Aug. 31, 1937. J. H. McPARTLAND 2,091,327

LIFEBOAT LAUNCHING APPARATUS

Filed April 21, 1936 2 Sheets-Sheet 1

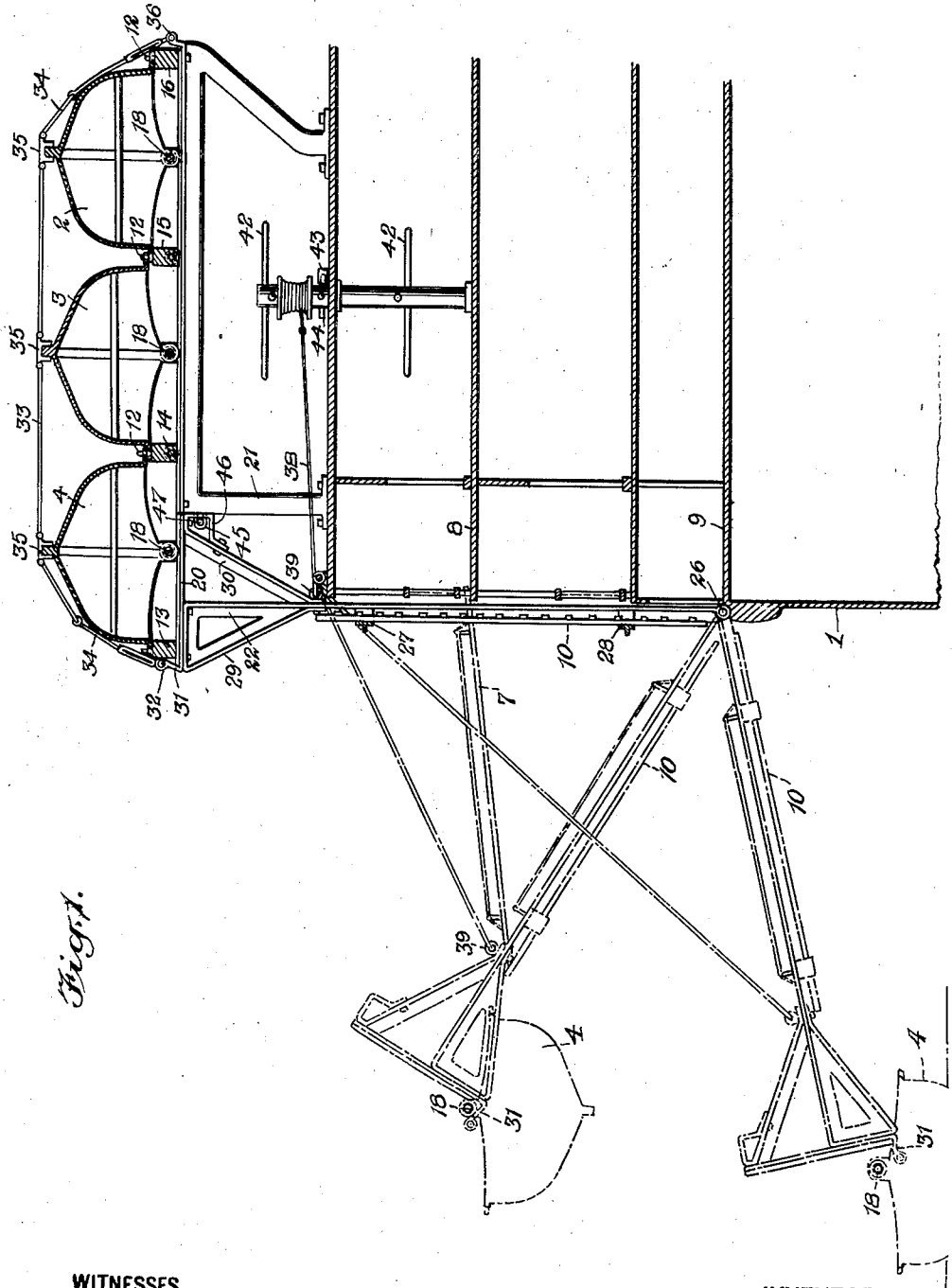


Fig. 1.

WITNESSES

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Fig. 2.

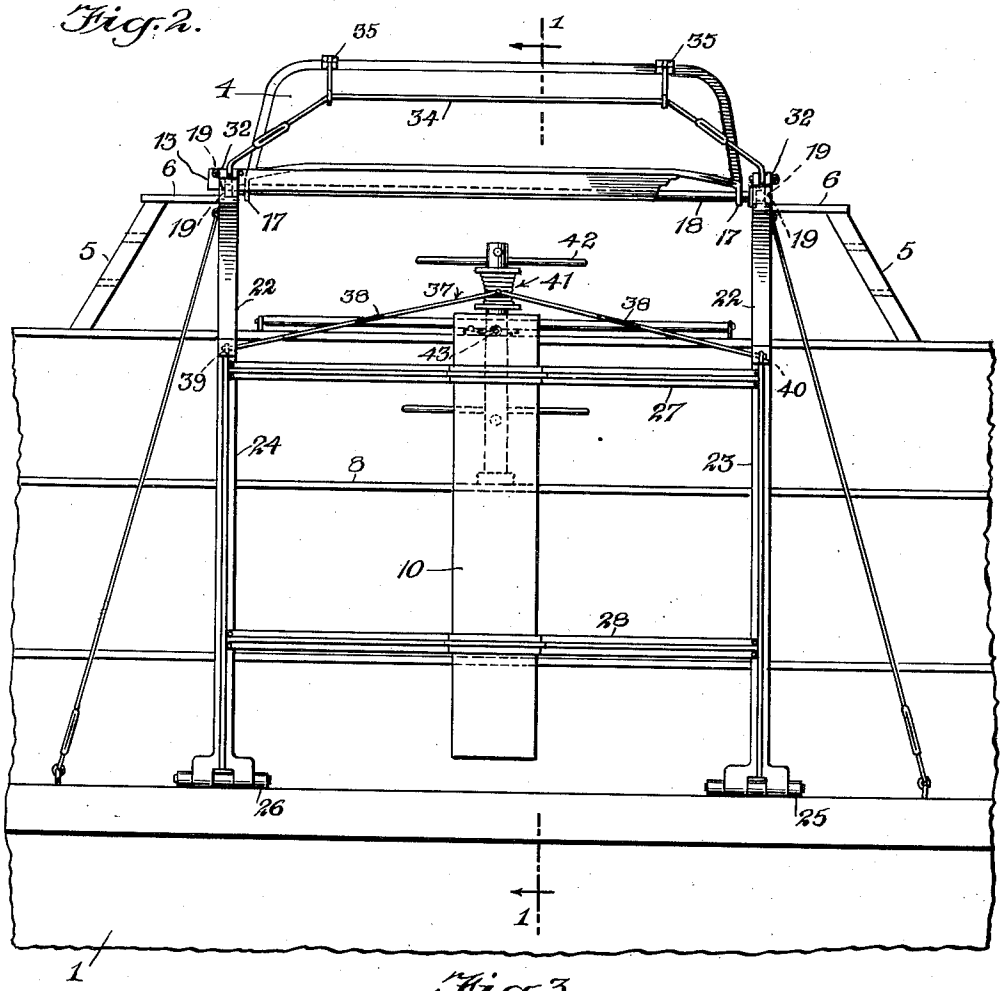
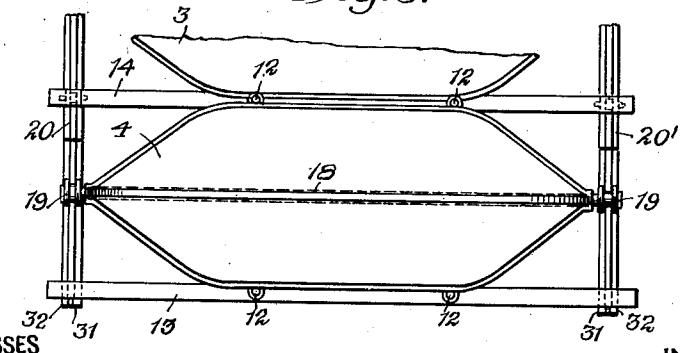


Fig. 3.



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LIFEBOAT LAUNCHING APPARATUS

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4 Claims. (Cl. 9—22)

This invention relates to lifeboat launching apparatus, and particularly to an improved lifeboat launching apparatus for large ships, an object being to provide an improved construction which may be caused to function at a comparatively high rate of speed so that a number of lifeboats may be launched in a minimum of time.

Another object of the invention is to provide a launching apparatus for lifeboats on ships wherein all the lifeboats on the ship may be launched from either side of the ship.

A further object, more specifically, is to provide a launching apparatus for lifeboats wherein the boats are received and then swung outwardly away from the boat before being lowered.

An additional object is to provide a lifeboat launching apparatus which will automatically release the boats as soon as they reach the water but can not be actuated to release the boats at any other point.

In the accompanying drawings:

Fig. 1 is a longitudinal vertical sectional view through Fig. 2 approximately on the line 1—1, a launching crane being shown in two positions in dot and dash lines;

Fig. 2 is a fragmentary side elevation of a portion of a ship with a launching apparatus embodying the invention shown applied thereto;

Fig. 3 is a fragmentary top plan view of one of the lifeboats and part of the launching apparatus shown in Figs. 1 and 2.

Referring to the accompanying drawings by numerals, 1 indicates a large ship, as for instance an ocean going ship. In Fig. 1 only part of one side is shown and only one launching apparatus is disclosed, but it is to be understood that a similar launching apparatus is applied to the opposite side of the ship directly in line with that shown in Fig. 1 so that the various lifeboats 2, 3, and 4 may be launched from either side of the ship according to how the ship may slant at the time the boats are to be launched.

It will be understood that in an emergency where launching of lifeboats is found necessary, quite often the ship will lean to one side or the other and consequently one row of lifeboats becomes useless and the other more or less difficult to launch. In the present invention if the ship should lean to one side, either launching apparatus may be used, preferably on the side of the ship leaning towards the ocean. All of the boats may be launched from that one side or, in other circumstances, the lifeboats may be launched on both sides. The parts are also arranged so that the passengers may move from the top of the top deck upwardly by reason of the ladder or steps 5 to platform 6 and from this platform the passengers may step into the first boat, as for instance boat 4. If for any reason this should not be desirable, a special ladder or steps 7 could be placed as shown in dotted lines in Fig. 1 whereby passengers may move from the floor or deck 8 outwardly into the boat 4. Under other circumstances passengers may be moved from the deck 9 upwardly over the ladder or stairs 10 into the boat 4 or any of the succeeding boats as they are lowered. It will therefore be seen that three places are provided for loading the lifeboat.

The various lifeboats are of any desired or preferred construction, except that they are preferably provided with a flange or gunwale having suitable apertures whereby they may receive the retaining pins 12 on the various bars 13, 14, 15, and 16, as the case may be. Also each lifeboat at each end is provided with an upstanding apertured flange 17 through which a rod 18 extends. Rod 18 as shown in Fig. 2 extends the full length of the boat centrally thereof and beyond the extension 17 so as to receive grooved pulleys 19. These pulleys are adapted to run on the respective rails 20 which are continuations of the respective rails 20' mounted on a suitable frame 21 bolted or otherwise rigidly secured to the ship 1. The frame 21 is sufficiently wide to support the rails 20', which rails are spaced slightly further apart than the length of the boats as shown in Fig. 2.

The rails 20 are rigidly secured to a pair of arms or crane structure 22, which crane structure consists of a pair of upright arms 23 and 24 hinged at 25 and 26, said hinged structure being connected to the side of the ship 1. Suitable braces 27 and 28 connect arms 23 and 24 so as to provide a desired stiffening for the apparatus. At the upper end the arms 23 and 24 are braced by suitable members 29 and 30, which members are also secured to track 20. Track 20 has a bent-up extension at 31 which is turned over so as to form an eye 32. It will be understood that there is an extension 31 and an eye 32 for each of the rails 20 as shown particularly in Figs. 2 and 3.

When the lifeboats are not in use they are arranged in an inverted position as shown in Fig. 1 and held firmly in place against shifting by any suitable means, as for instance by the structure 33 which consists of suitable cables 34 having fittings 35 straddling the keels of the various lifeboats. The ends of the cables 34 are connected as shown in Fig. 1, namely to the eyes 32

and to suitable eyes 36 carried by the frame 21. When it is desired to use one or more of the lifeboats the rigging 33 is removed and the outer edge of boat 4 is raised slightly so that the gunwale 11 thereof will move upwardly and away from the pins 12. Bar 13 is then removed and the boat 4 pushed manually outwardly or to the left as shown in Fig. 1. As soon as the bar 13 has been removed boat 4 will slightly tip so that the left hand gunwale 11 will move upwardly and away from the respective pins 12 carried by bar 14. As soon as boat 4 has moved outwardly a short distance or to a position near the turned-up end 31, it will automatically turn over so that the bottom will be extending downwardly. This is caused by reason of the fact that the boat is pivotally mounted on the rod 18 which is spaced upwardly from the top of the boat a short distance by members 17. As soon as the boat has turned over it is ready to be loaded and passengers may enter the boat from platform 6, if desired, or the boat may be partly loaded as shown in dot and dash lines in Fig. 1.

In order to lower the arms 23 and 24 and the entire lowering crane or apparatus, there is provided a lowering cable 37 which may be an ordinary rope and which is connected to a transverse rope 38 secured to the respective eyes 39 and 40 as shown in Fig. 2. Cable 37 is normally wound around a capstan 41 carried by the ship 1 and operated either by machinery or manually through the various arms 42. A catch 43 coacts with the various pins 44 to lock the capstan against movement when the device is not in use. When it is desired to lower a boat, catch 43 is moved to disengaged position and then the capstan may be readily actuated.

After the boat has been loaded or before the same has been loaded, capstan 41 may be actuated to move the boat half way to the water for loading or may be moved downwardly to the lower dotted position shown in Fig. 1. When moved to the lower dotted position shown in Fig. 1 the turned-up ends 31 are below the rod 18 because the water is supporting the lifeboat which naturally floats away from the apparatus. If desired, the seamen in the boat may push the boat away from the apparatus as soon as it is automatically released by being floated above the turned-up ends or abutments 31.

After the first boat has been launched, as just described, capstan 41 is rotated for swinging the crane upwardly to the position shown in Fig. 1. A second boat, namely boat 3, is then pushed over manually until the rod 18 thereof strikes the abutment 31, whereupon the second boat will automatically invert itself so that the bottom will be hanging downwardly. This boat may be lowered in the same manner as the first boat and then the lowering apparatus returned for a third, fourth or fifth boat. If desired, all of the boats on the ship might be lowered by the same lowering apparatus and on the same side of the ship. The parts are so formed as to present a minimum amount of work on the part of the crew so that, if desired, the boats could be lowered at a comparatively high rate of speed, as for instance three or four minutes apart, although ordinarily it would take longer by reason of the time necessary for the passengers to enter the boats.

It is intended that the frame 21 shall extend any desired distance transversely of the ship 1, and where there is a loading and unloading apparatus on each side the crane 21 and the rails 20' may extend entirely across the ship transversely so that boats at any point from one side of the ship to the other may be forced over to either side of the ship and then launched. In this way, in case one side of the ship becomes injured or so positioned as to make launching difficult, all the lifeboats may be readily and as quickly launched from the opposite side of the boat. In this construction it is desirable that the boats be carried inverted as shown in Fig. 1 so that they will be in proper position to be launched and also so that they may be properly preserved and maintained in order with a minimum amount of work and a minimum amount of paint or other repair.

At the present time the law requires in most instances a certain amount of water and food to be continually stored in each lifeboat. In the present construction the food and water may be readily stored in proper containers in the boat and be protected against rain or other matter. In case of a drill the lifeboats may be launched and later on may be taken up by the crane or launching apparatus and again stored on the support 21.

In order that the cable 8 is not required to hold the crane or lowering frame in a vertical position as shown in Fig. 1, a U-shaped member 45 is secured to the frame 21 in any desired manner and projects through an aperture in the turned-back portion 46 of the brace 30. A pin 47 is adapted to be placed in the U-shaped member or staple 45 and thereby lock the crane to the frame 21. In going through a drill or when lowering the lifeboats permanently, it will be necessary to remove pin 47 and then the crane may be readily swung downwardly and upwardly without interference.

I claim:

1. A lifeboat launching apparatus for ships including a substantially rectangular structure adapted to be placed against the outside of a ship, said structure extending from near the water line of the ship to a point above the top deck, hinged members for hingedly securing the lower end of said structure to said ship, said structure at the upper end being provided with a pair of guideways and a pair of upstanding abutments at one end of the guideways, a lifeboat supporting frame having a pair of guideways arranged in line with the first mentioned guideways, means carried by a plurality of lifeboats resting on said guideways and formed to be guided thereby when said lifeboats are moved outwardly to the upper end of said structure, said means including a bar adapted to move against said abutments when the lifeboats are moved to launching position, and a windlass and cable connected with said structure for raising and lowering the structure as the lifeboats are launched, said rectangular structure functioning to swing said lifeboats downwardly until the lifeboats are supported by the water, said swinging movement continuing until said abutments are lower than the rod carried by the lifeboats whereby the lifeboats are automatically released and may float away.

2. A lifeboat launching apparatus for ships comprising a lifeboat supporting deck track mounted on said ship, means for holding lifeboats in an inverted position on said track, a grooved roller at each end of each of said lifeboats, said rollers being positioned at the longitudinal centers of the respective lifeboats, a launching frame having at its upper end a launching track registering with the deck track

on the ship, said rollers being positioned to rest on said tracks and act to guide said lifeboats while in an inverted position as they are moved along both of said tracks, an upstanding abutment at the outer end of the launching track for preventing the lifeboats from moving off of the launching track until the frame has been swung downwardly sufficiently for the lifeboat carried by the frame to be supported by the water, means for hingedly securing the lower end of said frame to the side of the ship adjacent the water line, and means for raising and lowering said frame.

3. A lifeboat launching apparatus comprising a runway for supporting a plurality of lifeboats, a substantially rectangular frame constituting a crane structure, means at the lower end of said crane structure for hingedly securing the crane structure to the side of a ship, said crane structure at its upper end being formed to present a continuation of said runway, said upper end being formed with a pair of abutments adapted to engage and hold in a given position the lifeboat placed on said upper end, said abutments extending substantially at right angles to said upper end, and a lowering and raising structure connected to said crane for causing said crane to swing under the action of gravity outwardly and downwardly when launching a lifeboat and to swing upwardly and inwardly when moving back to receive a second lifeboat, said downward movement of said crane being adapted to be continued until said abutments are substantially horizontal whereby the lifeboat carried by said crane will automatically slide off of the crane.

4. The combination with a ship having lifeboats, means for launching the lifeboats from the ship comprising a swinging frame hingedly connected to the ship at the lower end and at the upper end formed with means including a pair of tracks and a pair of upstanding abutments, a pair of deck tracks for normally supporting said lifeboats positioned on said ship and extending transversely thereof, said deck tracks and the first mentioned tracks being positioned in alignment when the upper end of said swinging frame is in its highest position, each of said lifeboats being provided with an upstanding ear at each end, a rod extending from one end of the lifeboat to the other and through said ears, a grooved roller mounted on each end of said rod exteriorly of said ears, said grooved rollers normally straddling said deck tracks whereby said lifeboats may be moved along said deck tracks and on to the first mentioned tracks to a position with said rod against said abutments, and means for raising and lowering said swinging frame, said raising and lowering means functioning to swing a lifeboat carried by said frame from the side of the ship and downwardly until the lifeboat is supported by the water, said swinging movement continuing until the abutments are below said rod whereby the lifeboat may float away.

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