

Jan. 4, 1927.

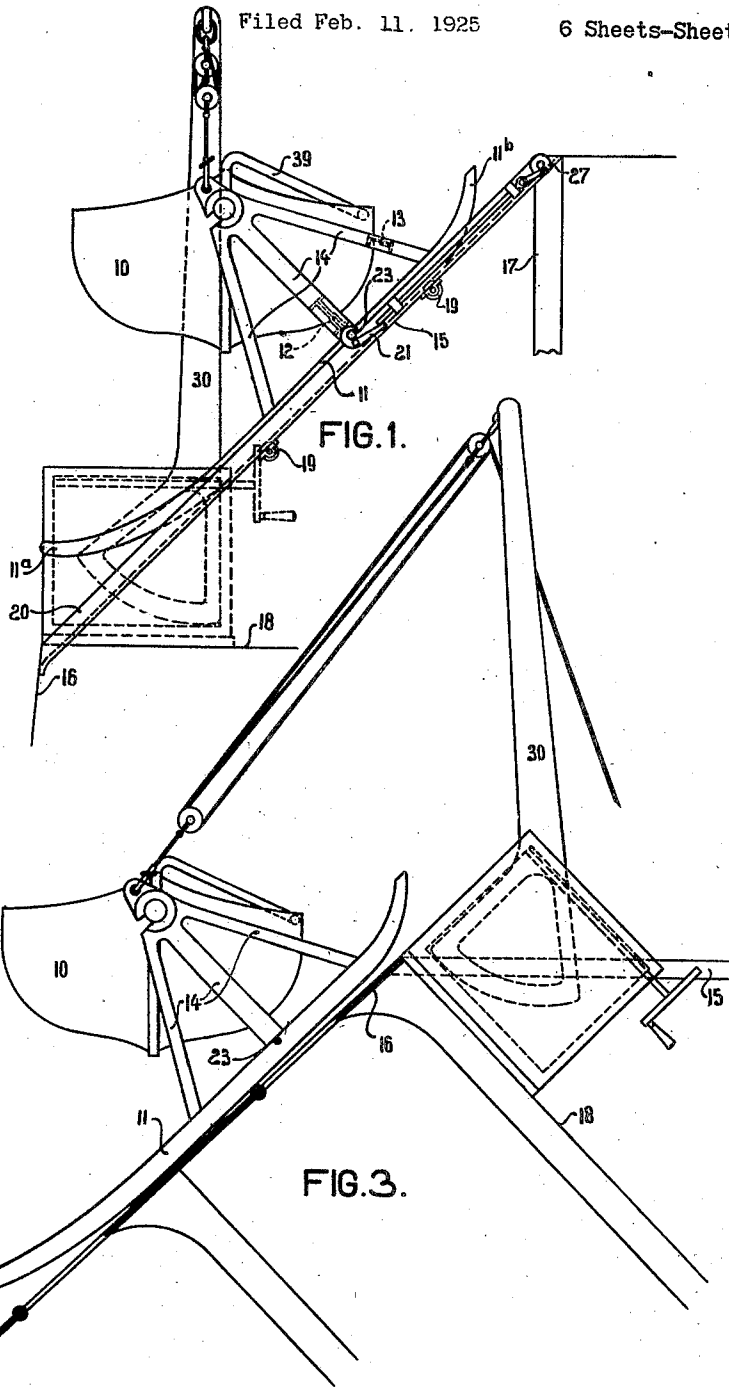
1,613,367

A. VREUGDENHIL

MEANS FOR LAUNCHING SHIPS' BOATS

Filed Feb. 11, 1925

6 Sheets-Sheet 1



Inventor
A. Vreugdenhil
By Marko Clerk
Attys.

Jan. 4, 1927.

1,613,367

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6 Sheets-Sheet 2

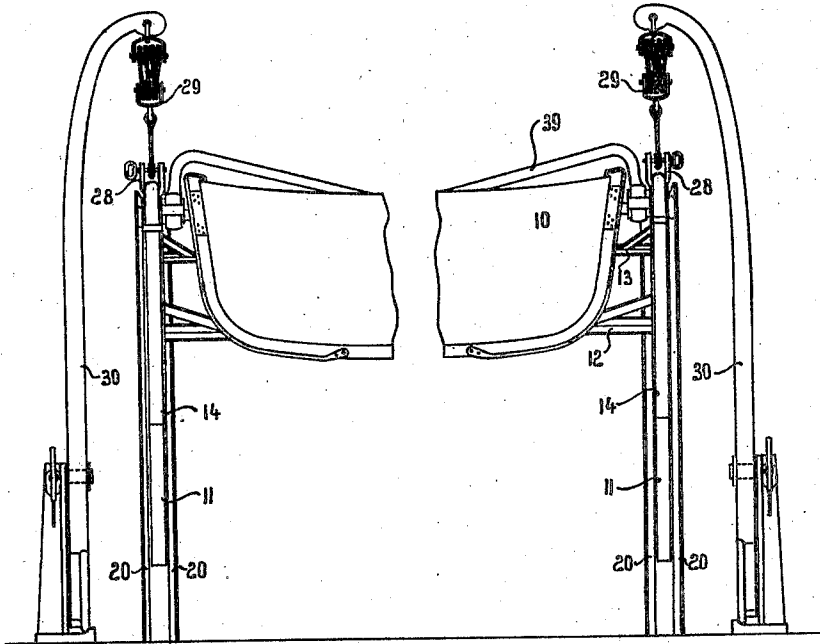


FIG. 2.

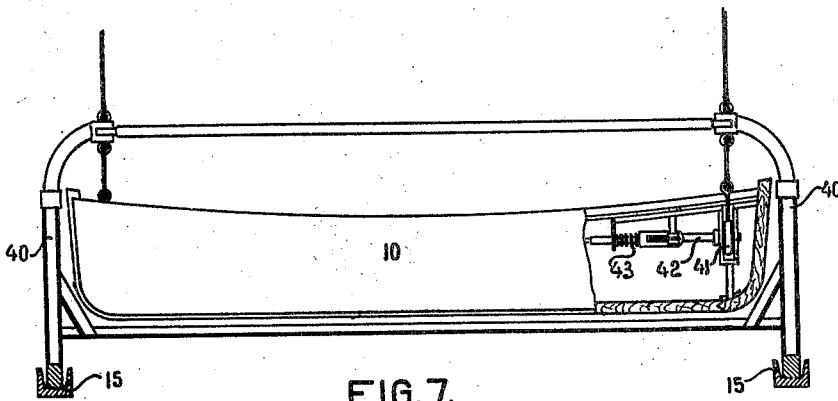


FIG. 7.

Inventor
A. Vreugdenhil
By Markes Clerk
H. B. S.

Jan. 4, 1927.

1,613,367

A. VREUGDENHIL

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6 Sheets-Sheet 4

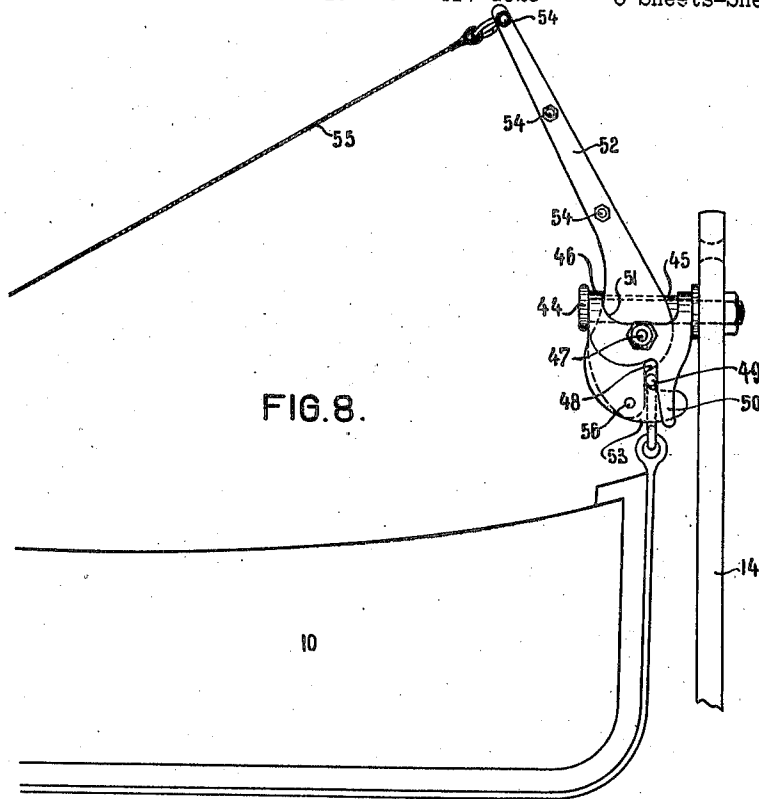


FIG. 8.

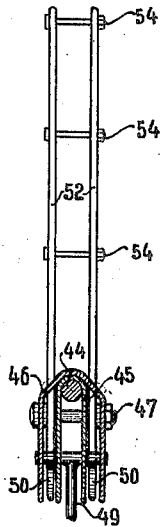


FIG. 9.

Inventor
A. Vreugdenhil
By Mark S. Berk
ATTY.

Jan. 4, 1927.

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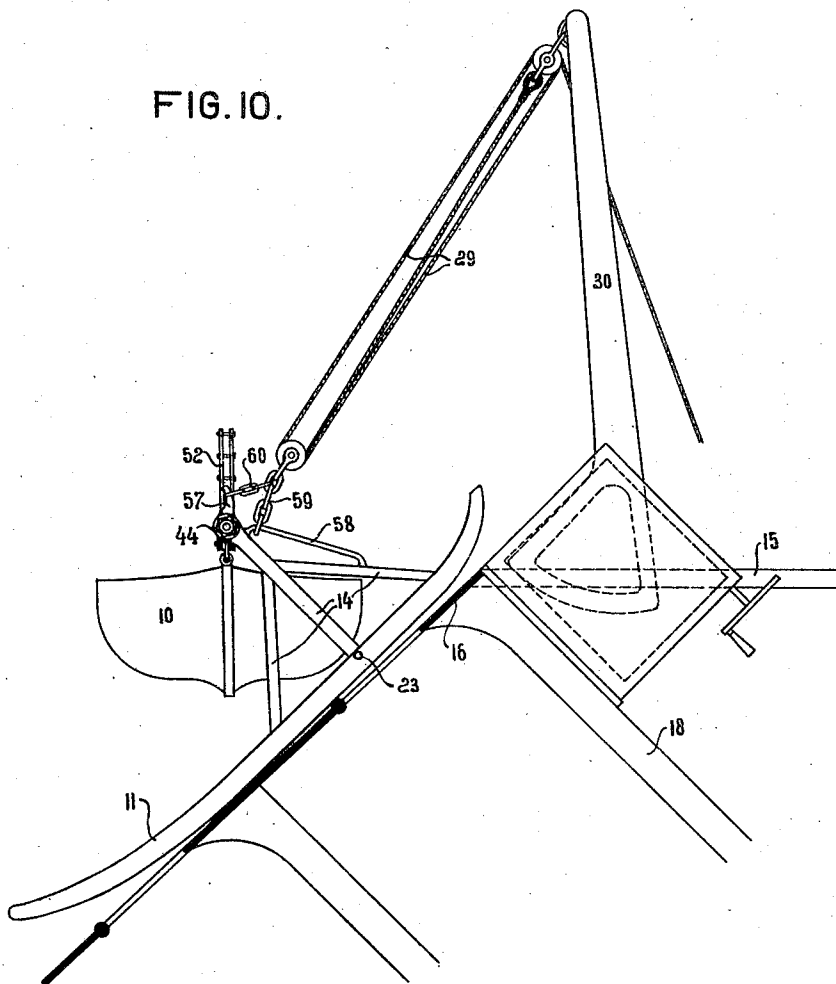
A. VREUGDENHIL

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FIG. 10.



Inventor
A. Vreugdenhil
By Marks & Clerk
ATTORYS.

Jan. 4, 1927.

1,613,367

A. VREUGDENHIL

MEANS FOR LAUNCHING SHIPS' BOATS

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FIG. 11.

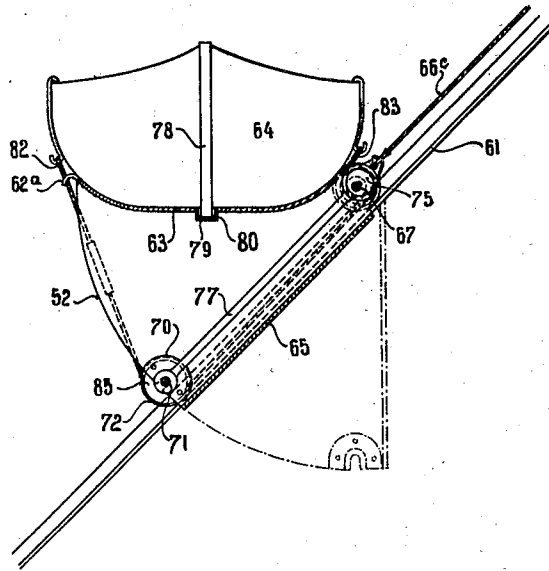
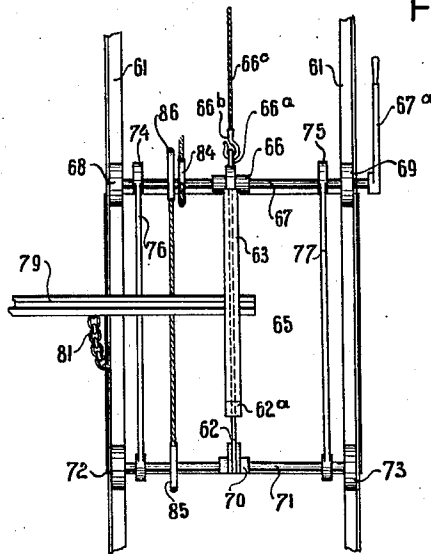


FIG. 12.



Inventor
A. Vreugdenhil
by Markes Clark
ATTORNEY

UNITED STATES PATENT OFFICE.

ADRIANUS VREUGDENHIL, OF AMSTERDAM, NETHERLANDS.

MEANS FOR LAUNCHING SHIPS' BOATS.

Application filed February 11, 1925, Serial No. 8,490, and in Great Britain February 15, 1924.

This invention relates to means for launching ship's boats and its principal object is an improved arrangement whereby the boats can quickly and safely be launched against exceptionally heavy lists. With known arrangements of this kind it is practically impossible to safely lower a boat on the high side of a ship having a list exceeding 10°—15°, especially on board large passenger steamers, because the vertical distance between the boat deck and the water level is generally so considerable that even with very long davits the descent of the boat is fouled and often rendered impossible by the boat falling into the open spaces between shear-plates and promenade-deck rails, by the horizontal joints of the side plating, by side-lights, coal ports, rivet heads, scuppers, fittings for accommodating ladders, etc. which moreover tend to damage the side of the boat. It has heretofore been proposed in means for launching ship's boats to provide a boat-lowering apparatus in which the boat is carried by a protective cradle which is movable in rails or runways on the ship's side, mechanism being provided to maintain the boat horizontal independently of any list the ship may have, such mechanism comprising an arm to support the boat, the said arm being attached to the upper side of the cradle and having a threaded sleeve engaging threaded portions of the arm, the said sleeve being provided with a handle whereby it may be rotated to adjust the length of the arm from the boat so as to maintain the boat in a horizontal position independently of any list the ship may have, a second arm being provided which is unadjustable in length and which is attached to the keel of the cradle and pivotally attached to the fall by which the boat is lowered.

According to the present invention the boat is supported by and between rigidly interconnected skate-like members forming a cradle in such manner that the boat automatically maintains its horizontal position during launching irrespective of any list which the ship may assume. The cradles are so formed as to be adapted, when released, to be lowered by means of known or approved davits and tackle and to slide, with the boat, over the ship's side and over any obstacles or impediments and holes which, otherwise, would be likely to impair the lowering of the boat. Preferably the said sliding cradle is composed of two comparatively

long skate-like members rigidly tied together and spaced apart a distance which slightly exceeds the length of the boat to be handled, the said skates having a length approximately equal to or slightly exceeding twice the vertical distance between two promenade-decks and being supported on outwardly inclined ways placed athwart-ships on the boat deck. Each skate-like member of the cradle is provided with a standard for supporting one end of a boat in such a manner that the boat can be readily released from its cradle as soon as it is water-borne, or earlier if desired. In some instances said standards may be in the form of small davits, from which the boat is suspended through suitable releasing gear of any known or approved type.

In order that my invention may be clearly understood by those skilled in the art I shall now proceed to describe the same with reference to the annexed drawing, on which:

Fig. 1 is an elevational end view of a boat supported by a cradle resting on its ways and suspended from the tackles of some known type of quadrant-davits, although any other suitable type of davits may be used;

Fig. 2 is a side elevational view of the arrangement illustrated in Fig. 1;

Fig. 3 is a diagrammatic end view of a cradle with its boat when being lowered over the high side of a passenger steamer having a list of about 45°;

Fig. 4 shows means for locking the cradle on its ways;

Fig. 5 is a longitudinal vertical section through the end portion of a boat and along the line V—V in Fig. 6;

Fig. 6 is part of a diagrammatic end view of the standard shown in Fig. 5, looking from the left;

Fig. 7 is a diagrammatic side view of a cradle with standards of the ordinary davit-type with a boat suspended therefrom;

Fig. 8 is a side elevational view of special releasing gear by which the boat may be suspended from the cradle standards, and

Fig. 9 is a front view of said gear;

Fig. 10 shows means for automatically shifting the point of application between the cradle and the tackle after the boat has been launched.

Figs. 11 and 12 illustrate two views of a collapsible chock for an inboard boat.

As shown in Figs. 1 and 2, a life-boat 10 is supported by a sliding cradle composed

of two parallel skate-like members 11 having upwardly curved end portions 11^a, 11^b and rigidly tied together by ties 12, 13. Each skate 11 carries a standard 14, the head portion of which is arranged to support one end of boat 10. If desired, each standard can be provided with a spring device for damping shocks. The cradle has its skates 11 spaced apart a distance which slightly exceeds the length of the boat which it should accommodate. Normally the skates 11 rest upon outwardly inclined ways 15 having their lower ends flush with the ship's side 16 and their upper ends supported by stays 17 resting on the boat deck 18, or by some deckhousing. The ways 15 are disposed athwart-ships and have the form of channels the bottom of which is fitted with anti-friction rollers 19 for reducing the frictional resistance when the cradle slides over its way, the upstanding flanges 20 of the channels serving to prevent the skates 11 from lateral displacement.

Normally the cradle is prevented from gliding off its ways by slip-hooks 21 (see Fig. 4) pivoted as at 22 to the outer flanges 20 of the ways and adapted to engage laterally extending studs 23 on the skates. The slip hooks cooperate with latches 24 lengthwise slidably secured to the flanges 20 and flexibly coupled through rods 25 with eccentrics 26 mounted on a common shaft 27 in such a manner that when the shaft 27 is turned by means of a suitable handle (not shown) the slip-hooks 21 of both skates are simultaneously released and the cradle is free to slide down-hill.

The heads of the cradle standards 14 are each provided with a buckle 28 adapted to be engaged by the tackles 29 of ordinary davits 30 of the quadrant type.

One manner in which the boat 10 may be releasably supported by its cradle is shown in Figs. 5 and 6, in which 31 is the stem of the boat and 32 is a heavy stud-bolt slidably passed through a hole near the upper end of the stem which is suitably reinforced by means of a metal strip 33 and by side plates (not shown). Secured to the head 34 of the standard 14 is a horizontal cylindrical bearing block 35 having an open horizontal recess 36 the width of which corresponds with the diameter of bolt 32. Loosely mounted on the bearing block 35 is a lock-ring 37 having a cut-away portion 38 and secured to a lever arm 39 by means of which it may be manually turned so as to bring the passage 38 into register with the recess 36, whereby the bolt 32 may slip out of the head 34.

It should be understood that the lever 39 near the stem is coupled with the corresponding lever near the stern-post of the boat and adapted to be locked by means of suitable latches or the like in the boat in

such a manner that, when the said levers are locked, the recess 38 is out of register with recess 36.

When the boat on the high side of a vessel having a heavy list is to be lowered, all that is required is turning shaft 27 after the boat chocks (not shown) have been collapsed and the gripes (not shown) have been released. Rotation of shaft 27 results in retraction of the latches 24 and, consequently, in unlocking of the slip-hooks 21 so that the cradle with the boat supported thereby is free to slide down-hill on its way 15. The descent of the cradle is controlled by means of the tackles 29 and the davits 30. When the skates 11 project a certain distance from the ship's side 16, the cradle will cant so as to continue its downward motion over the said side (see Fig. 3), and it will be readily seen that owing to the length and to the upwardly curved front portion of the skates the cradle smoothly moves over any obstacles and impediments which otherwise would impair the lowering of the boat. When the boat is water-borne, the lock-rings 37 of both cradle standards are simultaneously turned by means of the interconnected levers 39 so as to bring the passages 38 into register with the recesses 36 and allow the bolts 32 to slip out of their bearings, thereby releasing the boat. It should be added that there are no ties between the skates at the outer side of the standards 14, so that there is nothing that can interfere with the proper launching.

If necessary, the cradle may then again be hoisted and locked on its inclined trackways 15, after which a second boat may be hung from it by means of the davits and their tackles.

Fig. 7 diagrammatically illustrates alternative means for suspending the boat from its cradle. According to this figure, the standards are in the form of small davits 40 mounted on the skates. Suspended from each of said davits is an elongated link 41 adapted to receive a longitudinally slidable bolt 42 loaded by a spring 43, which tends to force it into engagement with said link. The bolts 42 at either end of the boat are coupled by a suitable lever system in such a manner that by the operation of a handle in the boat both bolts 42 are simultaneously retracted so as to release the links 41.

It will be understood, however, that in connection with davits 40 any other type of automatic releasing gear may be employed and that the said davits may be slueing davits, if so desired.

In Figs. 8 and 9, the standard 14 is provided with a heavy, laterally extending stud 44 loosely suspended from which are two straps, viz, an inner strap 45 and an outer strap 46 secured together by a bolt 47. The cheeks of the inner strap are each provided

with a deep, substantially vertical slot 48 for receiving the horizontal branch of a heavy T 49 from which the boat 10 is suspended. The cheeks of the outer strap 46 have downwardly projecting extensions 50 which, as well as the walls of the slots 48, serve to guide the horizontal branch of the T.

Strap 46 has a recess 51 in its curved portion and passed through this recess at either side of stud 44 are two levers 52 rotatably mounted on the bolt 47 as a pivot. The lower end of each lever is provided with a hook 53 adapted, when the lever assumes its extreme inner position (as shown in Fig. 8), to support the horizontal branch of the T in the slots 48. Both levers 52 are rigidly interconnected by bolts 54 and the unit thus formed is connected through a rope 55 with the corresponding levers pivoted to the stud of the other cradle standard, it being understood that said rope may be fastened to a cleat of the boat. When this rope is released, the levers 52 of either cradle standard simultaneously swing out under the action of the gravity pull of the T's 49 on the slightly inclined bearing faces of hooks 53 whereby the boat is instantaneously released from its cradle.

If desired, a locking pin 56 may be passed through holes in the cheeks of the inner strap 45, said holes registering with holes in the levers 52 in their inward positions. Said locking pin must be retracted before the rope 55 is released from its cleat and should be reinserted before the boat is again hoisted.

If the ship has no appreciable list, the boat may be launched without the assistance of the cradle which then simply remains in its locked position on its ways, and the davit tackles should then directly engage the boat in the usual manner.

The arrangement shown in Fig. 3 of the drawing is quite suitable for lowering a boat, but when, after launching the boat, the empty cradle is again to be hoisted, the inconvenience is experienced that the cradle has a tendency to cant owing to the fact that it is engaged by the tackle in a point above its centre of gravity. Fig. 10 shows a simple arrangement whereby this inconvenience is met. The cradle here is fitted with suspension and releasing gear as described with reference to Figs. 8 and 9, but the straps pivotally mounted on stud 44 are besides provided with a finger 57 diametrically opposed to the hook 53. Furthermore, the standard 14 mounted on the skate-like member 11 is on its inboard side provided with a rod 58, which extends from a point near the stud 44 to a point some distance above the said member 11. The running block of the tackle 29 carries a short length of chain 59, the extreme link of which loosely fits around rod 58, and another short

length of chain 60, the extreme link of which is adapted to engage the finger 57.

When lowering a cradle with a boat suspended thereby, the extreme link of chain 60 is passed around finger 57 as shown in Fig. 10, whereby the tackle 29 engages the cradle substantially as shown in Fig. 3. As soon as the boat is launched, however, the suspension device pivotally mounted on stud 44 will turn through 180°, because the weight of the boat then no longer holds the center of gravity of said device above its pivot, whereby the extreme link of chain 60 slips off the finger 57 and the chain 59 is free to move to the lower or inward end of rod 58.

Should one set of davits have to handle two boats, viz, an outboard and an inboard boat, I can employ the device described so far without any modification and provide for special collapsible chocks for the inboard boat as shown, by way of example, in Figs. 11 and 12. Intermediate between the ways 15 for the skates 11 and in parallel relation therewith are arranged two pairs of rails 61, it being understood that Fig. 12 shows only one pair of these rails. Each pair of rails serves to support a boat chock, which comprises a substantially triangular, vertically disposed plate 62 centrally between the rails and supporting a wooden bearing 63 for the inboard boat 64. Secured along the lower edge of plate 62 is a bottom plate 65 which, when the chock is in its elevated position as shown in full lines in Fig. 11, engages the bottom sides of rails 61. At its rear or inboard end plate 62 has secured thereto a bearing 66 for a shaft 67, loosely mounted on which are two wheels 68, 69 adapted to travel over the rails 61. At its outboard or front side, the plate 62 is further provided a small distance above the bottom plate 65 with an open bearing 70 for a second shaft 71 with wheels 72 and 73 running on the rails 61.

Keyed to shaft 67 are two eccentrics 74, 75, whose straps are secured to rods 76, 77, the ends of which are provided with eye bearings engaging shaft 71. Secured to shaft 67 is a hand lever 67^a adapted to be locked against involuntary movement.

Bearing 66 is provided with an eye 66^a for engagement by the hook 66^b of a rope 66^c secured to the drum of a winch (not shown).

It will be understood that by means of the said winch the chock and the boat supported thereby can be caused to move along the rails 61 into position to be engaged by the tackle of the davits, or by the cradle, as the case may be. If now lever 67^a is turned through the required distance, the eccentrics 74, 75 will push shaft 71 in the outboard direction until said shaft leaves the open bearing 70 and the chock swings down about shaft 67 into the position shown in dash and

dot lines in Fig. 11. A hook 62^a secured to the plate 62 then engages shaft 71 in its extreme position.

The keel 78 of the boat 64 rests upon a length of channel iron 79 extending between both boat chocks and loosely lying in suitable recesses 80 in the bearings 63. When the chock collapses, said channel iron 79 engages with the rods 76, 77, so that it is forced out of the said recesses 80 whereas the chock itself continues its falling movement. A length of chain 81 secured at one end to the channel 79 and at its other end to a rail 61 prevents the channel from gliding too far down-hill.

In the arrangement shown in Figs. 11 and 12, the shaft 67 also serves to operate the usual gripe gear. As shown, the gripe 83 is provided at its free end with an eye engaging a finger on a disc 84 keyed to shaft 67, whereas gripe 82, which is passed over a guide roller 85 on shaft 71, has an eye which engages a finger 86 secured to shaft 67, the arrangement being so, that when shaft 67 is turned in a direction to force shaft 71 out of its bearing 70, the gripes are released and their said eyes slip off their fingers, whereas rotation of shaft 67 in the opposite direction causes the gripes to be tightened, provided their eyes have been passed around their fingers.

As long as the boat rests on its chocks and the gripes are tightened, the bottom plate prevents undue vertical motion of the boat. However, as there must be some clearance between said bottom plate and the under sides of the rails 61, loose wedges may be interposed to take up this clearance, or the rails 61 may be provided with fixed wedge pieces for receiving the wheels of the chock in its utmost inboard position and clamping the bottom plate against the rails.

The present invention is distinguished from previously-proposed apparatus of the kind in which the ships' boat to be launched is mounted in a sliding or travelling cradle, by reason of the fact that according to the present invention the cradle is not provided with wheels and no rails are provided on the side of the ship, the cradle when released sliding freely down over the side of the ship. To this end the cradle is provided with "skate-like" members arranged at right angles to the axis of the boat, which are sufficiently long to prevent the boat fouling the decks or other impediments whilst being lowered.

What I claim is:—

1. Means for launching a boat from a ship,

including outwardly inclined ways forming a part of the structure of the ship and disposed athwart-ships on deck, a cradle composed of comparatively long skate-like members rigidly tied together, standards rigidly secured to the skate-like members, means for pendulously suspending the boat from and between said standards out of contact with the ship so that the boat maintains its substantially horizontal position during launching irrespective of any list of the ship, and means to release the boat from the cradle.

2. Means for launching a ship's boat comprising outwardly inclined ways on the deck of the ship, skate-like members movable on the ways, standards on the skate-like members, studs extending laterally from the standards, inner and outer straps arranged about the studs and secured together in spaced relation and formed with vertical slots at their lower ends, keels connected with the ends of the boats having links fastened thereto and receivable within the slots, levers arranged in the spaces between the straps and pivoted to the straps, the lower ends of the levers being adapted to embrace the links, and means for actuating the levers to release the links, substantially as and for the purposes set forth.

3. Means for launching a ship's boat as claimed in claim 3, wherein fingers are carried with the straps to point opposite the lower ends of the levers, rods extending inwardly from the standards, a block and tackle arrangement, and two comparatively short lengths of chain carried by the block and tackle arrangement the outer link on one length of the chain being loosely but permanently engaged with the adjacent rod and the other link with the other short length of chain being removably engaged with one of the fingers, substantially as and for the purposes set forth.

4. Means for launching a ship's boat comprising outwardly inclined ways, skate-like members operating thereon, standards carried by the skate-like members, cooperative means on the standards for releasably supporting the boat between the standards, fingers associated with the releasing means, a block and tackle arrangement, and two short lengths of chain carried with the block and tackle arrangement the outer link on one length of the chain being permanently and slidably engaged with the adjacent rod and the other link of the remaining chain being releasably engaged with the adjacent finger.

In testimony whereof I affix my signature.

ADRIANUS VREUGDENHIL.