

3 Sheets—Sheet 1.

No. 586,316.

Patented July 13, 1897.

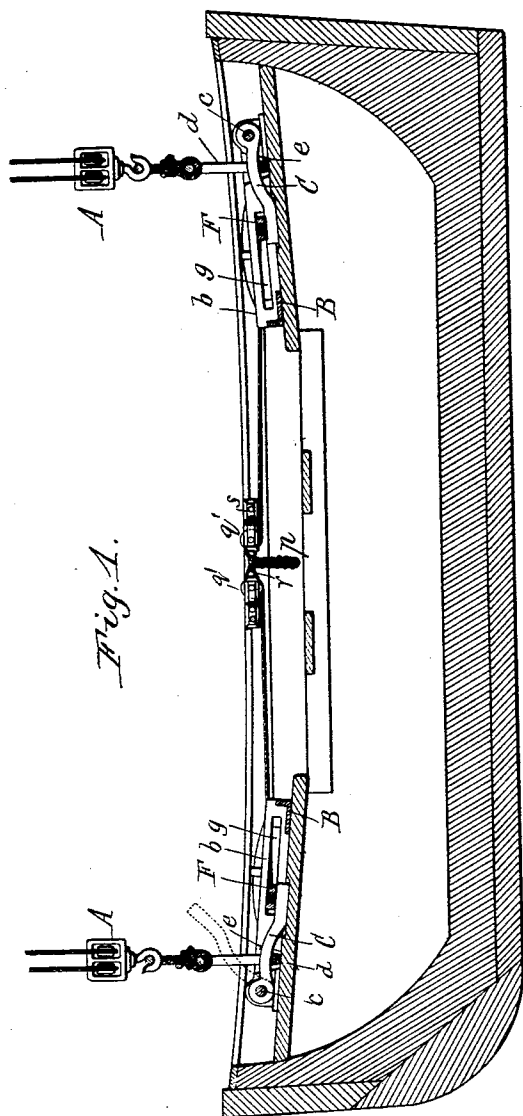


Fig. 1.

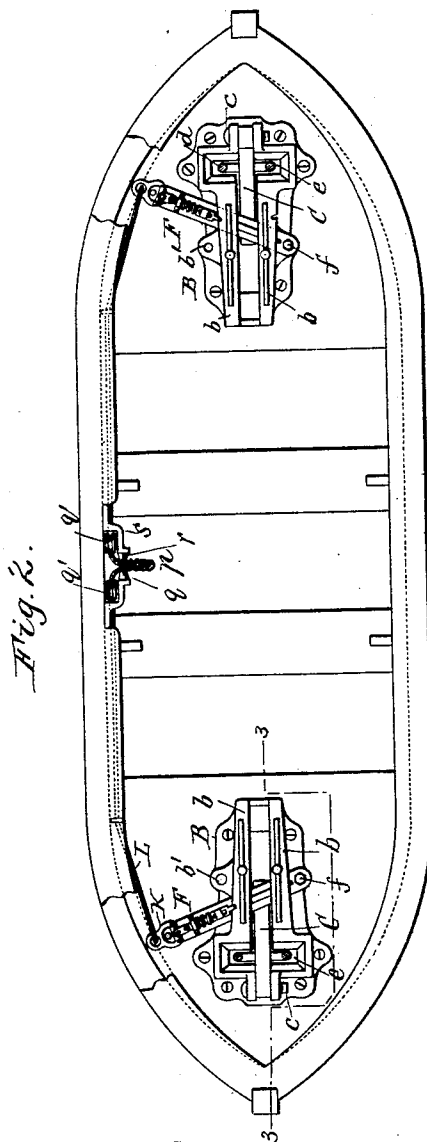


Fig. 2.

Chas. F. Burkhardt.
Henry L. Deck.

John Murphy INVENTOR.
By Wilhelm Storrer
ATTORNEYS.

ATTORNEYS.

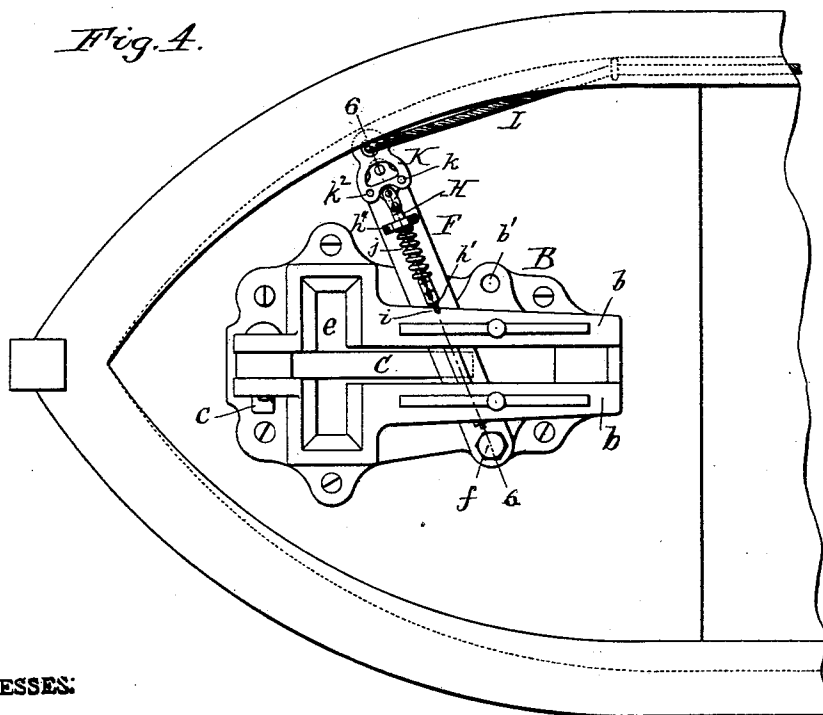
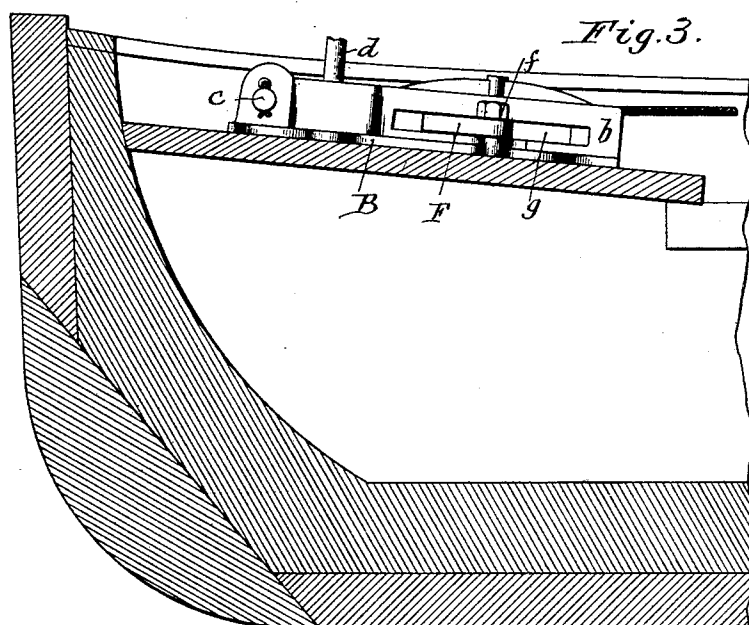
(No Model.)

3 Sheets—Sheet 2.

J. MURPHY.
BOAT DETACHING DEVICE.

No. 586,316.

Patented July 13, 1897.



WITNESSES:

Chas. F. Burkhardt.
Henry L. Deck.

John Murphy INVENTOR.
By Wilhelm H. H. H. ATTORNEYS.

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Fig. 5.

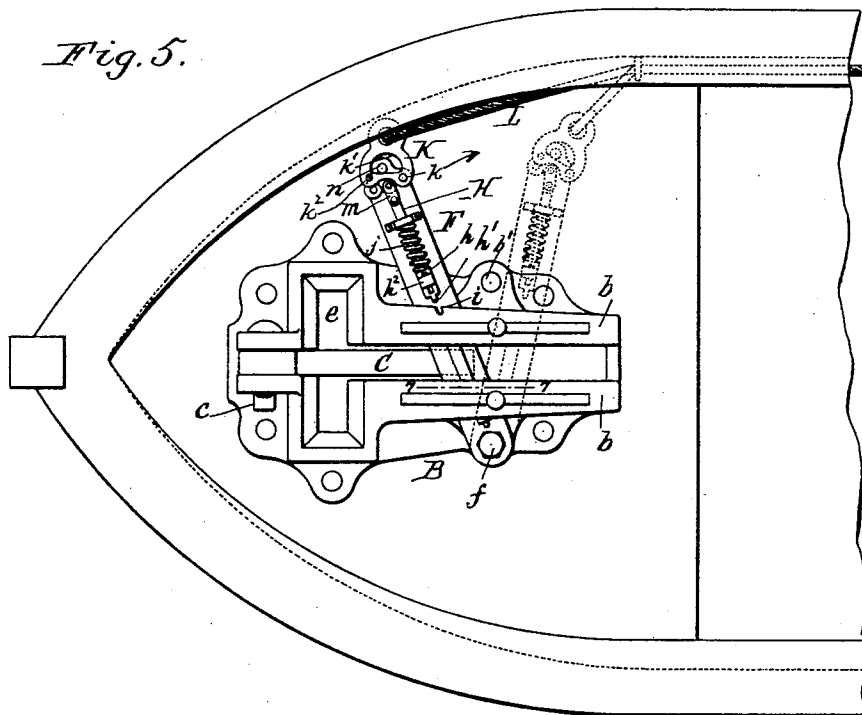


Fig. 6.

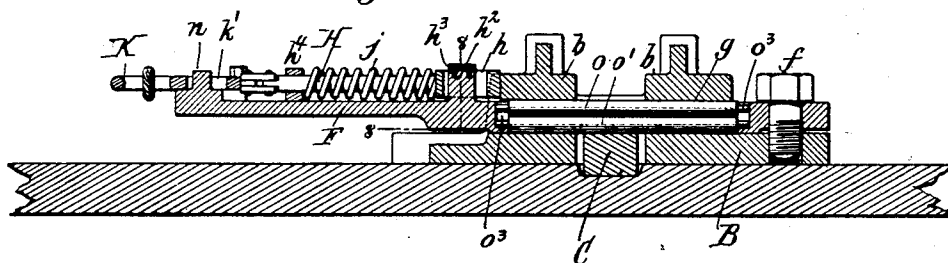


Fig. 7.

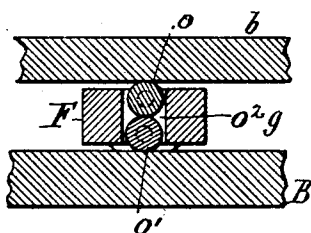
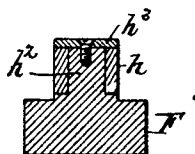


Fig. 8.



WITNESSES:

Chas. F. Burkhardt.
Henry L. Deck.

John Murphy
By Wilhelm H. Pomeroy
INVENTOR.
ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN MURPHY, OF BUFFALO, NEW YORK.

BOAT-DETACHING DEVICE.

SPECIFICATION forming part of Letters Patent No. 586,316, dated July 13, 1897.

Application filed March 5, 1897. Serial No. 625,992. (No model.)

To all whom it may concern:

Be it known that I, JOHN MURPHY, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Boat-Detaching Devices, of which the following is a specification.

This invention relates to the couplings or detaching devices which are employed for detachably connecting life-boats with the suspension-tackle carried by the davits, and more especially to devices of this class in which the two couplings at opposite ends of the boat are connected together for simultaneous operation, so as to cast off the bow and stern at the same time.

The object of my invention is the provision of a simple and inexpensive detaching device which is certain in action and which can be operated with comparatively little effort.

In the accompanying drawings, consisting of three sheets, Figure 1 is a central longitudinal section of a life-boat provided with my improvement, showing the boat coupled to the davit-tackle. Fig. 2 is a top plan view of the same with a portion of the gunwale broken away. Fig. 3 is an enlarged longitudinal section of one end of the boat in line 3 3, Fig. 2. Fig. 4 is an enlarged top plan view thereof. Fig. 5 is a view similar to Fig. 4, showing the catch of the locking-lever withdrawn preliminary to unlocking the coupling-latch. Fig. 6 is a transverse vertical section in line 6 6, Fig. 4. Fig. 7 is a vertical longitudinal section in line 7 7, Fig. 5, on an enlarged scale. Fig. 8 is a cross-section of the locking-lever in line 8 8, Fig. 6, on an enlarged scale.

Like letters of reference refer to like parts in the several figures.

A A represent the lower blocks of the davit-tackle, from which the life-boat is suspended and with which it is detachably connected by my improved coupling devices. One of these devices is arranged at the bow and the other at the stern of the boat, and as they are identical in construction a description of one will apply to both.

B is a base-plate firmly secured to the upper side of one of the end seats or cross-pieces of the boat and having a pair of raised lon-

gitudinal flanges or walls *b*, separated by an intervening space.

C is a vertically-swinging tongue or latch pivoted at one end to the outer end of the base-plate B by a transverse pin *c*, so that its free end swings lengthwise of the boat. This latch when in its normal horizontal position lies in the space between the flanges *b* of the base-plate and is adapted to pass through a coupling ring or hook *d*, carried by the block A of the davit-tackle, as shown in Figs. 1 and 2. The base-plate is provided between the pivot and the free end of the latch with a transverse slot or recess *e*, which receives the lower portion of the coupling-ring *d* and prevents the same from sliding on the latch when the boat is coupled to the davit-tackle.

F is a horizontally-swinging locking arm or lever pivoted at one end to the base-plate, as shown at *f*, and adapted to overlap or engage over the free end of the latch C, so as to lock the same against upward movement and prevent stripping of the coupling-ring *d* from the latch. The locking-lever F passes through longitudinal slots *g*, formed in the sides of the base-plate flanges *b*, above the plane of the latch C, as shown in Figs. 1, 3, and 6, whereby the locking-lever is enabled to effectually resist the vertical strain exerted upon it by the weight of the suspended boat and its occupants. The slots *g* are made of such length and are so arranged with reference to the latch C that the locking-lever can be swung inwardly far enough to clear and unlock the latch, as shown by dotted lines in Fig. 5, and so that it can be swung over the free end of the latch for locking the same, as shown by full lines in the drawings.

The locking-lever is confined in its normal position by a retaining-catch H. This catch is preferably arranged to lock the lever automatically when the latter is moved into its normal position, and consists of a spring-bolt arranged lengthwise of the locking-lever and provided at its front end with a guide-loop *h*, terminating in a tooth *h'*, which interlocks with a notch *i*, formed in the adjacent upright flange *b* of the base-plate, as shown in Figs. 2 and 4. The loop *h* is guided on a stud *h²*, projecting upwardly from the locking-lever, and is confined thereon by a cap *h³*, se-

cured to the upper end of the stud, as shown in Figs. 6 and 8. The outer portion of the spring-bolt is guided in a perforated lug h^4 of the locking-lever. j is the spring of the bolt, surrounding the same between the guide-lug h^4 and the guide-loop h and tending to force the bolt forwardly in a common manner.

K is an eye or attachment which is arranged at the free end of the locking-lever and to which the operating cord or chain L of the lever is attached. This eye is pivoted at its inner side to the locking-lever by a vertical pin k , so as to serve as a releasing-lever for the retaining bolt or catch H as well as an attachment for the operating-cord. This oscillating eye or releasing-lever is connected at a distance from its pivot with the spring-bolt H by a link m , so that upon swinging the same in the direction of the arrow in Fig. 5 the eye is caused to withdraw the spring-bolt from the notch of the base-plate flange b , as shown in the same figure, thereby releasing the locking-lever F.

n is a stop or pin carried by the outer portion of the locking-lever and arranged to limit the stroke of the lever-eye K beyond the movement necessary to unlock the spring-bolt. This locking-pin projects into an opening k' of the eye. By this construction of the bolt-releasing device the lever-eye after withdrawing the bolt is arrested in its swinging movement by contact with the stop n of the locking-lever, and during the continued pull on the operating-cord the eye acts as a rigid part, causing the locking-lever to be swung inwardly out of engagement with the latch C. The latch being now unlocked is swung upward by the weight of the boat, allowing the coupling-ring d to strip itself from the latch and uncoupling the boat from the davit-tackle.

In order to minimize the friction between the locking-lever and the contiguous surfaces of the latch C and the walls of the slots g of the base-plate, the lever is provided with rolling antifriction devices, consisting, preferably, of a pair of longitudinal rollers o o' , which are journaled one above the other in a longitudinal slot o^2 of the lever. These rollers are of the same diameter and roll against each other, as most clearly shown in Figs. 6 and 7, and the upper roller o runs in contact with the upper walls of the slots g , while the lower roller o' runs in contact with the lower walls of said slots and the upper surface of the latch C, as shown in Fig. 6. These rollers have journals which are arranged loosely in upright ways or recesses o^3 , formed in the ends of the lever-slot o^2 . Each of the rollers forms a roller bearing for the other, and as they turn in opposite directions and are of uniform diameter they do not grind against each other.

The two coupling and detaching devices at the bow and the stern of the boat are arranged reversely, or so that the free ends of the latches C face each other. The operat-

ing-cords L lead from the two locking-levers F to the center of the gunwale on one side of the boat, where they meet in a loop p , forming a handle by which both cords are operated simultaneously. In order to cause both of these cords to be pulled at the same time and insure the simultaneous release of the boat at both ends, the portions of this loop are firmly bound together, as shown, so that the cords cannot be pulled unevenly. Each of these cords passes through an eye or guide q , secured to the inner side of the boat under the gunwale and around a vertical guide-roller q' , arranged near the middle of the gunwale. The adjacent portions of the operating-cords pass from the upright guide-rollers q' upwardly and inwardly over a horizontal guide-roller r , arranged between the upright guide-rollers. The three guide-rollers q' and r are journaled in suitable brackets s , secured to the inner side of the boat.

When the boat is coupled to the davit-tackle and it is desired to release the same, it is only necessary to pull the handle p of the operating-cords, when both cords will be uniformly drawn toward each other and both locking-levers released and swung toward each other, thereby unlocking both latches C positively and at the same time and allowing the bow and the stern of the boat to drop equally into the water, thus insuring the lowering of the boat without danger of capsizing.

In attaching the boat to the davit-tackle the latches C are raised above the base-plate and the coupling-rings d of the tackle are passed over the latches, after which the latches are lowered and the locking-levers F swung into the locked position shown by full lines in the drawings. As soon as the retaining-bolts H of the locking-levers arrive opposite the notches i of the base-plate they automatically interlock therewith, retaining the levers reliably in place. These locking-notches are arranged obliquely, as shown in Figs. 2, 4, and 5, so as to present an undercut inner edge, which prevents accidental unlocking of the bolt.

The base-plates B are provided on each side with an opening b' for receiving the pivot-bolt of the locking-lever F, and the combined eye and releasing-lever K is also provided on each side with a pivot-opening k^2 , as most clearly shown in Figs. 4 and 5, so that the eye can be fulcrumed on either side thereof and the locking-lever can be pivoted on either side of the base-plate. This permits the same coupling device or attachment to be used at either end of the boat and avoids the necessity of making the attachments rights and lefts.

I claim as my invention—

1. In a boat coupling and detaching device, the combination with a vertically-swinging tongue or latch pivoted to the boat and adapted to receive an attachment of the davit-tackle, of a horizontally-swinging locking-le-

ver pivoted to the boat on one side of said latch and arranged to engage with the free end of the latch, substantially as set forth.

2. In a boat coupling and detaching device, the combination with a base-plate having raised longitudinal flanges separated by an intervening space and each having a horizontal slot, of a latch pivoted at one end to the base-plate by a horizontal pivot-pin and adapted to lie between the raised flanges of the base-plate, and a horizontally-swinging locking-lever pivoted to the base-plate and arranged in the slots of its flanges and adapted to engage with the free end of said latch, substantially as set forth.

3. In a boat coupling and detaching device, the combination with a base-plate and a vertically-movable coupling-latch arranged thereon and adapted to receive an attachment of the davit-tackle, of a horizontally-swinging locking-lever engaging with said latch for holding the same in its closed position, and an automatic catch whereby said lever is locked in position, substantially as set forth.

4. In a boat coupling and detaching device, the combination with a base-plate and a vertically-movable coupling-latch arranged thereon and adapted to receive an attachment of the davit-tackle, of a horizontally-swinging locking-lever for holding said latch in its normal position, an operating device for shifting the lever, and a retaining-catch for said locking-lever carried by the lever and connected with said operating device, substantially as set forth.

5. In a boat coupling and detaching device the combination with a base-plate and a coupling-latch pivoted thereto, of a locking-lever fulcrumed on said base-plate and arranged to engage with the free end of said latch, a spring-catch mounted on said lever and adapted to interlock with the base-plate, a releasing-lever pivoted to said locking-lever

and connected with said spring-catch, and an operating device connected with said releasing-lever, substantially as set forth.

6. In a boat coupling and detaching device, the combination with a base-plate and a coupling-latch pivoted thereto, of a locking-lever fulcrumed on the base-plate and adapted to engage with said latch and having an anti-friction-roller bearing against said latch, substantially as set forth.

7. In a boat coupling and detaching device, the combination with a base-plate having raised flanges provided with horizontal slots, of a latch pivoted to said base-plate and arranged between said flanges, a slotted locking-lever pivoted to one side of the base-plate and passing through the slots of its flanges, and a pair of anti-friction-rollers journaled in the slot of the locking-lever, one above the other, and bearing against the contiguous surfaces of the base-plate and said latch, substantially as set forth.

8. In a boat coupling and detaching device, the combination with a pair of coupling-latches arranged at the bow and the stern of the boat, and a locking-lever arranged to engage with each of said latches, of upright guide-rollers arranged on one side of the boat, at or near the middle thereof, a horizontal guide-roller arranged between said upright rollers, and operating cords or chains connected at their outer ends with said locking-levers and passing with their inner portions around said upright guide-rollers and over said horizontal guide-roller, the meeting portions of said cords terminating in a handle, substantially as set forth.

Witness my hand this 5th day of February, 1897.

JOHN MURPHY.

Witnesses:

CARL F. GEYER,
KATHRYN ELMORE.