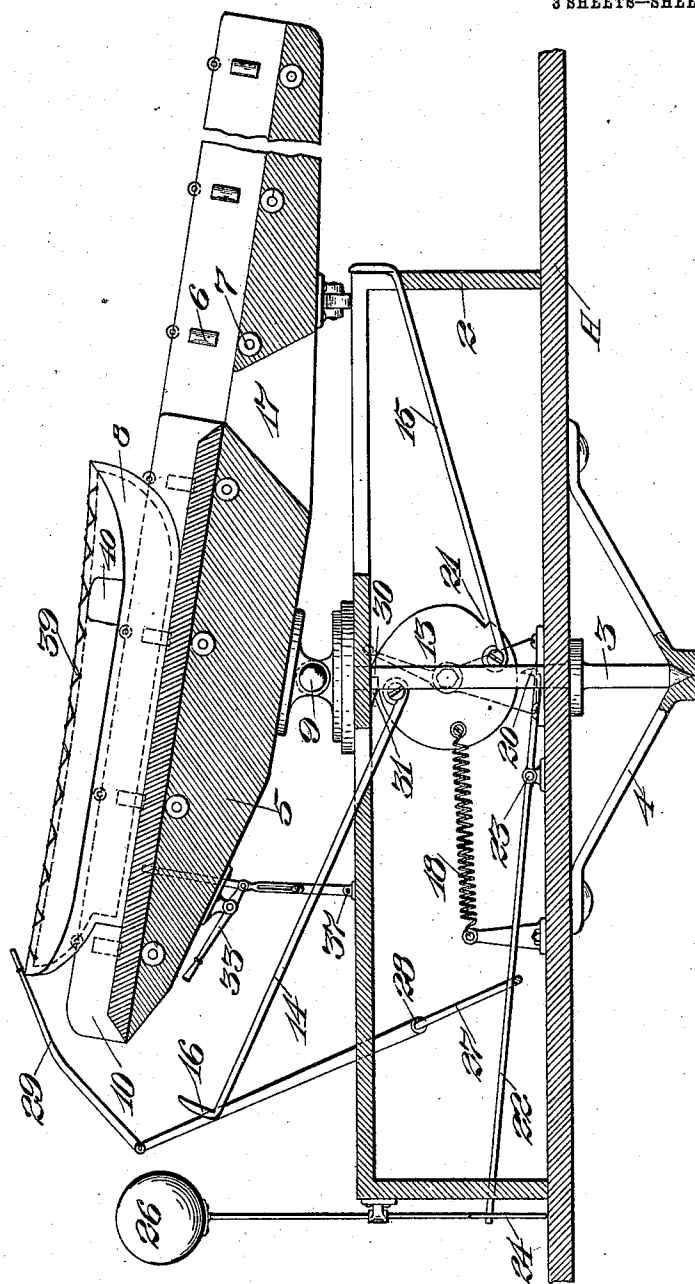


No. 858,853.

PATENTED JULY 2, 1907.

A. T. BROCH.
LAUNCHING APPARATUS.
APPLICATION FILED OCT. 29, 1906.

3 SHEETS—SHEET 2.



WITNESSES:

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J. Eastberg
G. S. S. S. S.

INVENTOR

INVENTOR
Albert J. Brock

BY

Geo. H. Strong

ATTORNEY

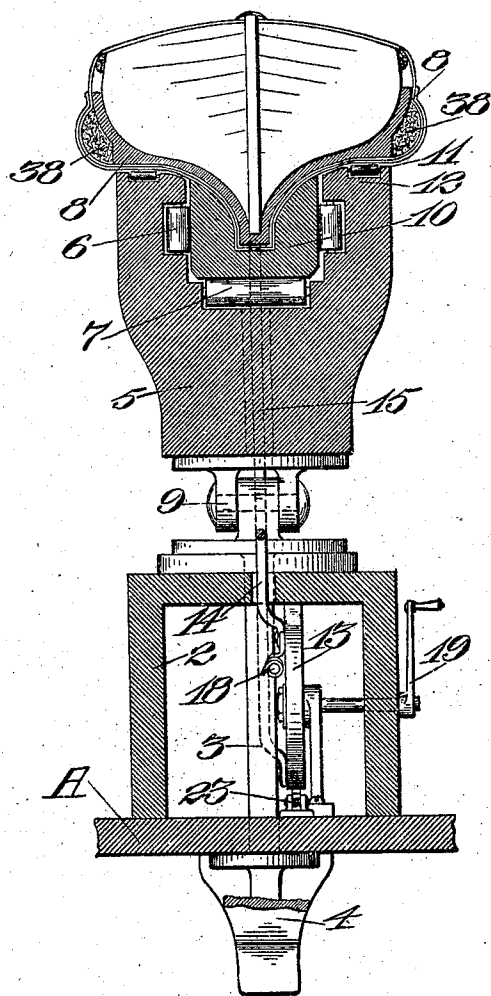
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4 SHEETS—SHEET 3.

Fig. 3.



WITNESSES:

E. H. Hargis
J. H. Hargis

INVENTOR

Albert T. Broch.

BY

Geo. H. Strong.
ATTORNEY

UNITED STATES PATENT OFFICE.

ALBERT THEODOR BROCH, OF SAN FRANCISCO, CALIFORNIA.

LAUNCHING APPARATUS.

No. 858,853.

Specification of Letters Patent.

Patented July 2, 1907.

Application filed October 29, 1906. Serial No. 341,030.

To all whom it may concern:

Be it known that I, ALBERT THEODOR BROCH, a citizen of Norway, residing in the city and county of San Francisco and State of California, have invented new and useful Improvements in Launching Apparatus, of which the following is a specification.

My invention relates to an apparatus for launching life rafts and life boats from the decks of vessels.

Its object is to provide an apparatus by which a raft or a boat loaded with passengers and suitably provisioned, may be safely and quickly launched from a ship in case of shipwreck or other disaster which necessitates an abandonment of the vessel.

It consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a longitudinal section of the apparatus in set position ready for operation. Fig. 2 is a similar view with the apparatus tipped. Fig. 3 is a cross-section on line X—X, Fig. 1.

A represents the deck or frame of a vessel.

2 is a platform or box suitably mounted in the vessel and forming a support for the launching apparatus, and a housing for certain of the parts thereof.

3 is a vertical shaft suitably mounted for rotation and stepped in a bracket 4. The mounting of this shaft is of substantial character, inasmuch as it sustains the entire weight of the launching apparatus and the boat to be launched.

Suitably supported on the shaft 3 so as to be turnable in a vertical plane, is the launching device 5. As here shown, this launching device or cradle 5 is in the form of a substantially built trough with the inside and bottom of the trough provided with the respective vertical and horizontal anti-frictional rollers 6—7 and adapted to form a cradle and support for the launching shell 8, which sheathes and protects the life boat or raft.

It will be manifest that under some circumstances the shell may form the life boat itself, but I prefer to place the life boat in the shell, lace it in securely and then release the life boat from the shell after both have been placed in the water; the construction of the two parts of course being such that there will be no danger of the capsizing of the boat during the operation of launching, or after the launching or freeing the boat from the shell. The cradle 5 would be approximately twice the length of the shell, or where the ship's deck stands high above the water, the cradle may be even longer. The cradle is adapted to hinge on the pivot 9 so as to allow it to assume a suitable incline for launching purposes and allow the shell and life boat to slide gently down into the water.

The shell 8 is of suitable external outline to conform

with the interior of the trough and has a keel beam 10 extending fore and aft of the shell as shown in Fig. 2, and adapted to run in the trough of the cradle 5 in contact with the rollers 6—7. The underside of the body of the shell is made sufficiently flat so as to rest on the horizontal anti-friction rollers 11, which are suitably journaled in the ways 12 formed on the top sides of the cradle.

When the apparatus is in normal inoperative position on shipboard, but in readiness for immediate use, as shown in Fig. 1, the cradle is maintained horizontal with its forward end swung inward so that the cradle lies substantially parallel with the length of the ship; and the cradle with its incumbent shell and life boat are locked in horizontal position by suitable means as here shown.

Inside of the box 2 is a disk 13 to which is pivotally connected two rods 14—15 which extend up through slots in the top of the box and terminate in hooks 16. One of these hooks is adapted to engage over the rear end of the cradle with the top of the keel beam 10 of the shell 8. The hook 16 of the forward rod 15 operates up through a slot 17 in the cradle and is adapted to engage over the top of the front end of the keel beam 10. A spring 18 acts on the disk 13 to tend to rotate it in such a direction as would throw the hooks 16 away from each other and release their grip on the keel beam of the shell. The disk is adapted to be rotated by suitable means as the crank 19 against the tension of spring 18 and allow a dog 20 to engage in a notch 21 in the disk and lock the disk. The rods 14—15 which are pivoted to the disk on opposite sides of the center thereof, may be held up in proper position and the crank 19 turned to rotate the disk and cause the dog 20 to engage the notch 21 to draw the hooks 16 toward each other in such fashion as to grip the ends of the keel beam 10 when the shell is in proper engaging position and absolutely hold the shell against longitudinal movement in the cradle.

With the loaded shell mounted on the cradle in the manner as shown in Fig. 1, so that the greater weight of the shell and its load is disposed back of pivot 9, the cradle is balanced so that it can be turned in any direction either to launch a boat over the stern or athwartship; if the hooks 16 are released from their hold on the keel beam 10 of the shell, the cradle will assume an incline as shown in Fig. 2, unless otherwise held.

A variety of means are provided to release these hooks 16 so that the device can be operated either from the deck of the vessel or by an occupant of the life boat in the shell or by the rising waters in case the vessel should sink without the life boat being launched; in the latter case the shell is simply released from its anchorage in the cradle and floats on the surface.

As shown the dog 21 is a part of the lever 22 which is fulcrumed at 23. This lever extends out through the

rear end of the box 2 and is normally workable in a slot in a rod 24, which is suitably guided at 25 and carries a float ball or buoy 26.

The underside of lever 22 is engaged by a hook on the end of the lever 27 which is fulcrumed at 28. This upper end of the lever 27 extends upward within convenient reach of an occupant of the boat, and if necessary the lever may have a handle 29 by which it can be more easily operated by the person in the boat. By pushing back on the handle 29 or otherwise suitably rocking lever 27, the lever 22 is lifted to disengage the dog 20, whereupon the spring 18 acts to revolve the disk 13 throwing the hooks 16 out of gear and allowing them to drop down out of interference with the cradle and shell, and allow the shell to assume an incline as shown in Fig. 2, unless otherwise hindered by some one or more holding to the rear end of the cradle. The movement of the disk 13 when released may be limited by a projection 30 on the disk engaging a stop 31 on the top of the box.

In order to assist the rods 14-15 in maintaining the cradle normally in horizontal stationary position and relieving the various parts of undue strain, the lever 27 may be in the form of a loop adapted to engage over the top of the rear end of the cradle. When the lever 27 is pushed back it releases its hold of course on top of the cradle.

In addition to the hooks 16 for holding the shell normally against lengthwise movement in the cradle, I employ a latch member as 32, slidable vertically in the cradle and engageable in a hole in the bottom of the keel beam. This latch is pivoted to a short operating lever 33 fulcrumed on the cradle for manual operation. The latch is also pivotally connected with a slotted link 34 which is engaged with a pin 35 on a removable standard 36.

Where the apparatus is set up so as to launch astern, the latch is designed to be automatically retracted by means of the slotted link 34 and pin 35, on the release of the catches 16 and 27 so as to allow the cradle to tilt into the position shown in Fig. 2. The latch is tripped by pulling the member 32 out of its hole which may be done by the link 34 and pin 35, allowing the shell and life boat to glide gently down the ways on the cradle into the water.

Where the device is disposed amidships or at some other location so as to launch its boat athwartship, the standard 36 is detachable from the link by withdrawing its pivot pin 37.

The shell, which by reason its of constituting a casing or inclosure for the boat, forms one of the principal features of the present invention; and it is preferably so constructed, that while it will exclude water from the inclosed boat during the launching operation and for a considerable time thereafter, it is capable of being quickly detached from the boat which it contains after launching in the water. In construction this shell is preferably made with stiffened protective sides, which will prevent the contained boat from being stove in, either by reason of heavy seas sweeping over the vessel before the boat is launched, or by being injured by forcible contact by the vessel immediately after launching.

The protection afforded to the contained boat is further augmented by suitable cushions or buffers 38 provided along the sides of the shell. The outside of the shell is covered with canvas and laced at the ends, and the boat which is contained within the shell may be entirely covered over during the launching operation by a suitable canvas covering laced along its top as shown at 39. After the shell and boat are launched as a unit, the boat may be quickly freed from the shell by loosening or cutting the lacing along the top and ends, allowing the shell to fall away from the boat.

Before this shell and its contained boat are launched, passengers may enter the boat through a flat door 40, which may afterward be laced up to inclose the occupants.

Having thus described my invention, what I claim and desire to secure by Letters Patent, is—

1. In a launching apparatus, the combination of a cradle mounted to swing in a vertical plane, means including retaining members operable in unison from a common center, for maintaining the cradle substantially horizontal and an inclosing sheath or shell for a life boat mounted to slide in said cradle.

2. In a launching apparatus, the combination of a launching cradle mounted for oscillation, means including retaining members engaging said cradle and operable in unison from a common center for holding said cradle in normally horizontal position, a shell having a keel beam supported in said cradle, and means engaging said keel beam to hold the shell against movement in said launching cradle.

3. In launching apparatus, a pivotally mounted cradle provided with a trough, a shell slidable in said trough, and means engaging opposite portions of the cradle and operable from a common center and adapted to hold the cradle horizontal and simultaneously to engage the shell to hold the same in position in the cradle.

4. In launching apparatus, a pivotally mounted cradle provided with a trough, a shell slidable in said trough, means operative to hold the cradle horizontal and simultaneously to engage the shell to hold the same in position in the cradle, said last-named means including a rockable disk, and hook members connected with said disk and engaging the keel beam.

5. In launching apparatus, a pivotally mounted launching cradle, means including oppositely extending hook-members engaging opposite portions of the cradle, for holding said cradle in normal horizontal position, a member slidable in said cradle, latch mechanism engaging said member to hold the latter against movement, and means for automatically releasing said latch on the oscillation of the cradle.

6. In launching apparatus, a pivotally mounted cradle, a rockable disk, hook members connected with said disk and engageable with the cradle to hold the latter horizontal, means engaging said disk to hold said hook members in proper locked position, and means for releasing said disk to disengage said hook-members.

7. In a launching apparatus, the combination of a pivotally mounted launching cradle, a part to be launched slidable in said cradle, said part to be launched having a keel beam, hook-members engageable with said keel beam to hold the latter stationary, a spring actuated rockable disk with which said hook-members are connected, a dog engageable with said disk to hold said hook-members in operative engagement with the keel beam, and means for releasing said dog.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ALBERT THEODOR BROCH.

Witnesses:

S. H. NOURSE,

JESSIE C. BRODIE.