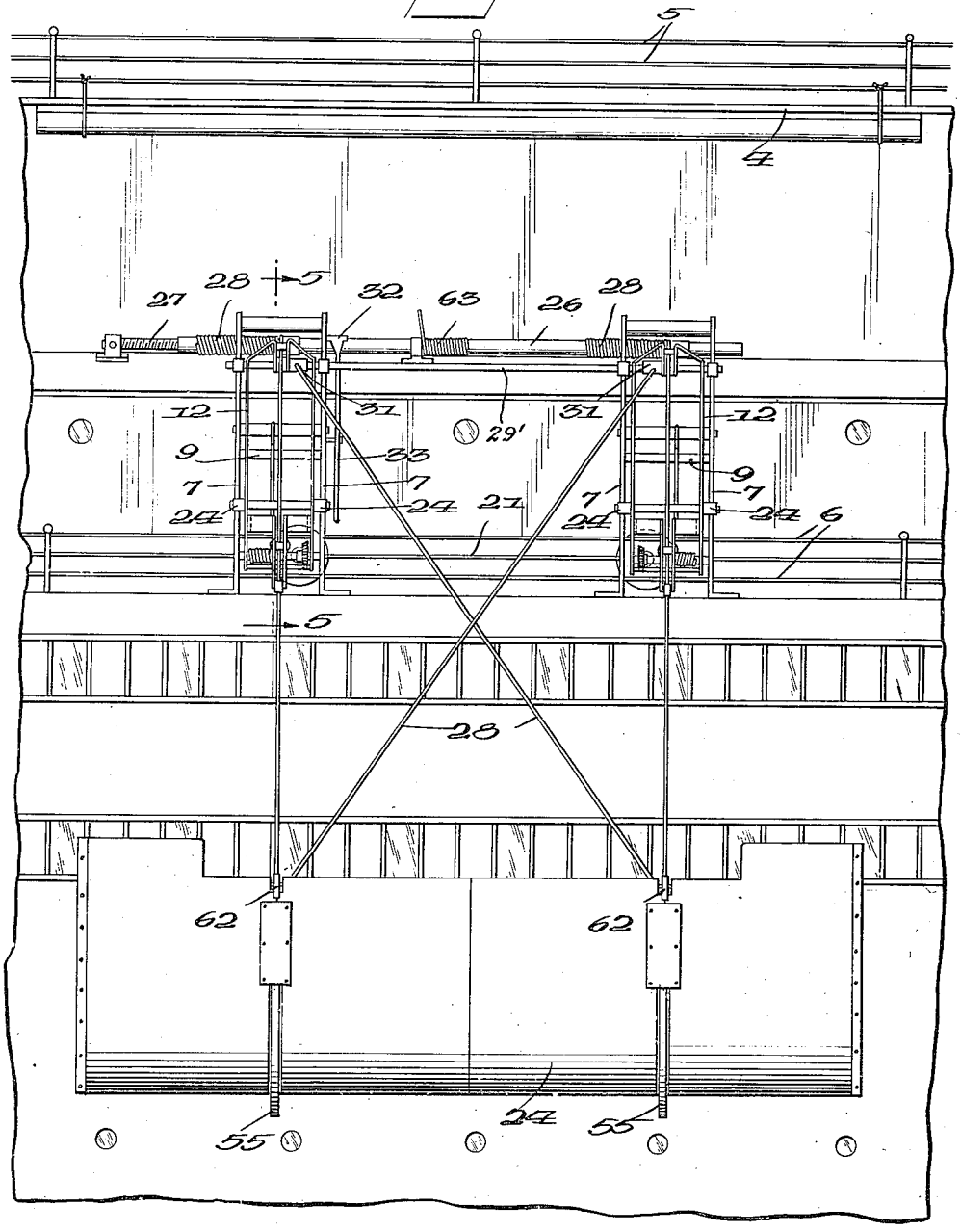
Nov. 4, 1941. J. L. HYLAND 2,261,116

LIFEBOAT LAUNCHING APPARATUS

Original Filed Jan. 5, 1933 4 Sheets-Sheet 1

FIG. 1.



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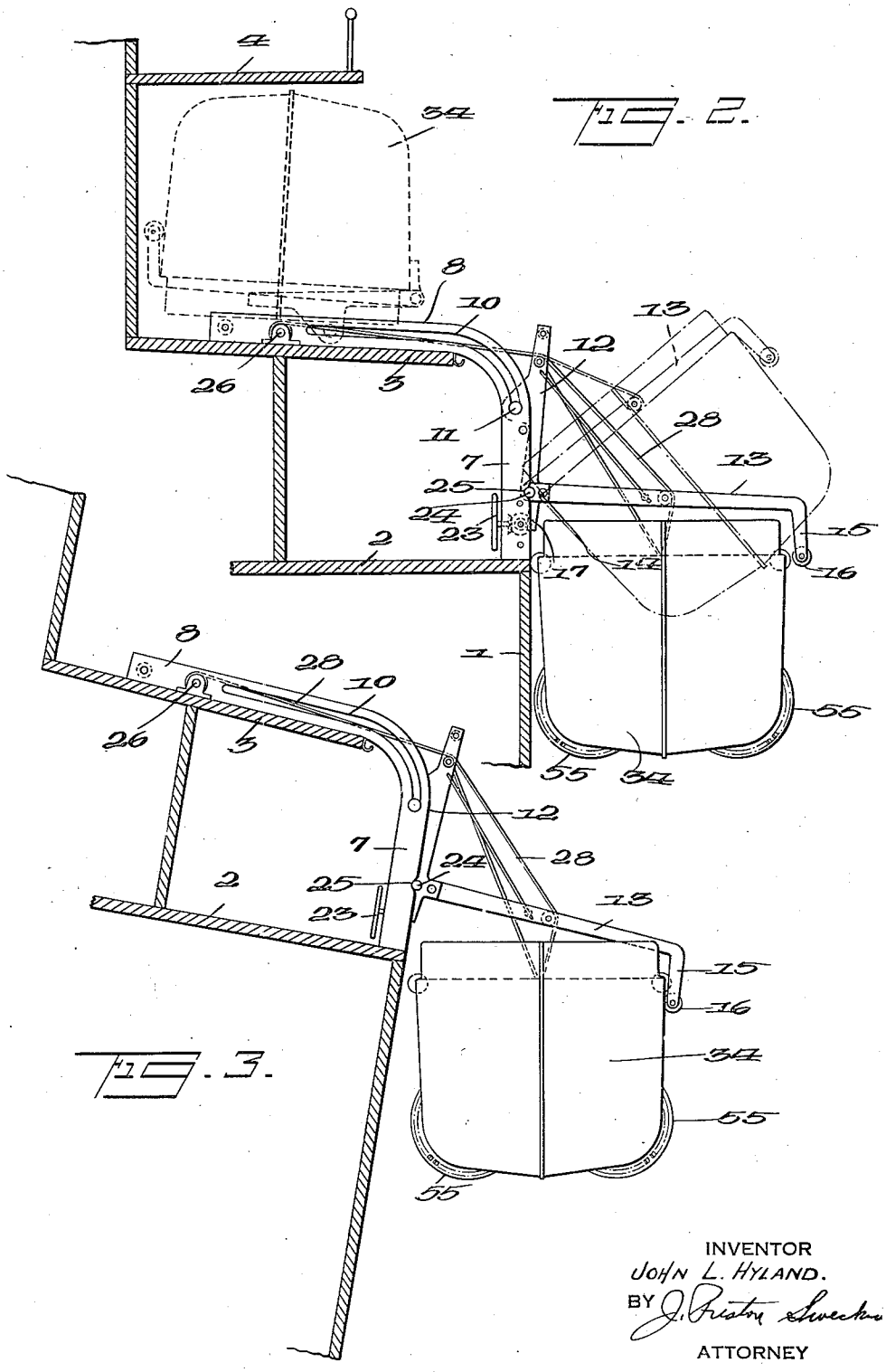


FIG. 2.

FIG. 3.

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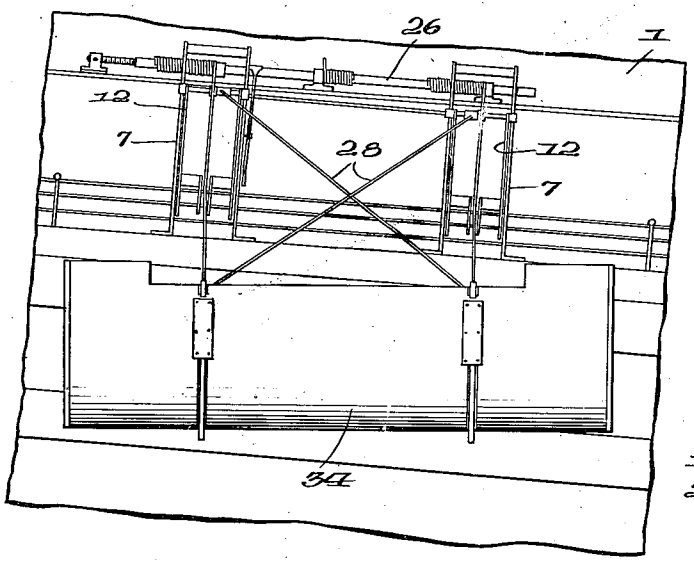


FIG. 4.

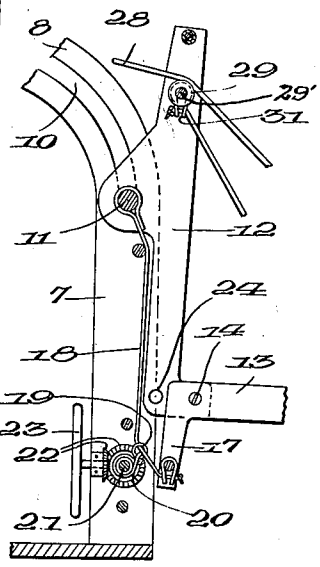
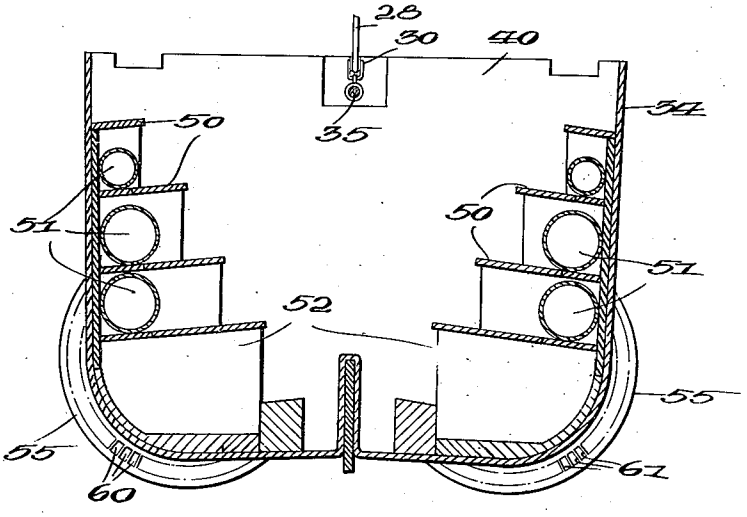


FIG. 5.

FIG. 11.



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LIFEBOAT LAUNCHING APPARATUS

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FIG. 6.

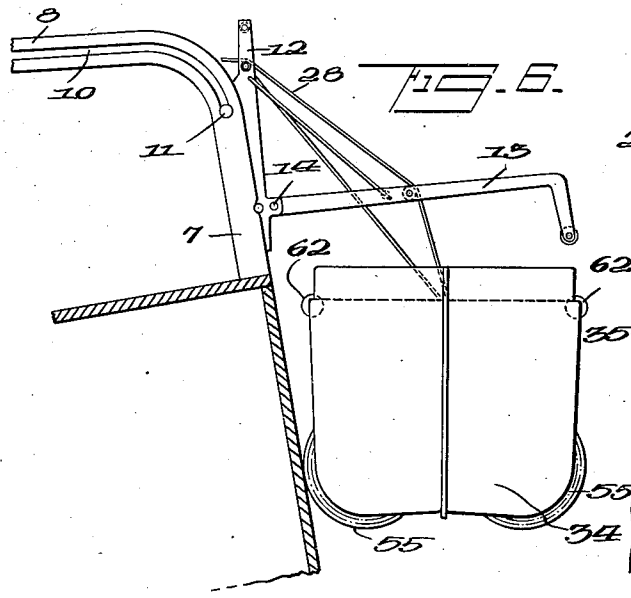


FIG. 8.

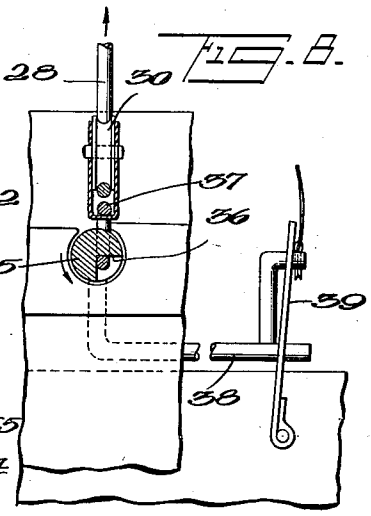


FIG. 7.

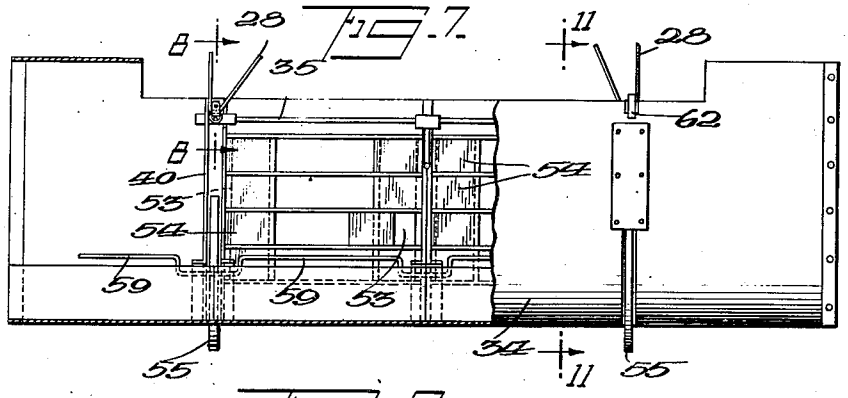


FIG. 9.

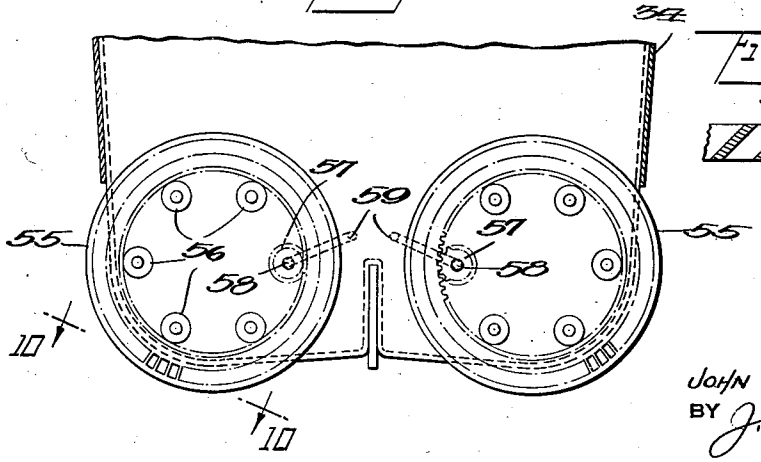
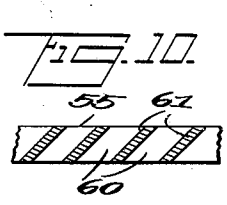


FIG. 10.



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UNITED STATES PATENT OFFICE

2,261,116

LIFEBOAT LAUNCHING APPARATUS

John L. Hyland, New York, N. Y.

Application January 5, 1933, Serial No. 650,317
Renewed October 3, 1939

14 Claims. (Cl. 9—22)

This invention relates to an improvement in life boat launching apparatus of the type wherein the life boat is carried in an inverted position on the deck of the ship in position to be turned over off of the deck for launching.

In my present invention I prefer to carry the life boat above the loading deck and about five feet inward from the side thereof, although the distance may be varied as desired. The life boat is carried in an inverted position on folding davits that operate in frames forming tracks, with nothing holding it except the brake that controls the launching lines. This brake may be operated by a man down below at the rail where the life boat is loaded and where there is provision for pulling the davits and life boat out from the stored positions down over the edge of the deck into position for loading, regardless of how the ship may be listed, or darkness. With this invention the life boat may be moved out from its stored position, lowered to the water and released from either side of any sinking ship in twenty seconds, and always on an even keel, or stern first if desired, regardless of the angle of the ship.

Where ships go down quickly, this means one hundred per cent (100%) life boat protection even from the high side of badly listed ships whereas there is no protection at the present time even though there is plenty of time for launching the life boats. Furthermore, this invention protects the life boat and all launching equipment and stores, by carrying it inboard any distance desired and upside down where everything is always safe and dry. This doubles the useful life of the life boat and equipment as well as reducing the cost of upkeep.

The loaded life boat may be released for lowering to the water by a man on the deck at the brake or a man in the life boat with a line attached to the brake, and always on an even keel regardless of the listing of the ship. At the same time the life boat is held tight to the ship's side especially on the low side of a badly listed ship where it can be quickly and safely loaded to capacity and launched. At the present time it has not been practical to average sixty per cent (60%) capacity. By keeping the life boat close to the ship, the extended arms of the davits are short and never carry more than fifty per cent (50%) of the weight of the loaded life boat with this system regardless of how the ship may be listed. This allows lighter davits and the life boat to be loaded to full capacity under all conditions.

My invention also insures against the breaking of the davits and launching lines as it equalizes the strain on both lines because each line is attached to both davits or their cross arms. This keeps the life boat always on an even keel.

The life boat is constructed with four water-tight sections. It has seats like steps down to the bottom and between and back of the seats in each section there are air-tight chambers to float the life boat. Numerous storage cases for supplies can be opened and packed while the life boat is upside down and berths may be provided in the sides of the life boat.

Between the water-tight cross bulkheads in the life boat there are revolving rims on rollers that may be used to store or carry the life boat or that may be used to keep the life boat clear of the ship's side while being launched, especially on the high side of badly listed ships. These rims may be operated separately or together by passengers in the life boat. They are constructed with propeller vanes to propel the life boat through the water and thereby provide power for the life boat.

In the accompanying drawings:

Fig. 1 is a side elevation of a portion of a ship showing my invention applied thereto;

Fig. 2 is a cross-section therethrough showing the launching apparatus in side elevation and the end of the life boat;

Fig. 3 is a similar view showing the launching of the life boat from the low side of a listed ship;

Fig. 4 is a side elevation of the equipment showing the launching lines holding the life boat level while the ship is pitched forward;

Fig. 5 is a detail sectional view through portions of the davit on line **5—5** of Fig. 1;

Fig. 6 is a view similar to Fig. 3 but showing the launching of the life boat from the high side of a listed ship.

Fig. 7 is a side elevation partly in section of the life boat;

Fig. 8 is a detail sectional view on the line **8—8** of Fig. 7 showing the manner of holding the launching lines;

Fig. 9 is a sectional view of the propelling means as mounted in the lower portions of the life boat;

Fig. 10 is a transverse sectional view therethrough on the line **10—10** of Fig. 9; and

Fig. 11 is a vertical sectional view through the life boat on the line **11—11** of Fig. 7.

The ship is designated generally by the numeral **1** and is provided with decks **2, 3** and **4** near a side thereof, being superimposed in

stepped relation. Guard rails 5 are provided for the deck 4 and guard rails 6 are provided for the deck 2.

Extending upwardly from the outer edge of the deck 2 is a frame 7 which has a horizontal track portion 8 extending along the surface of the deck 3.

I have shown in Fig. 1 double frames 7 for end of the life boat although single frames may be used if desired. The double frames are connected together in pairs and held in proper braced relation by spacers 9.

The tracks 7 have slots 10 extending lengthwise therein through horizontal and vertical portions thereof as shown in Fig. 2 forming tracks for the davits, and the arrangement is such that the horizontal portions of these tracks are slightly inclined toward the inside of the ship at angles of approximately fifteen degrees (15°) in order that the life boat and davits will slide off the deck automatically when released if the ship is upright. Mounted in the slots 10 are guide rolls 11 which carry the davits. Each of the davits comprises an upright arm 12 and a horizontal arm 13 pivoted together as at 14, as shown in Fig. 5, forming a toggle connection therebetween so that the horizontal arm 13 may swing upwardly to nest with the arm 12, as shown in the uppermost dotted position in Fig. 2. The outer end of the arm 13 has a down-turned portion 15 carrying a roller 16 in position to engage a side of the life boat to hold the life boat under the davit and against the side of the ship. The inner end of the arm 13 has a down-turned portion 17, to the lower end of which a cable 18 is attached and extends to the roll 11, as shown in Fig. 5. A ring 19 surrounds the cable 18 and a line 20 is connected with this ring and is wound onto a shaft 21 connected by gearing 22 with a hand wheel 23 by which the shaft 21 may be turned to wind up the line 20.

The arms 12 of the davit carry rolls 24 in position to engage the frames 7 or notches 25 formed therein to limit the downward swinging movement of the davit.

A rotatable shaft 26 is mounted on the deck 3 and extends through the portions 8 of the frames having a screw 27 connected with an end thereof so as to shift the shaft 26 lengthwise as it turns. Wound onto the rotatable shaft 26 are lowering lines 28 which are wound in the same direction on the shaft and extend therefrom over rolls 29 on cross shaft 29' in the upright arms 12 of the davits, thence through a pulley 30 in the life boat, as shown in Fig. 8, and then extend back to a bracket 31 attached to the shaft 29' at the other davit so that the two lines 28 have their end portions crossed, as shown in Figs. 1 and 4, after passing through the pulleys 30. In other words, each line extends over one davit, through the pulley in one end of the life boat and then extends to the other davit. This crossed relation holds the life boat always on even keel regardless of the tilting of the ship, as shown in Fig. 4, by reason of the fact that each line is attached to both davits. The shaft 26 is provided with a brake designated generally by the numeral 32, from which a lever 33 extends into position to be engaged for manipulation of the brake in releasing the life boat, or a line may be attached to this lever so that it may be operated from within the life boat. The shaft 26 and screw 27 and brake 32 may be similar in character to the corresponding parts set forth in my application on Life boat launching apparatus, Serial No. 321,988, filed November 26, 1928, which has matured into Patent No. 1,935,030.

The life boat is designated generally 34 and is provided with a shaft 35 therein having quarter notches 36 cut to receive links 37 attached to the pulleys 30 for releasably connecting the lines 28 with the life boat and supporting the life boat thereby. An arm 38 is connected with the shaft 35 for turning said shaft, and a locking device 39 is adapted to be connected with the arm 38 to hold said arm against turning, these parts being similar in their operation to the corresponding parts in my application on Life boat launching apparatus, Serial No. 522,028, filed March 12, 1931, which has matured into Patent No. 2,045,604.

My life boat is preferably constructed in four sections with water-tight bulkheads 40 and 41 therebetween. Seats 50 are arranged in the life boat, beneath which seats may be disposed air-tight chambers 51 to float the life boat, berth spaces 52 for the accommodation of passengers, storage spaces 53 controlled by sliding doors 54 and other features necessary for the accommodation of passengers and the storage of provisions even when the life boat is in a stored upside down position.

Mounted in the bulkheads 40 are wheels 55 journalled on rollers 56, one of which is shown as a pinion 57 on a shaft 58 and which pinion is geared to the inside of its wheel 55 to rotate said wheel upon turning of the shaft. Each shaft is provided with one or more cranks 59 for turning the same. The shafts 58 are shown as separately operated, but they may be geared together or to a common shaft as may be found desirable. As shown in Figs. 9 and 10, each of the wheels 55 has openings 60 extending therethrough from side to side on an angle to the axis of the wheel shown in Fig. 10 as being approximately forty-five degrees (45°) forming propeller vanes 61 between the openings 60 so that as the wheels 55 are rotated, these vanes 61 propel the life boat through the water.

Small rollers 62 are shown as applied to the sides of the life boat near the upper edge thereof for preventing injury to the life boat.

In operating the equipment, the life boat would normally be lowered from a position shown in full lines in Fig. 2 where it is off of the deck ready to be lowered, although it may be lowered from either of the positions shown in Figs. 3 and 6 if the boat is listed, or from the position shown in Fig. 4 if the boat is tilted. The life boat is lowered merely by releasing pressure on the handle 33 of the brake 32 which allows the weight of the life boat to turn the shaft 26 and lower it, the crossing of the lines 28 as shown in Figs. 1 and 4 keeping the life boat level regardless of the tilting of the ship. The lever 33 may be controlled either by a man on the deck 2 who would operate the hand wheel 23 or from within the life boat by attaching a line to the lever 33. When the life boat reaches the surface of the water it is only necessary to release the arm 38 from its fastening 39 and turn the shaft 35 to thereby release the lines from the life boat.

In storing the life boat, it is pulled up entirely by the lines 28 which first raise it to the full line position in Fig. 2, then as the lines are further drawn in by rotation of the shaft 26 the horizontal arm 13 of the davit swings on its pivot 14 to the intermediate dotted line position in Fig. 2, which movement continues until the arms 12 and 13 are nested, and then the davits move

upward together over the track portion 8 of the frames.

The rolls 11 ride in the slots 10 which movement turns the boat to an upside down position and stores it at any point up to the uppermost dotted line position in Fig. 2 where it is spaced inwardly from the side of the ship and stored between the decks 3 and 4.

To launch the life boat from its stored position, the inclination of the slots 10 will normally be sufficient if the boat 1 is upright, but if it should be listed, as shown in Fig. 6, it is only necessary for an operator to turn the hand wheel 23 to draw in the line 20 which pulls downward on the cable 18 thereby pulling the davits downward through the slot 10 to the position shown in Fig. 6, ready for launching of the life boat.

The shaft 26 may be turned in any desired manner, such, for instance, as set forth in my above-mentioned applications, but I have shown a line 63 wound thereon to extend to a suitable winch or hoisting apparatus which may serve to mechanically turn the shaft.

I claim:

1. In a life boat launching apparatus, the combination of a pair of spaced frames extending upwardly approximately at the edge of the deck of a ship and having portions turned inwardly approximately horizontally, each of said frames having a guiding slot therein with upwardly extending and approximately horizontal communicating portions forming a trackway, the approximately horizontal portion being slightly inclined, a davit having rolls mounted in the slot for upward and inward movement of the davit away from the edge of the deck, said davit having portions connected together for folding action, at least one of said portions being adapted to extend approximately horizontally when the davit is in an outer position, and means for suspending a life boat from the lower side of said horizontal portion.

2. In a life boat launching apparatus, the combination of a pair of spaced frames extending upwardly approximately at the edge of the deck of a ship and having portions turned inwardly approximately horizontally, each of said frames having a guiding slot therein with upwardly extending and approximately horizontal communicating portions forming a trackway, the approximately horizontal portion being slightly inclined, a davit having rolls mounted in the slots for upward and inward movement of the davit away from the edge of the deck, said davit having portions connected together for folding action, at least one of said portions being adapted to extend approximately horizontally when the davit is in an outer position, means for suspending a life boat from the lower side of said horizontal portion, and means for folding the portions of the davit to turn the life boat to an inverted position above the deck of the ship.

3. In lifeboat launching apparatus, a davit comprising a pair of arms having adjacent ends pivotally connected together, said arms being arranged to extend approximately horizontally and vertically respectively when the lifeboat is in upright launching position, a frame, means mounting the upwardly extending arm on the frame for bodily swinging movement from an approximately horizontal position to an approximately vertical position, and means for suspending a lifeboat from the horizontally extending arm.

4. In lifeboat launching apparatus, a davit comprising a pair of arms having adjacent ends pivotally connected together, said arms being arranged to extend approximately horizontally and vertically respectively when the lifeboat is in upright launching position, a frame, means pivoting the upwardly extending arm to the frame for bodily swinging movement of the davit, means for suspending a lifeboat from the horizontally extending arm, and means connected with the upwardly extending arms for limiting the extent of pivotal movement of the davit on its pivotal support.

5. In life boat launching apparatus, a davit having upright and horizontal arms pivotally connected together, means for suspending a life boat from said horizontal arms and for folding the arms together, a support for the davit movable in a path, a flexible link connected between the arms, and means connected with said flexible link for moving the davit to a launching position and separating the arms from folded relation.

6. In life boat launching apparatus, a davit having upright and horizontal arms pivotally connected together, one of said arms having a down-turned portion, said arms being adapted to support a life boat, means for supporting the davit and movable in a path to carry the davit to a position spaced inwardly from the edge of the deck, a guiding shaft connected with said supporting means, a cable extending from the guiding shaft to the downturned portion of the horizontal arm, and means connected with said cable for pulling the davit down to a launching position.

7. In life boat launching apparatus, a davit having an approximately horizontal arm for supporting a life boat therebeneath, said arm having a down-turned outer end portion to extend downwardly along the side of the life boat in supported position, and a roller carried by the lower end portion of said arm.

8. In lifeboat launching apparatus, a davit comprising arms pivotally connected together for folding movement, means for suspending a lifeboat from one of said arms, a flexible link connected with an arm at one end and with the other arm at the other end, and means connected with said flexible link for moving the arms from folded relation to launching position.

9. In lifeboat launching apparatus, a davit comprising arms pivotally connected together for folding movement, a support for the davit mounting the davit for bodily movement, means for suspending a lifeboat from one of said arms, a flexible link having its ends connected respectfully with the arms, and means connected with said flexible link for moving the davit to a launching position and separating the arms from folded relation.

10. In lifeboat launching apparatus, a davit comprising a pair of arms having adjacent portions pivotally connected together, one of said arms being adapted to have a lifeboat suspended therefrom, and means mounting the other arm for normally resting approximately in a horizontal position and holding the first-mentioned arm approximately parallel therewith, said mounting means having a slot therein forming a connection with said arm for bodily movement thereof approximately to a vertical position.

11. In lifeboat launching apparatus, a davit comprising a pair of arms having adjacent portions pivotally connected together, one of said arms being adapted to have a lifeboat suspended therefrom, and means mounting the other arm

for normally resting approximately in a horizontal position and holding the first-mentioned arm approximately parallel therewith, said mounting means having a slot therein forming a connection with said arm for bodily movement thereof approximately to a vertical position and for movement of the first-mentioned arm approximately to a horizontal position in lifeboat suspending position, and means for bracing the second-mentioned arm in said vertical position.

12. In lifeboat launching apparatus, the combination of davits having winding means for separate lines connected together for uniform winding of the lines, and lowering lines, each having one end connected with said winding means and extending therefrom in a single length directly through a lifeboat connection slidably thence directly to a fixed point adjacent the other davit for holding the lifeboat approximately level during tilting of the ship.

13. In lifeboat launching apparatus, the combination of davits having winding means for separate lines connected together for uniform winding of the lines, and lowering lines each having one end connected with said winding means and extending therefrom in a single length directly through a lifeboat connection slidably thence directly to a fixed point adjacent the other davit for holding the lifeboat approximately level during tilting of the ship, said fixed point being located inwardly of the davits in position to draw inwardly on the lifeboat when said lifeboat is in launching position.

14. In lifeboat launching apparatus, the combination with a lifeboat having line guides adjacent opposite ends, of davits, winding means for separate lines connected together for uniform winding of the lines and a lowering line for each davit, each line having one end connected with said winding means and extending therefrom in a single length directly and slidably through the guide at the adjacent end of the lifeboat thence directly to a fixed point adjacent the other davit for holding the lifeboat approximately level during tilting of the ship.

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