

WHAT IS CLAIMED IS:

1. An oil loading apparatus which is connected to a supply pipe and loads oil in a storage tank, the oil loading apparatus comprising:

a loading pipe which is connected to the supply pipe and is disposed in a vertical direction in the inside of the storage tank;

a pressure drop module which includes a pressure drop pipe, one end of which is connected to a lower end of the loading pipe, and a multi-hole orifice which is installed in a transverse direction in an inside of the pressure drop pipe and induces a pressure drop of the oil which is discharged from the loading pipe; and

a first static mixer which is connected to the other end of the pressure drop pipe and mixes the oil which is discharged from the pressure drop pipe; and

a buffer tank into which the oil, which has passed through the first static mixer, flows.

2. The oil loading apparatus of claim 1, further comprising:

a T-shaped branch pipe which is interposed between the pressure drop pipe and the first static mixer and includes a vertical pipe, one end of which is communication with the other end of the pressure drop pipe and the other end of which is closed, and a horizontal pipe, which is in communication with the vertical pipe and which is disposed separately from the other end of the vertical pipe by a predetermined distance, while extending in the transverse direction from one sidewall of the vertical pipe and being connected to the first static mixer.

~~3. The oil loading apparatus of claim 1, further comprising:~~

~~a buffer tank into which the oil, which has passed through the first static mixer, flows.~~

~~4. The oil loading apparatus of claim 3, wherein the buffer tank comprises:~~

~~a discharge pipe which connects the first static mixer with the buffer tank and is disposed on the lower end of the buffer tank; and~~

~~an oil supply pipe which supplies the oil from the buffer tank to the storage tank, wherein an outlet of the discharge pipe does not face an inlet of the oil supply pipe.~~

54. The oil loading apparatus of claim 31, further comprising:

a pressure line installed in an external side of the buffer tank, one end of which is connected to one side of the buffer tank, and the other end of which is connected to the other end of the buffer tank;

a pump which is disposed in the pressure line and moves the oil in the buffer tank along the pressure line;

an educator which is disposed in the pressure line; and

a suction line which connects the educator with an upper end of at least one of the buffer tank and the storage tank.

65. The oil loading apparatus of claim 54, wherein a second static mixer is interposed between the educator and the other end of the pressure line.

76. The oil loading apparatus of claim 54, wherein the other end of the input line is connected to the first static mixer.

87. The oil loading apparatus of claim 1, wherein the first static mixer comprises: a tubular body which is connected to the other end of the pressure drop pipe; and a mixing screw which is disposed in a longitudinal direction within the tubular body.

98. The oil loading apparatus of claim 1, wherein the orifice opens and closes an inside of the pressure drop pipe according to rotation.

109. The oil loading apparatus of claim 1, wherein the loading pipe and the pressure drop module form one loading module, there are a plurality of loading modules, and the pressure drop pipe of each of the loading modules is connected to one first static mixer.

~~11~~10. The oil loading apparatus of claim 1, wherein there are a plurality of storage tanks, and the storage tank comprises:

an oil supply pipe which connects the plurality of storage tanks in order to distribute the oil to the plurality of storage tanks; and

5        a bypass loading line which is branched in the loading pipe and is connected to the oil supply pipe.

~~12~~11. The oil loading apparatus of claim 1, further comprising:

10        a connection pipe which is interposed between the loading pipe and the pressure drop module and connects the loading pipe with the pressure drop module.

~~13~~12. An oil carrier comprising:

a ship body;

15        a storage tank which is prepared in an inside of the ship body and where oil, which flows in from a supply pipe, is loaded; and

an oil loading apparatus according to one of claims 1 to ~~12~~11.

WHAT IS CLAIMED IS:

1. An oil loading apparatus which is connected to a supply pipe and loads oil in a storage tank, the oil loading apparatus comprising:

5 a loading pipe which is connected to the supply pipe and is disposed in a vertical direction in the inside of the storage tank;

a pressure drop module which includes a pressure drop pipe, one end of which is connected to a lower end of the loading pipe, and a multi-hole orifice which is installed in a transverse direction in an inside of the pressure drop pipe and induces a pressure drop of the oil which is discharged from the loading pipe;

10 a first static mixer which is connected to the other end of the pressure drop pipe and mixes the oil which is discharged from the pressure drop pipe; and

a buffer tank into which the oil, which has passed through the first static mixer, flows.

15 2. The oil loading apparatus of claim 1, further comprising:

a T-shaped branch pipe which is interposed between the pressure drop pipe and the first static mixer and includes a vertical pipe, one end of which is communication with the other end of the pressure drop pipe and the other end of which is closed, and a horizontal pipe, which is in communication with the vertical pipe and which is disposed separately from the other end of the vertical pipe by a predetermined distance, while extending in the transverse direction from one sidewall of the vertical pipe and being connected to the first static mixer.

3. The oil loading apparatus of claim 1, wherein the buffer tank comprises:

25 a discharge pipe which connects the first static mixer with the buffer tank and is disposed on the lower end of the buffer tank; and

an oil supply pipe which supplies the oil from the buffer tank to the storage tank, wherein an outlet of the discharge pipe does not face an inlet of the oil supply pipe.

4. The oil loading apparatus of claim 1, further comprising:

5 a pressure line installed in an external side of the buffer tank, one end of which is connected to one side of the buffer tank, and the other end of which is connected to the other end of the buffer tank;

a pump which is disposed in the pressure line and moves the oil in the buffer tank along the pressure line;

an educator which is disposed in the pressure line; and

10 a suction line which connects the educator with an upper end of at least one of the buffer tank and the storage tank.

5. The oil loading apparatus of claim 4, wherein a second static mixer is interposed between the educator and the other end of the pressure line.

15 6. The oil loading apparatus of claim 4, wherein the other end of the input line is connected to the first static mixer.

7. The oil loading apparatus of claim 1, wherein the first static mixer comprises:

20 a tubular body which is connected to the other end of the pressure drop pipe; and a mixing screw which is disposed in a longitudinal direction within the tubular body.

8. The oil loading apparatus of claim 1, wherein the orifice opens and closes an inside of the pressure drop pipe according to rotation.

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9. The oil loading apparatus of claim 1, wherein the loading pipe and the pressure drop module form one loading module, there are a plurality of loading modules, and the pressure drop pipe of each of the loading modules is connected to one first static mixer.

10. The oil loading apparatus of claim 1, wherein there are a plurality of storage tanks, and the storage tank comprises:

an oil supply pipe which connects the plurality of storage tanks in order to distribute the oil to the plurality of storage tanks; and

5 a bypass loading line which is branched in the loading pipe and is connected to the oil supply pipe.

11. The oil loading apparatus of claim 1, further comprising:

10 a connection pipe which is interposed between the loading pipe and the pressure drop module and connects the loading pipe with the pressure drop module.

12. An oil carrier comprising:

a ship body;

15 a storage tank which is prepared in an inside of the ship body and where oil, which flows in from a supply pipe, is loaded; and

an oil loading apparatus according to one of claims 1 to 11.