J. A. OUTTERSON.

CARGO DISCHARING MECHANISM.

APPLICATION FILED JUNE 16, 1913.

1,112,647. Patented Oct. 6, 1914.

Fig. 1.

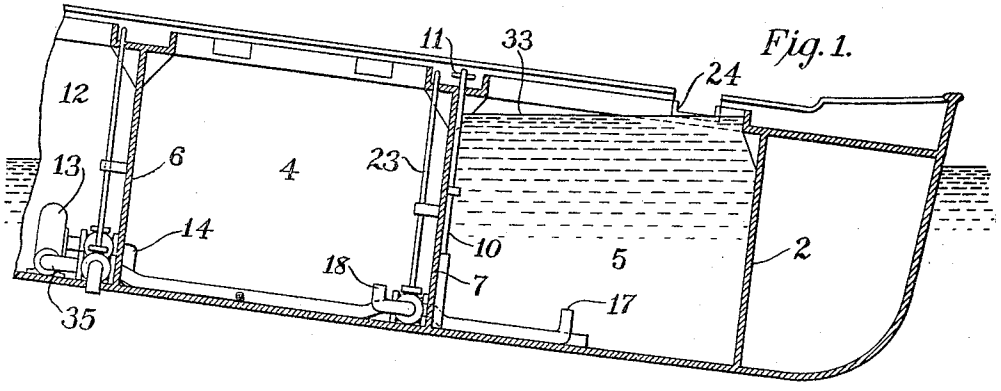


Fig. 2.

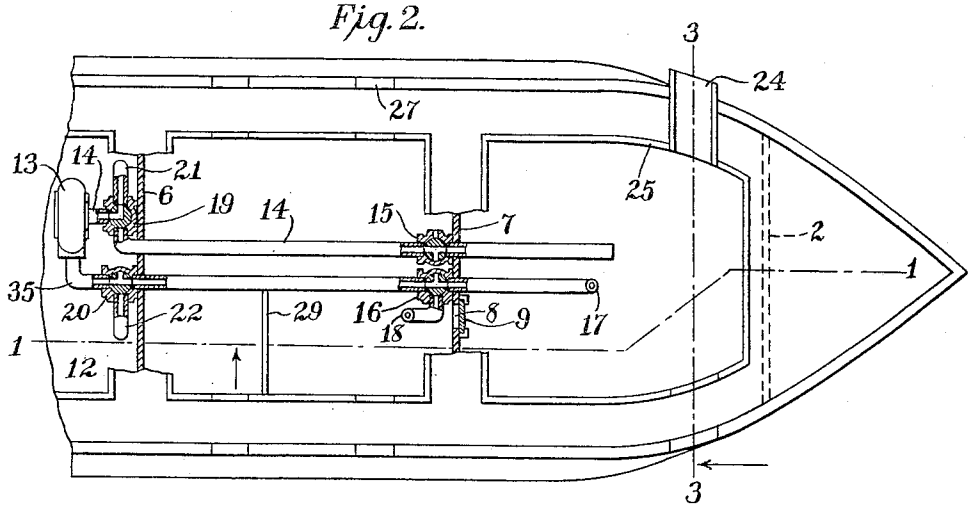


Fig. 3.

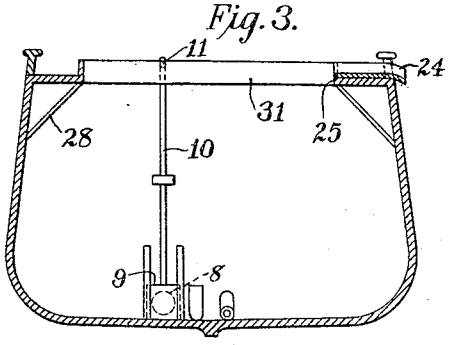
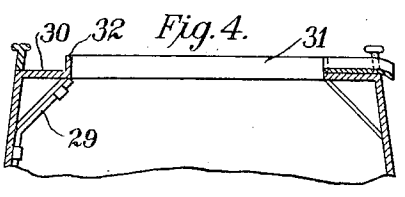


Fig. 4.



Witnesses:

Arthur Frisch

Chas. W. La Rue

Inventor:
James A. Outterson
by Wilbur M Stone
his Attorney.

UNITED STATES PATENT OFFICE.

JAMES A. OUTTERSON, OF CARTHAGE, NEW YORK.

CARGO-DISCHARGING MECHANISM.

1,112,647. Specification of Letters Patent. Patented Oct. 6, 1914.

Application filed June 16, 1913. Serial No. 773,928.

To all whom it may concern:

Be it known that I, JAMES A. OUTTERSON, a citizen of the United States, and a resident of Carthage, in the county of Jefferson and State of New York, have invented certain new and useful Improvements in Cargo-Discharging Mechanisms, of which the following is a specification.

This invention relates to cargo discharging mechanisms and has for its object to provide means of the class specified, simple in construction and rapid and efficient in operation.

My improved mechanism is particularly adapted for the equipment of boats of various types, and in the drawings accompanying this specification, Figure 1, is a longitudinal sectional elevation on line 1—1 of Fig. 2. Fig. 2 is a plan view corresponding with Fig. 1. Fig. 3 is a cross-sectional elevation on line 3—3 of Fig. 2, and Fig. 4 is a fragmentary view similar to Fig. 3 and illustrating some modifications of my improvements.

Before describing the invention in detail I desire to have it understood that the invention is not limited to the particular construction and arrangement of parts which I have illustrated and shall hereinafter describe, and that various changes may be made in the mechanism without departing from the spirit or scope of the invention, and that the phraseology which I employ is for the purpose of description and not of limitation.

My improved cargo discharging means is particularly adapted for discharging cargoes of bulk material, particularly such material as readily floats in water and is not injured by immersion in water. One class of such material is timber or logs in the ordinary 4 foot lengths or other lengths.

Heretofore, it has been customary to load the hold of a vessel or the separate compartments thereof, such as 4 and 5, with wood in short lengths. When the vessel reaches the port of discharge, the logs of such cargo are gathered together in bundles and hoisted out in slings with the usual tackle. This method of discharge is highly laborious and slow. By my improved method I am able by the introduction of water into said hold or a compartment thereof to raise the contents to the deck level where the individual logs or component parts of the cargo will fall or may be directed overboard into suitable receptacles or into the water alongside the vessel.

While it is obvious that my improvements may be embodied in very simple installation, I have chosen to illustrate those improvements applied to a cargo hold of a steel ship and which ship may or may not be provided with some well-known propelling apparatus, not shown. As illustrated in Figs. 1 and 2, said cargo hold is divided into a plurality of cargo receptacles or compartments 4, 5, by means of the usual transverse walls as 2, 6 and 7, and each compartment is provided with a discharge opening, herein illustrated as a hatch, as 31 to compartment 5. Wall 7 dividing compartment 4 from compartment 5 may be provided with passage 8 therethrough, and gate 9 for opening and closing said passage. Said gate may be provided with stem 10, having handle 11 in the upper end thereof for operating said gate.

Located in some convenient portion of the vessel such as engine-room 12 is pump 13 having inlet pipe 14 and outlet pipe 35, connected therewith. Said pipes pass through walls 6 and 7 into compartment 5, and within compartment 4 said pipes are provided with three-way valves or cocks 15, 16 respectively. The discharge end 17 of pipe 35 may be bent upwardly and the side discharge 18 from valve 16 may be similarly bent upwardly. This upward bending of said discharge portions is to utilize the force of the outward flow of the water to assist the upward movement of the floatable cargo. Said pipes 14 and 35 are also provided with valves 19, 20 respectively, preferably within compartment 12. The side port of valve 19 is connected by pipe 21 with the outside of the vessel, to serve as an intake for water and the side port of valve 20 is provided with a similar pipe 22 connected with the outside of the vessel for discharge water. These several valves may be operated from the deck level by means of elongated stems, as 23 to valve 16. Valve 19 is provided with a right-angled two-way plug and valves 15, 16 and 20 are provided with T shaped three-way plugs respectively.

At or near the deck level 30 troughs or scuppers as 24 may be provided leading from the edge as 25 of hatch as 31 and thence outboard. As many of these scuppers as are needed or desired may be provided and they may be removable, as shown,

whereby, when not in use, they may be stowed and the railing, as 32, of the hatch restored and the bulwarks 27 be replaced into continuity.

In some cases where the hatch opening is shorter transversely than the width of the vessel, I provide deflectors 28 to guide the cargo in its upward movement from the hold through said hatchway and I find it desirable to sometimes provide one or more pipes, as 29, with their discharge ends pointed upwardly adjacent to the edge of the hatch opening, as shown in Fig. 4. Thus, by connecting said pipe 29 with the source of water supply as pump 13, the discharge of the cargo through said hatch is facilitated.

The preferred method of operation of my improved device is as follows: Assuming that cargo compartments 4 and 5 are filled with floatable cargo, such as logs in convenient lengths, I set valves 19, 16 and 20 in the position shown in Fig. 2 and start pump 13. Water is thereby taken through pipe 21 into said pump and discharged through pipe 35 out of nozzle 17 into compartment 5. Said operation is continued until the contents of said compartment 5 are raised to the level indicated by water-line 33, Fig. 1, when the logs may be directed outwardly through scupper 24 as they are successively raised to that level. The filling of the forward compartment 5 automatically depresses the forward end of the boat whereby said forward scupper or it and its opposite scupper, not shown, may be employed for directing the cargo overboard. After this compartment has been emptied valves 19 and 16 are rotated a quarter turn in anti-clockwise direction, valves 15 and 20 remaining as shown in Fig. 2. Thereupon the pump is again started, withdrawing water from compartment 5 and discharging it through outlet 18 into compartment 4. For promptly transferring a portion of the water from compartment 5 to compartment 4, at the beginning of the filling of said compartment 4, gate 9 may be raised, thereby allowing the water to flow freely and rapidly from compartment 5 into compartment 4 until a uniformity of level is established in both said compartments, when said gate will be closed. This use of passage 8 may be in addition to the use of the pump or to the exclusion of said pump, as desired. Then the operation of pump 13 is continued until compartment 5 is emptied of water and compartment 4 is filled, thereby raising the cargo of compartment 4 up to and above deck level where it falls, or is directed, overboard through scuppers or otherwise, as desired. After said compartment 4 has been emptied, valve 15 is rotated a quarter turn in clockwise direction and valve 20 is rotated a quarter turn in anti-clockwise direction, and the pump again started. The water contained in compartment 4 is thereby discharged overboard through discharge pipe 22.

It will be obvious that a series of more than two compartments as 4, 5, may be employed, or that one compartment may be used, if desired. Also that in a vessel provided with a plurality of compartments, said compartments may be emptied in any succession desired, or all at one time by suitably manipulating the inlet and outlet valves.

I claim:

1. A boat including in combination a cargo hold, a hatchway therein, means for supplying water to said hold for discharging floatable cargo through said hatchway, and means for removing the water from said hold.

2. A boat including in combination a cargo hold, a hatchway therein, means for supplying water to said hold for discharging floatable cargo through said hatchway, means for directing said cargo overboard from said hatchway, and means for removing said water from said hold.

3. A boat including in combination a plurality of cargo compartments, means for supplying water to one of said compartments, means for transferring said water from one compartment to another compartment, and means for discharging said water from said last mentioned compartment.

4. A boat including in combination a cargo hold, a pump, inlet and outlet pipes connecting said pump with a source of water supply, outlet and inlet pipes connecting said pump with said cargo hold and valves in said pipes respectively for at one time directing water from without the boat into said cargo hold and at another time for directing said water from said cargo hold to without said boat.

5. A boat including in combination a plurality of cargo compartments, a pump, an inlet pipe connecting said pump with a source of water supply, an outlet pipe from said pump, inlet and outlet pipes connecting said pump with said cargo compartments, and valves in said pipes for at one time directing water from said source of supply into one cargo compartment and thereafter for directing the water from said cargo compartment into another of the cargo compartments and at another time for directing the water from said other cargo compartment to without said boat.

6. A boat including in combination a cargo hold, a hatchway therein, means for supplying water to said hold for discharging floatable cargo therefrom, deflectors in said hold extending from the sides thereof to the adjacent edges respectively of the hatchway, and means for removing the water from said hold.

7. A boat including in combination a

cargo hold having a discharge opening therein, one or more pipes having their discharge ends pointed upwardly adjacent to the edge of said discharge opening, means for supplying water to said pipes, and means for removing water from said hold.

Signed at New York, in the county of New York and State of New York, this 13th day of June, 1913, before two subscribing witnesses.

JAMES A. OUTTERSON.

Witnesses:

WILBUR M. STONE,

CHAS. W. LA RUE.