May 16, 1961 A. M. ATKINSON ET AL 2,984,198

MEANS FOR LOADING OIL ON VESSELS AND DISCHARGING OIL THEREFROM

Filed Oct. 8, 1958 2 Sheets-Sheet 1

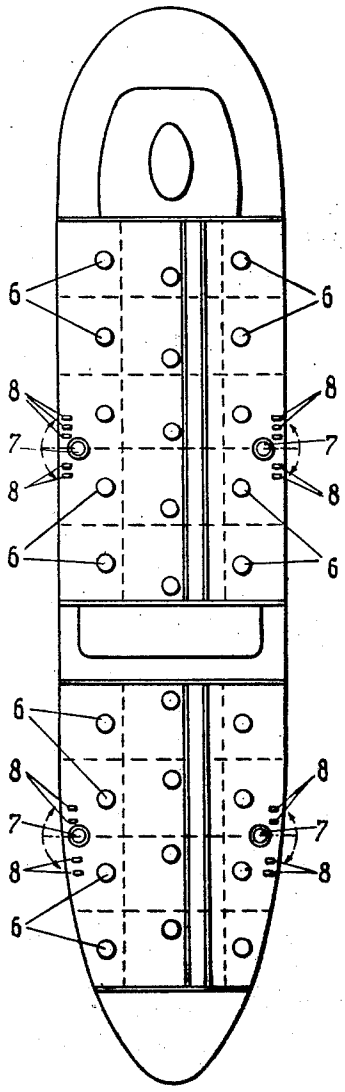


FIG. 1

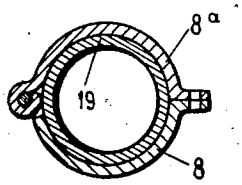


FIG. 4

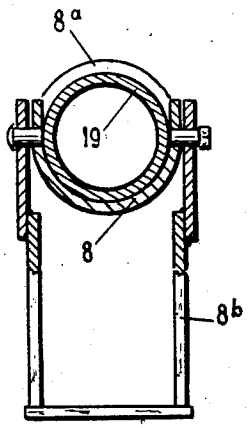


FIG. 5

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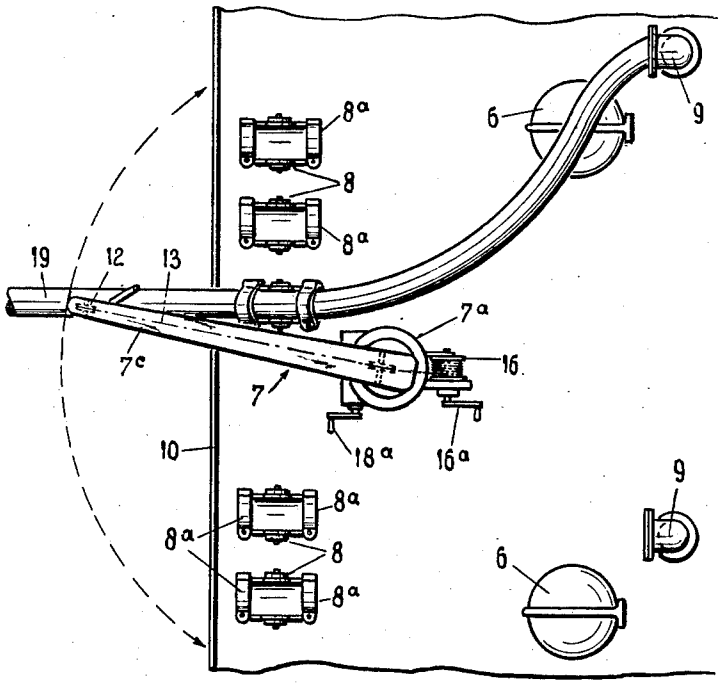


FIG. 2

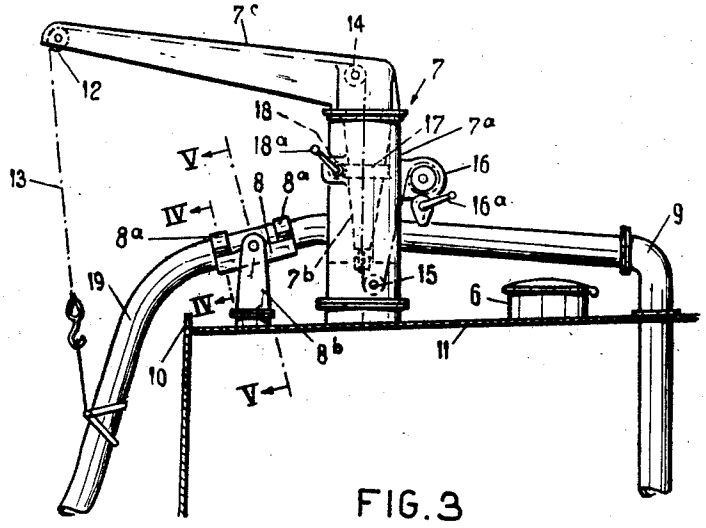


FIG. 3

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2,984,198

MEANS FOR LOADING OIL ON VESSELS AND DISCHARGING OIL THEREFROM

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3 Claims. (Cl. 114—74)

This invention relates to means operatively associated with tankers for loading and discharging oil.

It is well known that a tanker comprises a plurality of oil tanks below its main deck, and it is common practice for each tank to be provided with, in addition to a standpipe opening close to the tank bottom and extending to a level above the main deck, a covered manhole also situated some distance above said deck. The standpipes are usually interconnected by valved conduits, so that all tanks can be loaded or discharged, if desired, through one standpipe, or so that a restricted number of standpipes can be employed by means of special port equipment. In the absence of such equipment, use is often made of one or more hoses or other flexible pipes each having one end connected to a standpipe and suspended from and held in position by a derrick or the like.

It will be understood that such hoses suffer severely from wear and tear, especially where they engage bulwarks, and that, as a consequence, damage may occur.

The invention, which has for its object the avoiding of said wear and tear as far as possible, contemplates that near the bulwark are mounted, in addition to a deckcrane, one or more trough-shaped cradles adapted for free swinging movement about a longitudinal axis and each adapted to support and secure a hose or the like out of engagement with the bulwark independently of the associated crane. Owing to said hinge, the cradle is adapted for self-adjustment athwartships, so that a hose or the like, suspended from said crane, is prevented from grazing the bulwark.

In accordance with the invention, the pillar of a curved crane jib carries a worm wheel meshing with a self-braking worm rotatable in bearings of the stationary crane foot, said worm being provided with a crank handle by means of which an attendant can impart rotary movement about a vertical axis to the jib.

Furthermore, the rope from which the hose is to be suspended can, in accordance with the invention, be passed from a sheave in the head of the overhanging portion of the crane jib over a sheave mounted at the junction between said portion and the pillar, thence vertically down along the axis of rotation of the jib and over a sheave mounted near the bottom of the crane foot, and thence to a winch secured to the foot. By means of said winch the rope can be hauled in and payed out.

In order that the invention may be well understood, reference is had to the accompanying drawing, in which:

Fig. 1 is a diagrammatic plan view of a tanker, provided with deck cranes and cradles in accordance with the invention,

Fig. 2 is a plan view of part of said tanker drawn on an enlarged scale,

Fig. 3 is a side view corresponding to Fig. 2,

Fig. 4 is a section along line IV—IV in Fig. 3, and

Fig. 5 is a section along line V—V in Fig. 3.

In Fig. 1, the numeral 6 indicates covered manholes of tanks situated below the main deck. The numerals 7 and 8 designated deck-cranes and cradles provided, respectively, in accordance with the invention. The stationary pipes opening close to the tank bottoms are indicated by 9 in Figs. 2 and 3.

As shown in Figs. 2 and 3, the stationary foot 7*a* of

the crane 7 is mounted some distance inwardly from the edge 10 of the main deck 11. Rotatable in said foot is the pillar 7*b* of the jib, whose overhanging portion 7*c* is provided in its head with a sheave 12 for the hoisting rope 13. The latter is passed over a sheave 14 mounted at the junction between the overhanging portion and the pillar, and thence over a sheave 15 mounted near the bottom of the foot 7*a* to the drum of a winch 16 adapted to be operated by means of a crank handle 16*a*.

Fitted to the pillar 7*b* is a worm wheel 17, which meshes with a self braking worm 18 operated by a crank handle 18*a*.

Mounted close to the bulwark 10 and on either side of the crane 7 are one or more cradles, each formed by a semi-circular trough 8 adapted to support a hose independently of the crane and provided with clamping means 8*a* (Fig. 4) for preventing a hose thus supported from lengthwise movement relative to the cradle. As stated hereinbefore, the cradle is self-adjusting, owing to its being hinged about a longitudinal axis to a suitable bracket 8*b* (Fig. 5) secured to the deck 11.

Fig. 2 shows a hose 19 suspended from the rope 13 and supported by a cradle 8 so as to clear the bulwark 10 of the ship. The inboard end of said hose is connected, by suitable coupling means, with a standpipe 9, so that by means thereof oil can be supplied to, or withdrawn from said tank.

It will be understood that the hose referred to above could be replaced by a plurality of pipe sections interconnected by flexible couplings, and that the cradle, instead of being hinged about one axis extending in longitudinal direction, could also be mounted in its bracket by a universal joint, so as to also be rotatable about a vertical axis. These and other modifications fall within the scope and the spirit of the present invention.

What we claim is:

1. A vessel comprising a deck, a plurality of tanks adapted for storing liquid loads below said deck, standpipes connected with the tanks and extending upwardly from the deck, a plurality of hoses detachably connected to the standpipes, a crane on said deck for selectively handling said hoses for connecting the same to the standpipes, and a plurality for trough-shaped cradles each including a clamp for holding one of said hoses with the latter connected to one of said standpipes, said cradles being tiltably mounted on said deck adjacent the edge thereof so as to hold the hoses clear of the side of the vessel.

2. A vessel as claimed in claim 1 wherein said crane is rotatable and comprises a pillar including a worm wheel, a worm engaging said wheel and a crank coupled to the worm for rotating the same.

3. A vessel as claimed in claim 2 wherein the crane comprises an overhang connected to said pillar, a foot rotatably accommodating said pillar, sheaves on the overhang, at the junction of the overhang and pillar and at the bottom of said foot respectively, a winch on said foot, and a cable extending from said winch along said sheaves.

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