supercooling apparatus, and~~

~~wherein the refrigerant supply part includes a refrigerant heat exchanger configured to cool the refrigerant, using liquefied gas or evaporation gas, which is supplied from the storage tank to a generator engine.~~

~~20. The gas treatment system of claim 17, wherein the refrigerant supply part includes:~~

~~a refrigerant compressor;~~

~~an inter refrigerant heat exchanger configured to heat exchange a compressed refrigerant with a refrigerant heated in the supercooling apparatus;~~

~~a refrigerant expander configured to expand the refrigerant passing through the inter refrigerant heat exchanger after compression; and~~

~~the refrigerant heat exchanger configured to cool the compressed refrigerant, using the liquefied gas or the evaporation gas, which is supplied to the generator engine.~~

~~21. The gas treatment system of claim 17, wherein the refrigerant supply part includes:~~

~~a refrigerant compressor;~~

~~the refrigerant heat exchanger configured to heat exchange a compressed refrigerant with a refrigerant heated in the supercooling apparatus and liquefied gas or evaporation gas, which is supplied to the generator engine; and~~

~~a refrigerant expander configured to expand the refrigerant passing through the refrigerant heat exchanger after compression.~~

~~22. A bunkering ship comprising the gas treatment system of any one of claims 1 to 21.~~