C. A. BINKS.

APPARATUS FOR LOWERING AND HOISTING LIFE BOATS.

APPLICATION FILED JAN. 4, 1916.

1,192,158.

Patented July 25, 1916.

2 SHEETS—SHEET 1.

FIG. 1.

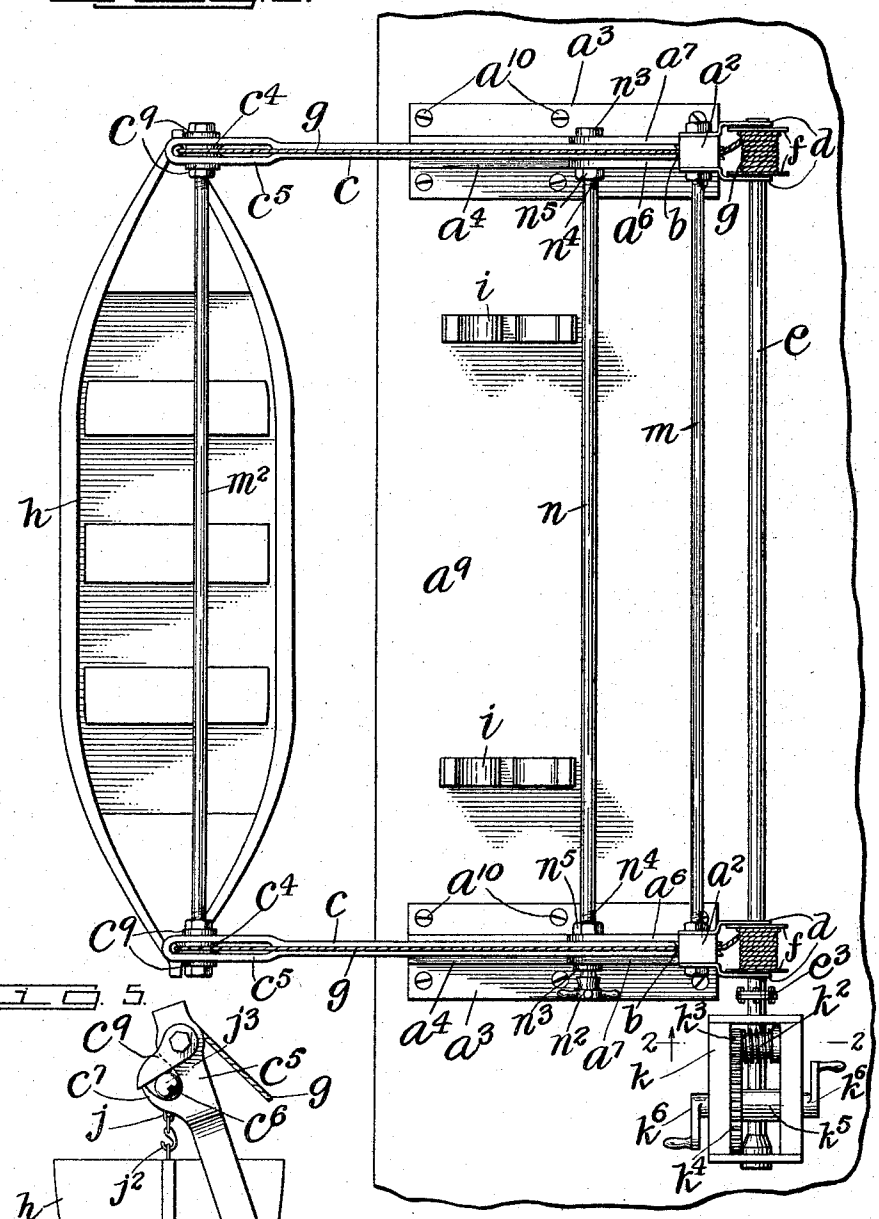


FIG. 5.

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2 SHEETS—SHEET 2.

FIG. 3.

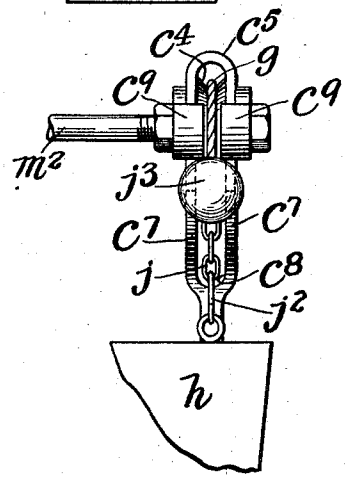


FIG. 2.

FIG. 6.

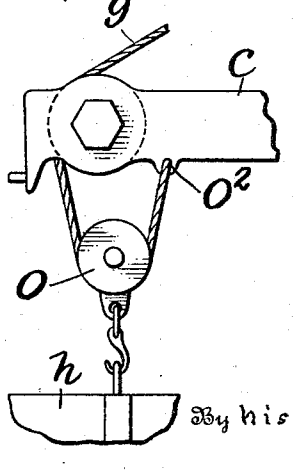
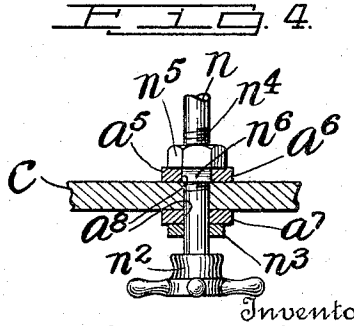


FIG. 4.



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UNITED STATES PATENT OFFICE.

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APPARATUS FOR LOWERING AND HOISTING LIFE-BOATS.

1,192,158. Specification of Letters Patent. Patented July 25, 1916.

Application filed January 4, 1916. Serial No. 70,178.

To all whom it may concern:

Be it known that I, CORNELIUS A. BINKS, a citizen of the United States, and residing at Matawan, in the county of Monmouth and State of New Jersey, have invented certain new and useful Improvements in Apparatus for Lowering and Hoisting Life-Boats, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to apparatus for lowering and hoisting or raising life-boats from the decks of ships, and the object thereof is to provide an improved apparatus of this class which is simple in construction and operation, and which may be used on any kind or class of ships or vessels, and by means of which a life-boat may be easily and safely lowered when desired; and also quickly and easily raised to the deck of a vessel; a further object being to provide an apparatus of the class specified which is operated by a single winch device, which device may be operated by one or two men; a still further object being to provide an apparatus of the class specified which may be safely operated on or from the deck of a ship having a list of from twenty to thirty degrees; and with these and other objects in view the invention consists in an apparatus of the class specified, constructed and operated as hereinafter described and claimed.

The invention described and claimed in U. S. Letters Patent No. 932,101 granted to me August 24, 1909, is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views and in which:—

Figure 1 is a plan view showing my improved apparatus applied to the deck of a ship and showing the davits in a horizontal position and the boat in position to be lowered; Fig. 2 a section on the line 2—2 of Fig. 1 and indicating the davits and boat in a raised position in dotted lines; Fig. 3 a detail view in full lines and looking in the direction of the arrow 3 of Fig. 2; Fig. 4 a partial section on the line 4—4 of Fig. 2; Fig. 5 a view similar to Fig. 1 but showing the position of the davits and the boat when said boat is raised and in a position to be lowered; and, Fig. 6 a view similar to Fig. 5 but showing a modification and also showing the davits in a horizontal position.

In the practice of my invention, I provide two supports a, comprising standards a^2 having outwardly directed horizontal base members a^3 provided, in the construction shown, with central longitudinal webs a^4. The base members a^3 with their central, longitudinal raised webs a^4 are preferably composed of separate parts bolted or secured together in any desired manner, and the standards a^2 and horizontal web members a^4 are connected by arc-shaped braces a^5 composed of inner and outer side members a^6 and a^7, as shown in Figs. 1 and 4, and the arch-shaped braces a^5 are also provided with arc-shaped slots a^8, and all this construction is preferably the same as that shown and described in the patent hereinbefore referred to and, in practice, the supports a are placed in parallel position on the deck a^9 of the vessel and may be secured thereto by screws a^{10} or in any other way.

Mounted in the top of the standards a^2 of the supports a are pulleys b, and pivoted in the bottom of said standards are davits c, the pivotal connections of which are shown at c^2, and mounted in the free ends of the davits c are pulleys c^4. The davits c are provided with slotted heads c^5 in which the pulleys c^4 are mounted, said heads are provided in their inner end portions with recesses c^6 formed partly by downwardly and outwardly curved hook or finger members c^7 between which is a slot c^8, and pivoted to the sides of the heads c^5 between the recesses c^6 and the ends of the heads c^5 of the davits are dogs c^9 which operate in connection with the hook or finger members c^7, and these dogs are preferably mounted on a shaft which connects and braces the free ends of the davits, as hereinafter described.

Secured to the base of the standards a^2 and to the web members a^4 of the base members a^3 of the supports a are bracket plates d which extend backwardly, said plates being arranged in pairs, as clearly shown in Fig. 1, and mounted in said bracket plates which form a support therefor is a horizontal shaft e, and mounted on the shaft e and secured thereto between the separate pairs of bracket plates d are spools f on which are wound the ropes or cables g

which operate the davits c and the boat h in the operation of raising and lowering, or lowering and raising said boat.

Mounted beneath the base members a^3 of the supports a are the usual chairs i which the boat h normally rests on, and the ropes or cables g are passed from the spools f over the pulleys b and through the head c^5 of the davits c and over or around the pulleys c^4, and connected with the ends of the boat h, this connection being, in the preferred form of construction shown in Figs. 1 to 5 inclusive, by means of chains j having hooks j^2 and provided with balls j^3 with which the ropes or cables g are connected.

At one end of the apparatus is a winch device k comprising a suitable frame secured to the deck of a vessel together with operative mechanism mounted therein, and one end of the shaft e projects through the said winch device and is provided with a worm gear e^2, and mounted in the top portion of the winch device transversely of the shaft e is a worm k^2 which operates in connection with the worm gear e^2, and at one end of the worm k^2 is a pinion k^3 which operates with or meshes with a large gear k^4 mounted on a crank shaft k^5 passing transversely through the framework of the winch device and provided at its ends with cranks k^6 which serve as handles for operating the winch device and the shaft e.

In the form of construction shown the end portion of the shaft e which passes through the winch device is formed separately and connected with the main part of said shaft as shown at e^3, this connection being between the winch device and the adjacent bracket plates or supports d, and the object of this construction is to be able to detach the winch device and couple with the shaft e whenever desired, or necessary, and with this form of construction that part of the shaft e which passes through the winch device forms a part of said devices.

The tops of the standards a^2 are connected and braced by a horizontal shaft m which is passed therethrough and the pulleys b are preferably mounted on this shaft, and the free ends of the davits c are connected and braced by a shaft m^2 passed therethrough, and the pulleys c^4 and the dogs c^9 are mounted on this shaft. I also provide means for locking the davits c in their raised position, said means being operable from the end of the apparatus from which the shaft is also operable, and this means consists of a horizontal shaft n mounted parallel with the shaft e, and passing through the arc-shaped slots a^8 in the arc-shaped braces a^5 of the supports a, said shaft being provided at the end thereof adjacent to the winch device with a hand wheel n^2.

The shaft n is provided on the outer sides of the arc-shaped braces a^5 of the supports a with collars n^3 which are rigidly secured thereto and on the inner sides of said braces said shaft is provided with reverse threads n^4 and with nuts n^5 having angular hubs n^6 which fit in the slots a^8 of the inner side members a^6 of the arc-shaped braces a^5, and by means of this construction the shaft n may be turned in one direction so as to lock the davits c in the arc-shaped braces a^5, or in the other direction so as to release said davits and allow them to swing vertically in said braces. It will also be seen that by means of this construction one man may operate the entire apparatus, the davit lock shaft n being operated from the same end of the apparatus from which the winch device is operated, or it will also be understood that one or more men may be employed for operating the winch device, if necessary.

In the normal position of the parts of the apparatus the davits are raised and locked in the arc-shaped braces a^5, and the boat h rests on the chairs i, and when it is desired to raise the boat out of said chairs and lower it over the side of the vessel as indicated in Fig. 2, the winch is operated to raise the boat as indicated in dotted lines in Fig. 2 and as shown in full lines in Fig. 5, after which the shaft n is operated to release the davits.

In the above described operation of raising the boat out of the chairs i and into the position shown in Fig. 5, to be lowered as shown in full lines in Fig. 2, the balls j^3 strike and move upwardly over the bottom surfaces of the hook or finger members c^7 and raise the dogs c^9, and said balls drop into the recesses c^6 in the heads c^5 of the davits, after which the winch may be operated, so as to lower the davits into the position shown in full lines in Fig. 2 and lower the boat into the water, and in this operation the balls j^3 swing out of the recesses c^6 and move the dogs c^9 outwardly. The upward movement of the dogs c^9 is limited by the fact that the transverse dimensions are such that they come in contact with the top portion of the head c^5 of the davits c, and this will prevent the accidental raising of the boat h too high with the parts in the position indicated in Fig. 2, and in the operation of lowering the davits and boat the balls j^3 will leave the recesses c^6 when the davits assume an angle of approximately thirty degrees from a horizontal position.

In the operation of raising the boat from the water, the winch device is operated and the balls j^3 will strike the ends of the davits above or beyond the dogs c^9 after which the davits and the boat will be raised from the horizontal position shown in full lines in Fig. 2 to the position indicated in dotted lines in said figure, in which position the davits are locked by the turning of the shaft n which will operate the nuts n^5 after

which the winch device will be operated to lower the boat h into the chairs i, and in this operation the balls j^3 pass over the dogs c^9, and the object of said dogs is to prevent the balls j^3 from dropping into the recesses c^6 in the operation of lowering said boat into the chairs i, as above described.

It will be observed that the hook members c^7 are arranged in pairs, each davit head in which the pulleys are mounted being provided with a pair consisting of parallel fingers, and the dogs c^9 are also arranged in pairs each davit head being provided with two parallel projecting parts, and the boat suspending cables are free to swing between the separate parts of the hook members c^7 and the separate parts of the dogs c^9 and into and out of the same.

My invention is not limited, as far as the winch mechanism and the davit lock is concerned to the use of the form of davits shown in Figs. 1 to 5 inclusive, nor to the use of the balls j^3 on the ropes or cables g, and instead of this construction I may employ that shown in Fig. 6 in which pulleys o are connected with the ends of the boat and the ropes or cables g are passed through the heads of the davits and around said pulleys and connected with the davits, or the heads thereof at o^2, and this construction may be employed, if desired, in the place of that shown in Figs. 1 to 5 inclusive.

It will also be seen that with my improvement, the boat will be suspended when the davits and coöperating parts are in the position shown in Fig. 5 without any strain on the cables or winch, and the cables between the heads of the davits and the shaft e, or the spools f mounted thereon may be slack; and another advantage resulting from the construction herein shown and described and especially that involved in Figs. 1 to 5 inclusive, is that a boat may be safely lowered from the deck of a vessel when listed or having a list of from twenty to thirty degrees.

Having fully described my invention what I claim as new and desire to secure by Letters Patent, is:—

1. An apparatus of the class described involving two parallel supports provided with standards, davits pivoted at the bottom of said standards, a winch shaft mounted back of said standards and provided at one end of the apparatus with a winch, arc-shaped members composed of parallel side parts and in which said davits are movable, said arc-shaped members being provided with arc-shaped slots, and a davit lock shaft passing through said slots and through said davits, said shaft being adapted to be operated from the end thereof adjacent to said winch and being provided with means whereby the operation thereof will lock said davits in said arc-shaped members or release them according to the direction in which said lock shaft is turned.

2. In an apparatus of the class described, supports adapted to be secured to the deck of a vessel in parallel position, said supports involving vertical standards and arc-shaped braces, said arc-shaped braces being composed of parallel parts between which the davits are movable and being also provided with arc-shaped slots, and a davit lock shaft passed horizontally through said slots and through said davits and provided with means whereby the turning thereof will lock said davits in said arc-shaped braces or release them according to the direction in which said shaft is turned.

3. In an apparatus of the class described, supports adapted to be secured to the deck of a vessel in parallel position, said supports involving vertical standards and arc-shaped braces, said arc-shaped braces being composed of parallel parts between which the davits are movable and being also provided with arc-shaped slots, and a davit lock shaft passed horizontally through said slots and through said davits and provided with means whereby the turning thereof will lock said davits in said arc-shaped braces or release them according to the direction in which said shaft is turned, said apparatus being also provided rearwardly of said supports with a davit operating shaft provided at one end with a winch device through which said shaft passes.

4. In an apparatus of the class described, supports adapted to be secured to the deck of a vessel in parallel position, said supports involving vertical standards and arc-shaped braces, said arc-shaped braces being composed of parallel parts between which the davits are movable and being also provided with arc-shaped slots, and a davit lock shaft passed horizontally through said slots and through said davits and provided with means whereby the turning thereof will lock said davits in said arc-shaped braces or release them according to the direction in which said shaft is turned, said apparatus being also provided rearwardly of said supports with a davit operating shaft provided at one end with a winch device through which said shaft passes that part of said winch shaft which passes through the winch device being formed separately therefrom and detachably connected therewith.

5. An apparatus of the class described involving supports adapted to be secured to the deck of a vessel, davits mounted in said supports, a winch shaft mounted rearwardly of said supports and operated by a winch at one end of the apparatus, and a davit lock shaft operating in connection with said davits and adapted to be operated from the end thereof adjacent to the winch.

6. A life boat lowering and hoisting ap-

paratus, comprising supports adapted to be secured to the deck of a vessel in parallel position and provided with standards, davits mounted in the bottoms of said standards, devices for raising and lowering said davits, and means for locking the davits in said supports and for releasing them to permit of their operation, said devices and means being both operable from the same end of the apparatus.

7. An apparatus of the class described involving supports adapted to be secured to the deck of a vessel in parallel position, davits mounted in said supports, and means for raising and lowering said davits, said davits being also provided at their free ends with slotted heads in which are mounted pulleys, boat supporting cables passing through the slotted heads of the davits and over said pulleys and provided with balls, said davit heads being also provided in front of said pulleys and below the same with parallel projecting hook members and above said hook members with pivoted parallel dog members which are adapted to rest on said hook members and to project beyond the same.

8. An apparatus of the class described involving supports adapted to be secured to the deck of a vessel in parallel positions, davits mounted in said supports, and means for raising and lowering said davits, said davits being also provided at their free ends with slotted heads in which are mounted pulleys and said heads being also provided in front of and below said pulleys with parallel projecting hook members and above said hook members with pivoted parallel dog members which are adapted to rest on said hook members.

In testimony that I claim the foregoing as my invention I have signed my name in presence of the subscribing witnesses this 31st day of December 1915.

CORNELIUS A. BINKS.

Witnesses:
C. MULREANY,
H. E. THOMPSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."