H. R. McCLELLAND AND J. McLEAN.

CARGO VESSEL.

APPLICATION FILED JULY 21, 1920.

1,401,623.

Patented Dec. 27, 1921.

3 SHEETS—SHEET 1.

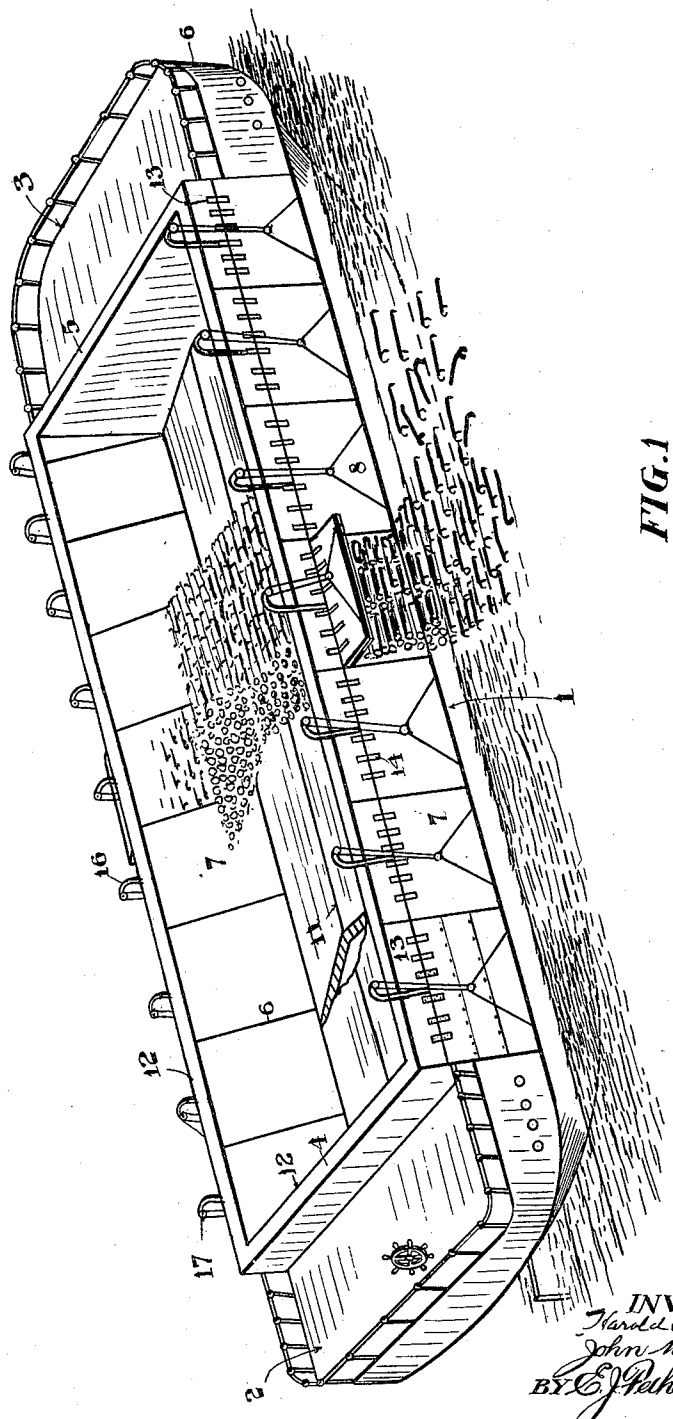


FIG. 1

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3 SHEETS—SHEET 2.

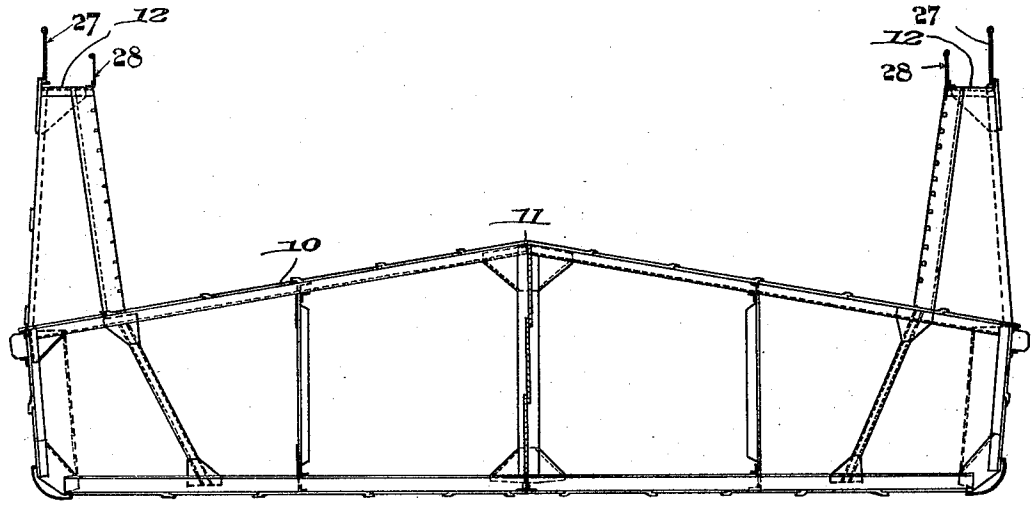


FIG. 2

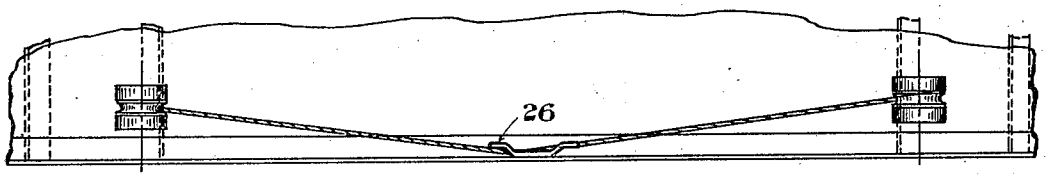


FIG. 3

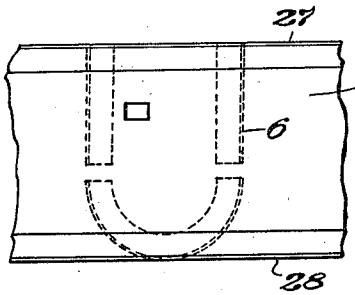


FIG. 4

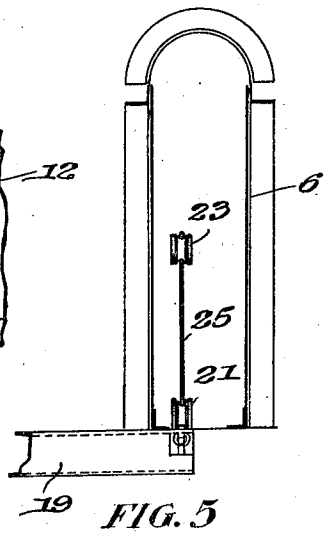


FIG. 5

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3 SHEETS—SHEET 3.

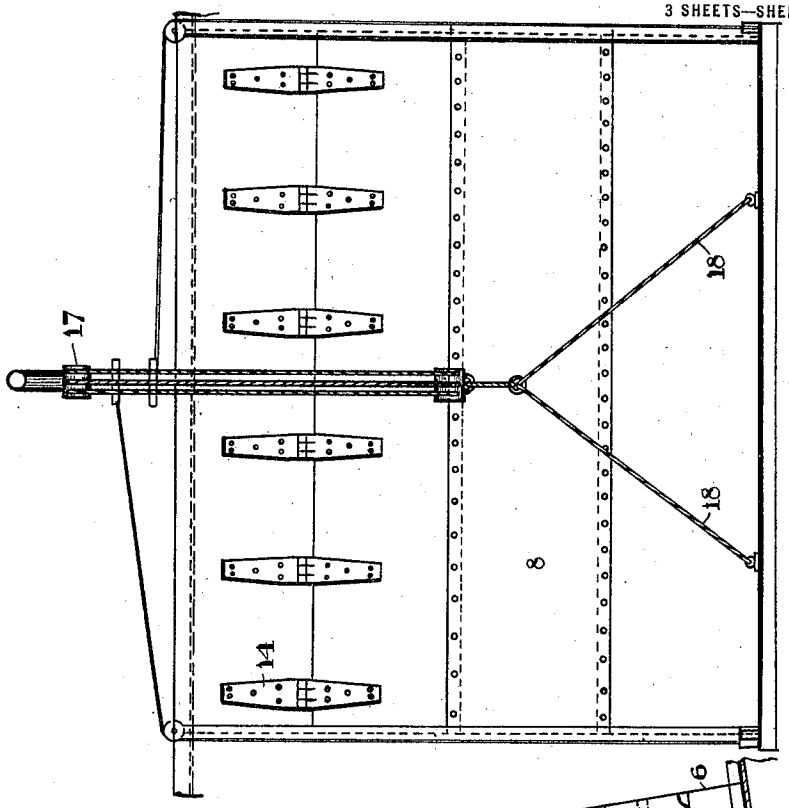


FIG. 6

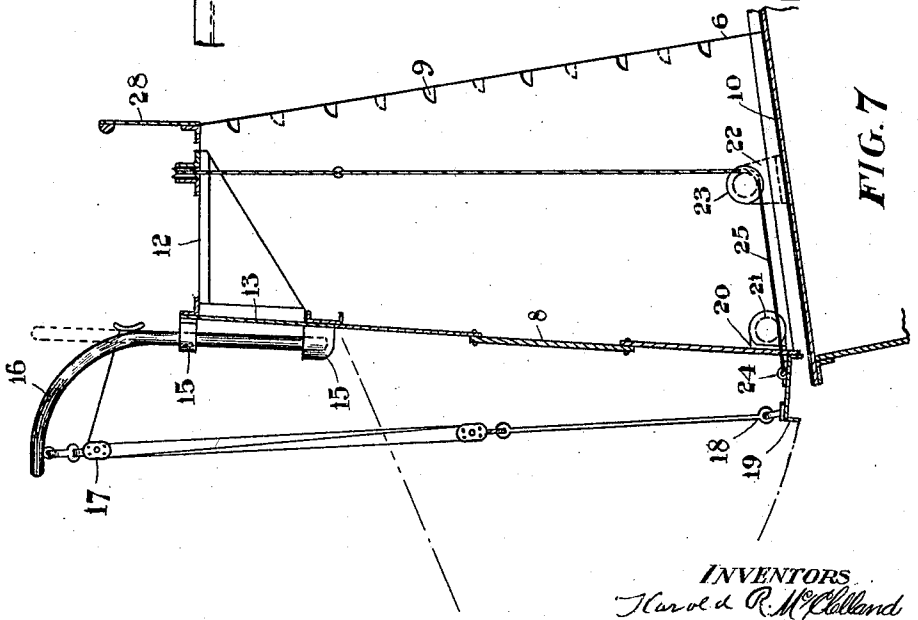


FIG. 7

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UNITED STATES PATENT OFFICE.

HAROLD ROBINSON McCLELLAND AND JOHN McLEAN, OF MONTREAL, QUEBEC, CANADA, ASSIGNORS TO N. E. McCLELLAND & COMPANY, LIMITED, OF MONTREAL, CANADA.

CARGO VESSEL.

1,401,623. Specification of Letters Patent. **Patented Dec. 27, 1921.**

Application filed July 21, 1920. Serial No. 397,935.

To all whom it may concern:

Be it known that we, HAROLD ROBINSON McCLELLAND and JOHN McLEAN, residing at 286 St. James street, in the city and district of Montreal, in the Province of Quebec, in the Dominion of Canada, have invented a new and useful Cargo Vessel, of which the following is the specification.

The invention relates to cargo vessels as described in the present specification and illustrated in the accompanying drawings that form part of the same.

The invention consists essentially of the novel structure, whereby the deck or hold flooring can be readily cleared of cargo through the peculiar formation of the discharge ports, closures and other parts incident to this vessel.

The objects of the invention are to insure despatch in the unloading of cargoes particularly those shipped in bulk or floating cargoes such as pulp wood, that may readily be dumped into the water beside the vessel where she unloads; to simplify the operation of closures for discharge ports and thereby materially reduce the expenses of unloading in the matter of labor; to facilitate the transport of pulp wood, though many other forms of merchandise may be handled; to devise a vessel that will be seaworthy and at the same time readily opened up for universal discharge purposes; and generally to provide a comparatively cheap vessel to build and one that will offer the best facilities in unloading without affecting its efficiency in stress or storm.

In the drawings, Figure 1 is a perspective view of the vessel showing two discharge ports open to disclose the invention.

Fig. 2 is a transverse sectional view showing the peculiar form of the deck or hold flooring and the buttresses.

Fig. 3 is a detail showing the mechanism employed for maintaining the port closures in their shut position.

Fig. 4 is a lower end plan view, showing a detail of a buttress.

Fig. 5 is an upper end plan view showing a detail of a buttress.

Fig. 6 is an enlarged detail of a discharge port closure.

Fig. 7 is an enlarged view showing the port closure in section, a buttress and the opening mechanism.

Like numerals of reference indicate corresponding parts in each figure.

Referring to the drawings, the hull is made in any desired shape of the flat bottomed or substantially flat bottomed type of vessel and may be a consort of a towing vessel or may be self propelled according to the trade in which it is employed or the conditions under which it is used and this invention does not concern the driving of the vessel or the structural features that pertain to the details of struts, braces and beams, but rather to the buoyancy and hold facilities.

The hull 1 is decked in at the ends 2 and 3 for purposes of accommodation and navigation and the decks terminate inwardly at the hold coamings 4 and 5 which project from the end walls of the hold.

The buttresses 6 project upwardly from the hull 1 above the load water line and slope inwardly and form recesses between the discharge ports 7 and at their outer ends frames for the closures 8, the step holes 9 being cut in the plate of the buttresses on their inner sides.

The flooring 10 of the hold rises in a gentle slope from the sides of the hull 1 under the buttresses 6 to the peak 11, the said flooring sloping from the longitudinal center or peak 11 to the sides of the hold and to the discharge ports 7.

The flooring 10 completely closes in the top of the buoyancy chamber and materially contributes to the stanchness and safety of the vessel.

The longitudinal platforms 12 extend between the end walls or coamings 4 and 5 and the inclined side platings 13 form bases for the hinges 14, carrying the closures 8, and for the lugs 15 supporting the davits 16.

The block and tackle 17 is secured to each davit 16 at the one end and at the other end to the loop 18 secured to the reinforcing channel 19 in channel form projecting outwardly from each closure at the bottom thereof.

The lugs 20 forming bearings for the pulleys 21 project from the inner wall of the closure near the bottom thereof and the lugs 22 project upwardly from the flooring 10 in the bottom of the buttress recesses and form bearings for the pulleys 23. The lugs 24 project from the channels 19 and the cables 25 are secured to the lugs 24 and ex-

tend around the pulleys 21 and 23 and upwardly through the platforms 12 being there held by the cleats 26 so as to securely fasten the closures 8 to their closed positions.

The blocks and tackles 17 suspended from the davits 16 form the means of opening the closures 8 as they can be readily operated from the platforms 12 which have the guard rails 27 and 28.

In the operation of this invention the wood, if pulp wood happens to be the cargo, is loaded into the hold of the vessel and piled up in irregular fashion as customary and at the end of the journey, the vessel is moored in a convenient place where the closure can be readily raised and the pulp wood dumped through the discharge ports 7 into the surrounding water. In this way, the hold can be cleared in a very short time, simultaneously from both sides, thus saving both time and labor.

It must be understood that without departing from the spirit of the invention various changes may be made from time to time so long as the essential features remain that particularly pertain to the unloading and to the buoyancy respectively.

What we claim is:—

1. A cargo vessel comprising a hull containing a hold and having liftable doors forming the side walls of said hold and supported by intervening buttresses inclosing the lifting tackle and serving as jambs for the doors.

2. A cargo vessel comprising a hull containing a hold having at the sides thereof inwardly projecting buttresses substantially U-shape in horizontal section and open at the outer sides and doors closing the openings between said buttresses and extending over said openings to close in door tackle reaching to the upper deck.

3. A cargo vessel comprising a hull containing a hull having a flooring rising to a longitudinal peak and extending laterally to discharging edges at each side, permanent door jambs rigidly built up on said sloping deck at the edges thereof and forming tackle recesses and doors closing in the sides and the tackle recesses.

4. In a vessel for cargo carrying purposes, a hull having a buoyancy chamber closed in by a longitudinally peaked flooring sloping transversely to discharge ports in successive arrangement along the side walls, inwardly extending buttresses between said ports and extending above said flooring and forming vertical recesses, a platform and longitudinal plating carried by said buttresses, doors hinged to said longitudinal plating and completing the side walls of a cargo hold, davits supported from said longitudinal plating, brackets secured to said doors, loops extending from said doors, blocks and tackles suspended from said davits and engaging said loops, cables secured to said brackets and extending into said vertical recesses around suitable pulleys and upwardly and cleats holding said cables.

Signed at the city of Montreal, in the Province of Quebec, in the Dominion of Canada, this 22nd day of June, 1920.

HAROLD ROBINSON McCLELLAND.
JOHN McLEAN.