In addition, the ship is provided with a bunkering manifold which receives fuel gas, and a vent riser which acts as a vent hole through which boil-off gas (BOG) is discharged from the fuel gas tank and the FGS room in an emergency. Since the bunkering manifold acts as a device for receiving the fuel gas, and the vent riser discharges BOG, both devices are exposed to a risk of explosion. Therefore, it is important to determine suitable locations of the bunkering manifold and the vent riser within the ship in order to facilitate supply of fuel gas while reducing the risk of explosion.

【Disclosure】

【Technical Problem】

Embodiments of the invention provide a fuel gas supply system and method of a ship, in which a fuel gas tank and a fuel gas supply (FGS) room are disposed to allow efficient use of a space in the ship while minimizing a length of a fuel gas supply line, and in which a bunkering manifold and a vent riser are disposed to facilitate supply of fuel gas while reducing a risk of explosion.

【Technical Solution】

In accordance with one aspect of the present invention, a fuel gas supply system of a ship includes: an engine generating driving force using fuel gas; ~~and~~ a fuel gas tank storing the fuel gas to be supplied to the engine~~,~~; a bunkering manifold receiving fuel gas supplied from an outside of the ship and supplying the fuel gas to the fuel gas tank; and a vent riser discharging boil-off gas (BOG) of the fuel gas tank in an emergency; wherein the engine is disposed in an engine room placed at the stern of the ship, the bunkering manifold is disposed at one side of the stern of the ship, the vent riser is disposed at the stern of the ship, and the bunkering manifold and the vent riser are disposed at opposite sides of the ship, respectively~~and the fuel gas tank is disposed above the engine room~~.

Particularly, the fuel gas tank may be disposed in a longitudinal direction of the ship.

In addition, the ship may be a container ship.

Further, the fuel gas tank may be disposed on a first deck and a second deck may be disposed above the fuel gas tank to allow a container to be loaded on the second deck.

Further, the fuel gas supply system may further include a fuel gas supply (FGS) room, which includes machinery for supplying the fuel gas to the engine after

【CLAIMS】

【Claim 1】

A fuel gas supply system of a ship, comprising:

an engine generating driving force using fuel gas; ~~and~~

a fuel gas tank storing the fuel gas to be supplied to the engine~~,~~;

a bunkering manifold receiving fuel gas supplied from an outside of the ship and supplying the fuel gas to the fuel gas tank; and

a vent riser discharging boil-off gas (BOG) of the fuel gas tank in an emergency;

wherein the engine is disposed in an engine room placed at the stern of the ship,

the bunkering manifold is disposed at one side of the stern of the ship,

the vent riser is disposed at the stern of the ship, and

the bunkering manifold and the vent riser are disposed at opposite sides of the ship, respectively~~and the fuel gas tank is disposed above the engine room~~.

【Claim 2】

The fuel gas supply system of a ship according to claim 1, wherein the fuel gas tank is disposed in a longitudinal direction of the ship.

【Claim 3】

The fuel gas supply system of a ship according to claim 1, wherein the ship is a container ship.

【Claim 4】

The fuel gas supply system of a ship according to claim 3, wherein the fuel gas tank is disposed on a first deck and a second deck is disposed above the fuel gas tank to allow a container to be loaded on the second deck.

【Claim 5】

The fuel gas supply system of a ship according to any one of claims 1 to 4, further comprising:

a fuel gas supply (FGS) room including machinery for supplying the fuel gas to the engine after pressurizing the fuel gas stored in the fuel gas tank.

【Claim 6】

The fuel gas supply system of a ship according to claim 5, wherein the fuel gas supply room comprises:

a fuel gas supply line transferring the fuel gas stored in the fuel gas tank to the engine;

a high pressure pump pressurizing the fuel gas stored in the fuel gas tank; and

a heater heating the pressurized fuel gas.

【Claim 7】

The fuel gas supply system of a ship according to claim 5, wherein the fuel gas supply room is disposed above the engine room.

【Claim 8】

~~A~~ The fuel gas supply ~~method~~ system of a ship~~, comprising:~~

~~pressurizing fuel gas stored in a fuel gas tank so as to satisfy requirements of an engine; and~~

~~heating the pressurized fuel gas and supplying the heated fuel gas to the engine,~~

~~wherein the engine is disposed in an engine room placed at the stern of the ship and~~ according to any one of claims 1 to 4, wherein the fuel gas tank is disposed above the engine room.

【Claim 9】

The fuel gas supply ~~method~~ system of a ship according to any one of claims ~~8~~1 to 4, wherein the bunkering manifold is disposed at a side of the fuel gas tank~~the fuel gas tank is disposed in a longitudinal direction of the ship~~.

【Claim 10】

The fuel gas supply ~~method~~ system of a ship according to any one of claims

~~8~~1 to 4, wherein the bunkering manifold receives fuel gas supplied from an LNG bunkering ship~~the ship is a container ship~~.

【Claim 11】

The fuel gas supply ~~method~~ system of a ship according to claim ~~10~~5, wherein the vent riser discharges boil-off gas from the fuel gas supply room~~the fuel gas tank is disposed on a first deck and a second deck is disposed above the fuel gas tank to allow a container to be loaded on the second deck~~.

~~【Claim 12】~~

~~A fuel gas supply system of a ship, comprising:~~

~~an engine generating driving force using fuel gas;~~

~~a first fuel gas tank storing fuel gas to be supplied to the engine; and~~

~~a fuel gas supply (FGS) room including machinery for pressurizing the fuel gas stored in the fuel gas tank and supplying the pressurized fuel gas to the engine,~~

~~wherein the engine is disposed in an engine room placed at the stern of the ship and the fuel gas tank is disposed above the engine room~~.

【Claim ~~13~~12】

The fuel gas supply system of a ship according to claim ~~12~~5, wherein the fuel gas supply room is disposed ~~near the first~~at a side of the fuel gas tank.

【Claim ~~14~~13】

The fuel gas supply system of a ship according to any one of claims ~~12~~1 to 4, further comprising:

~~a second~~ two fuel gas tanks~~ storing fuel gas to be supplied to the engine~~,

wherein the fuel gas supply room is disposed between the ~~first~~ two fuel gas tanks~~ and the second fuel gas tank~~.

~~【Claim 15】~~

~~The fuel gas supply system of a ship according to claim 12, wherein the fuel gas supply room comprises:~~

~~a fuel gas supply line transferring the fuel gas stored in the fuel gas tank to the engine;~~

~~a high pressure pump pressurizing the fuel gas stored in the fuel gas tank; and a heater heating the pressurized fuel gas.~~

~~【Claim 16】~~

~~The fuel gas supply system of a ship according to claim 12, wherein the ship is a container ship.~~

~~【Claim 17】~~

~~The fuel gas supply system of a ship according to claim 12, wherein the fuel gas tank is disposed above the engine room.~~

~~【Claim 18】~~

~~A fuel gas supply method of a ship, comprising:~~

~~pressurizing fuel gas stored in a fuel gas tank using a high pressure pump so as to satisfy requirements of an engine; and~~

~~heating the pressurized fuel gas using a heater and supplying the heated fuel gas to the engine,~~

~~wherein the engine is disposed in an engine room placed at the stern of the ship, and a fuel gas supply room including the high pressure pump and the heater is disposed above the engine room.~~

~~【Claim 19】~~

~~The fuel gas supply method of a ship according to claim 18, wherein the fuel gas supply room is disposed near the fuel gas tank.~~

~~【Claim 20】~~

~~The fuel gas supply method of a ship according to claim 18, wherein the ship is a container ship.~~

~~【Claim 21】~~

~~A fuel gas supply system of a ship, comprising:~~

~~an engine generating driving force using fuel gas;~~

~~a fuel gas tank storing fuel gas to be supplied to the engine; and~~

~~a bunkering manifold receiving fuel gas supplied from an outside of the ship and supplying the fuel gas to the fuel gas tank,~~

~~wherein the engine is disposed in an engine room placed at the stern of the ship and the bunkering manifold is disposed at one side of the stern of the ship.~~

~~【Claim 22】~~

~~The fuel gas supply system of a ship according to claim 21, wherein the bunkering manifold is disposed at a side of the fuel gas tank.~~

~~【Claim 23】~~

~~The fuel gas supply system of a ship according to claim 21, further comprising:~~

~~a vent riser discharging boil-off gas (BOG) of the fuel gas tank in an emergency.~~

~~【Claim 24】~~

~~The fuel gas supply system of a ship according to claim 23, wherein the vent riser is disposed at the stern of the ship.~~

~~【Claim 25】~~

~~The fuel gas supply system of a ship according to claim 24, wherein the bunkering manifold and the vent riser are disposed at opposite sides of the ship, respectively.~~

~~【Claim 26】~~

~~The fuel gas supply system of a ship according to claim 21, wherein the bunkering manifold receives fuel gas supplied from an LNG bunkering ship.~~

~~【Claim 27】~~

~~The fuel gas supply system of a ship according to claim 21, wherein the ship is a container ship.~~

~~【Claim 28】~~

~~A fuel gas supply system of a ship, comprising:~~

~~an engine generating drive force using fuel gas;~~

~~a fuel gas tank storing fuel gas to be supplied to the engine; and~~

~~a vent riser discharging boil-off gas (BOG) of the fuel gas tank in an emergency,~~

~~wherein the engine is disposed in an engine room placed at the stern of the ship and the vent riser is disposed at one side of the stern of the ship.~~

~~[Claim 29]~~

~~The fuel gas supply system of a ship according to claim 28, further comprising:~~

~~a fuel gas supply (FGS) room including machinery for pressurizing the fuel gas stored in the fuel gas tank and supplying the pressurized fuel gas to the engine.~~

~~[Claim 30]~~

~~The fuel gas supply system of a ship according to claim 29, wherein the vent riser discharges boil-off gas from the fuel gas supply room.~~

~~[Claim 31]~~

~~The fuel gas supply system of a ship according to claim 28, wherein the ship is a container ship.~~