CLAIMS

1. An apparatus for transferring a liquid cargo, the apparatus comprising:

a liquid cargo transfer line connected to a liquid cargo storage tank;

a drum connected to the liquid cargo transfer line and configured to provide a space for storing a liquid cargo;

a filling line connected to the liquid cargo transfer line and configured to receive the liquid cargo from the outside; and

a pressing unit configured to press the liquid cargo storage tank so that the liquid cargo stored in the liquid cargo storage tank is supplied to the drum through the liquid cargo transfer line,

wherein the pressing unit comprises a compressor configured to receive a boil-off gas from the drum and compress the received boil-off gas and a gas transfer line configured to supply the boil-off gas, which is compressed in the compressor, to the liquid cargo storage tank.

2. The apparatus of claim 1, wherein the pressing unit further comprises a terminal gas line connected to the compressor and configured to supply a boil-off gas from the liquid cargo storage terminal.

3. The apparatus of claim 1, further comprising a cooling unit configured to prevent temperature increase of the liquid cargo storage tank when the compressed boil-off gas is supplied to the liquid cargo storage tank.

4. The apparatus of claim 3, wherein the cooling unit comprises:

an injection nozzle installed in the liquid cargo storage tank to inject the liquid cargo; and

a cooling supply line configured to connect the injection nozzle with the drum and supply a portion of the liquid cargo stored in the drum to the injection nozzle by an auxiliary pump.

5. The apparatus of claim 1, wherein the pressing unit further comprises a bypass line bypassing the compressor and connected to the gas transfer line, and

the boil-off gas generated from the liquid cargo storage tank is supplied between the compressor and the drum through the gas transfer line and the bypass line, compressed in the compressor, and then supplied to a gas demand source.

6. The apparatus of claim 5, further comprising:

a collecting line configured to store surplus boil-off gas, which is remained from the boil-off gas compressed in the compressor after supplied to the gas demand source, in the drum; and

an exhaust line branched from the gas transfer line and configured to exhaust a boil-off gas generated from the drum.

7. The apparatus of claim 1, further comprising:

a discharge line connected to a lower portion of the drum in order to unload the liquid cargo stored in the drum; and

a main pump installed on the discharge line and configured to apply a transfer

pressure to the liquid cargo stored in the drum to pump the liquid cargo.

8. The apparatus of claim 7, further comprising a drum pressure adjusting part configured to adjust a pressure of the drum in order to constantly maintain a flow amount of the liquid cargo discharged through the discharge line.

9. The apparatus of claim 8, wherein the drum pressure adjusting part comprises:

a water level detecting member configured to measure a water level of the liquid cargo in the drum;

a pressure measuring member configured to measure a pressure of a boil-off gas in the drum; and

a controller configured to receive a measured value from the water level detecting member and the pressure measuring member and control a discharge amount of the boil-off gas in the drum,

wherein the controller controls a vapor control valve installed on a gas transfer line through which the boil-off gas in the drum is discharged and a control valve installed on the discharge line and the main pump,

wherein the controller controls the vapor control valve so that an amount of the boil-off gas exhausted through the gas transfer line decreases when the pressure of the boil-off gas in the drum with respect to the water level of the liquid cargo in the drum is less than a preset ratio, and controls the vapor control valve so that the amount of the boil-off gas exhausted through the gas transfer line increases when the pressure of the boil-off gas in the drum with respect to the water level of the liquid cargo in the drum is greater than a

preset ratio.

10. The apparatus of claim 1, wherein the pressing unit prevents pressure decrease of the liquid cargo storage tank by supplying at least one of a boil-off gas supplied from the liquid cargo storage terminal, a boil-off gas generated in the drum, and a gas obtained by evaporating the liquid cargo stored in the drum to the liquid cargo storage tank through the gas transfer line when a liquid cargo is loaded from the liquid cargo storage terminal to the liquid cargo storage tank.

11. A method for transferring a liquid cargo, the method comprising:

pressing a liquid cargo storage tank by using a boil-off gas so that a liquid cargo stored in the liquid cargo storage tank is transferred to a drum; and

discharging the liquid cargo stored in the drum to a liquid cargo storage terminal through pumping of a main pump,

wherein the boil-off gas used to press the liquid cargo storage tank comprises a compressed boil-off gas obtained by compressing a boil-off gas, which is generated in the drum, in a compressor.

12. The method of claim 11, wherein the pressing of the liquid cargo storage tank receives and uses a boil-off gas generated in the liquid cargo storage terminal when the boil-off gas used to press the liquid cargo storage tank is insufficient, and prevents temperature increase of the liquid cargo storage tank by inserting and pressing the compressed boil-off gas into the liquid cargo storage tank while simultaneously injecting the liquid cargo supplied from the drum.

13. The method of claim 12, wherein a portion of the liquid cargo is stored in the drum when the liquid cargo is unloaded form the liquid cargo storage tank,

cool-down of a pump, which is performed before the main pump is used, is performed by using the liquid cargo stored in the drum, and a boil-off gas generated during the cool-down of the pump is supplied to the liquid cargo storage tank.