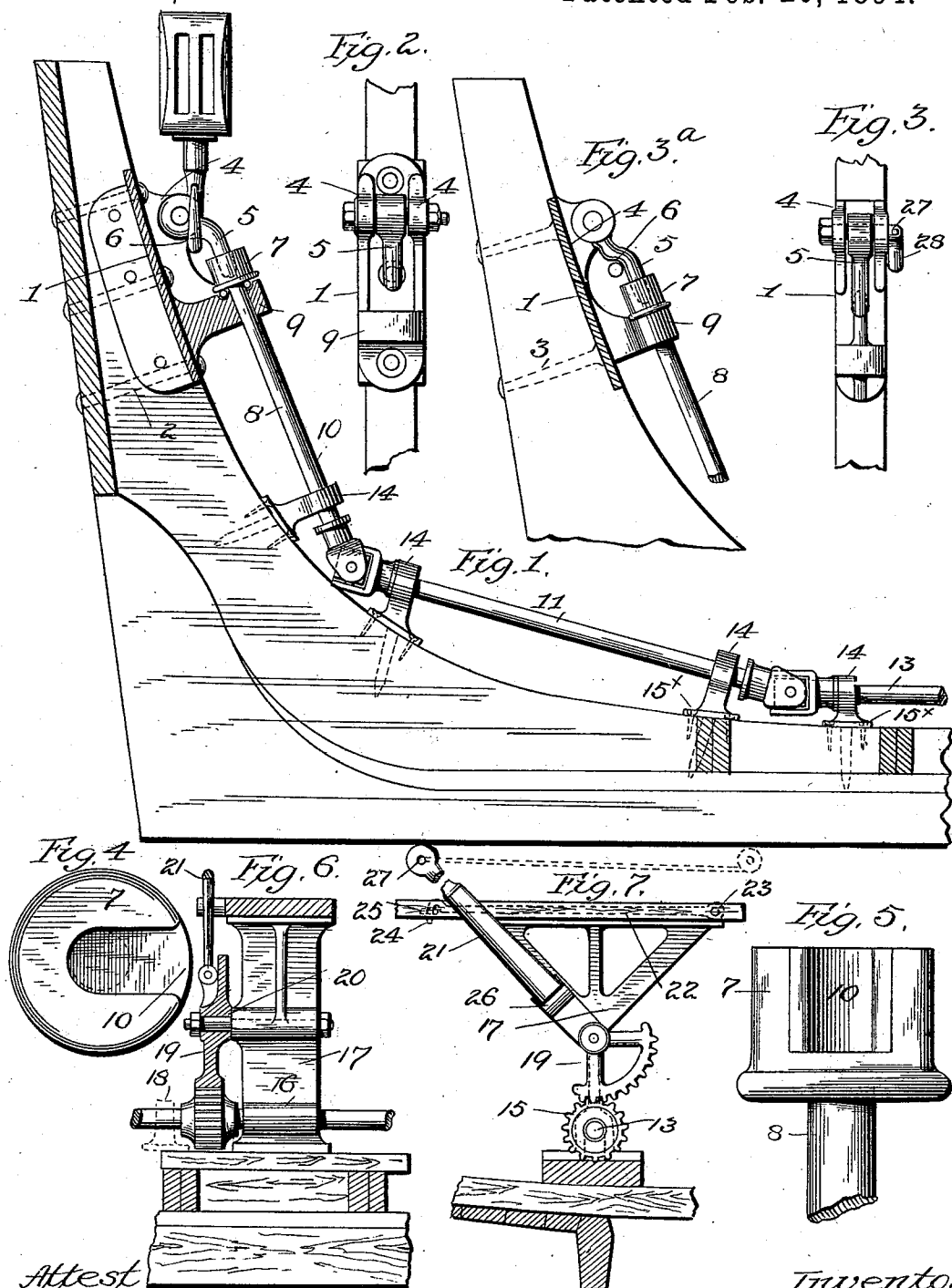


(No Model.)

H. E. ROTTMER.
BOAT DETACHING APPARATUS.

No. 515,021.

Patented Feb. 20, 1894.



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BOAT-DETACHING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 515,021, dated February 20, 1894.

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To all whom it may concern:

Be it known that I, HENRY E. ROTTMER, a citizen of the United States, residing at Washington, District of Columbia, have invented certain new and useful Improvements in Boat-
5 Detaching Apparatus, of which the following is a specification, reference being had therein to the accompanying drawings.

It is the object of my invention to provide
10 means, whereby the tackle or fall may be readily connected to a ship's life boat cutter or other small boat for suspending the same from the davits, said means being capable of being instantly and simultaneously detached
15 at the bow and stern whenever desired and under the perfect control of the operator, who may be either in the boat itself or upon the ship's deck.

In the drawings Figure 1— is a sectional
20 view of one end of a boat embodying my improvement, it being understood, that the opposite end of the boat is precisely the same, as regards my improvement. Fig. 2— is a detail front view of the pivoted latch and its
25 bracket. Fig. 3— is a similar view of a modification showing a different form of pivot bolt for the latch. Fig. 3^a— is a side view of the same partly in section. Figs. 4— and 5— are respectively a detail front and side view of
30 the rotary clutch. Fig. 6— is a side elevation partly in section of the means for operating the intermediate flexible shafting between the clutches. Fig. 7— is a view of the same a quarter turn from Fig. 6—.

35 Within the boat at the bow and stern are secured brackets 1— by any suitable means as the through bolts 2— of Fig. 1— or the tangs 3— of Fig. 3^a, and these brackets may be either cast or formed of wrought iron, Tobin
40 bronze or other metal as desired, said castings have ears 4— between which are pivoted the latch 5— bent to form a bearing shoulder 6— either as shown in Fig. 1— or in Fig. 3^a. The
45 free end of this latch extends down in inclined position and is engaged normally by a rotary clutch 7— the shaft 8— of which is journaled in a bearing 9— of the bracket, anti-friction balls being introduced upon
50 which both the shaft and also the bottom of the clutch bears, thus reducing the friction between the shaft and the interior of the bearing in the post 9— and also between the

base of the clutch and the upper face of said bracket. The clutch consists of a hollow rotary shell having its top open to receive the
55 free end of the latch and a narrow opening 10— in its side through which the free end of the latch is free to pass when said opening is brought around to proper position in the line of movement of the latch, this occurring when
60 the clutch is rotated. The block of the fall or tackle has its hook connected with the latch and bearing on the under shoulder 6— which it will be noticed lies in a vertical plane within the plane of the pivot and as shown in
65 Fig. 3^a within the vertical plane of the inner edge of the ears. The strain on the latch therefor constantly tends to swing the same inwardly and upwardly, so that the fall or
70 tackle hook will not only be detached but by reason of the bent and shouldered construction of the hook, there will be no liability
75 whatever of the hook failing to free itself entirely from both the latch and the ears to which it is pivoted. This renders the action quick and certain as soon as the latch is released by the rotation of the clutch which
80 must be turned sufficiently so that the narrow opening will be innermost and in the line of the inward movement of the latch. At other times the solid side wall of the clutch will prevent inward swinging movement of the
85 free end of the latch and the same will be securely held to retain the tackle in connection with the boat.

It is most desirable in providing operating
85 connections for the two clutches, that the same be practically free from lost motion, that it be unaffected by expansion and contracting so far as accuracy in operation is concerned,
90 and at the same time, that it be arranged to be readily accessible for operation and yet out of the way. For this purpose I make said connections conform to the bottom of the
95 boat throughout its extent and while I have shown it within the boat I do not wish to limit myself as obviously it may be boxed in, arranged within the keel or under the keel
100 along the gunwale under the thwart or amidships as found most desirable. The connection consists of a flexible shafting made up of a sufficient number of sections to conform closely to the curved form of the boat bottom. The clutches with their castings it will be no-

ticed, are arranged in incline position and said clutches are carried by short inclined sections of shafting 10^x, 10^x. These are connected at their lower ends with other short sections 11— by universal couplings 12— of any approved pattern. The sections 11— are connected with the main longitudinal section 13— in the same manner, and this number of sections, is sufficient to permit the shafting to lie close against the inner side of the boat, or in or under the keel. The shafting is journaled in bearings 14— one of which is preferably located on each side of each coupling and these bearings are held by their screw shanks entering the wooden hull, wood screws 15^x— may also be passed through the flanges of the bearing into the boat timbers. I do not wish to be limited to any particular material in making the working parts, but I would mention Tobin bronze as being preferable for the universal joints, the pivoted latches and the rotary clutches. In order to operate the flexible shafting, I provide a pinion 15— on the shaft between the bearings 16— on the standard 17— and the bearing 18—. This pinion is operated by a segmental gear 19— journaled on a shoulder pin 20— in the standard 17— and a lever 21— connected to the segment. I have shown this standard under the thwart and the lever and segment at one side, the lever being arranged to project above the thwart and work along the edge of the same, but I do not wish to limit myself to this arrangement, as the standard may be slotted vertically and centrally and the lever segment and pinion arranged in said slot, the lever in this case projecting up through a slot in the thwart. This practically provides a standard on each side of the lever and segment. In the arrangement shown, the lever works between the edge of the thwart and a guide rod 22— pivoted to the edge of the thwart at 23— and having a hooked end 24— entering an eye or staple 25— on the thwart. This not only guides the lever but limits the throw thereof and thus determines the position of the clutches. By throwing the lever its full stroke one way, the shafting is rotated and the clutches revolved, so as to bring the open side of the same accurately into position for letting the pivoted latch fly out to release the fall, and then by replacing the latch end in the clutch, the lever is thrown to its full limit in the opposite direction to turn the clutch and lock the latch in place. Both clutches are operated exactly alike and the connections are such as to keep them accurately in position relative to each other, so that their open sides will align with the free ends of the latches at precisely the same moment in releasing the boat. The lever is preferably hinged at 26— to the segment, so that when not in use, it may be turned down into the boat and out of the way. It has an eye 27— to receive a rope or chain which passes through a block at the side of the boat and thence to the ship's deck by which the

apparatus may be operated from the ship's deck instead of within the boat itself. The block and tackle may be attached to the latch when said latch is closed provided the said block has a hook instead of a link as shown in Fig. 1— by simply passing the hook through the opening beneath the latch, but where a link is employed on the fall and it is desired to attach it to the latch when closed and without operating the entire line of flexible shafting, special provision must be made. This may consist simply of a readily removable pivot bolt 27 for the latch such as is shown in Fig. 3—; which has a hinged section 28—. When this bolt is removed, the latch is lifted from the clutch and the link having been placed, the latch is run through it into the clutch and the pivot pin is then replaced, thus completing the attachment. Another way of doing this is to provide a toothed clutch in the section of shafting carrying the rotary clutch, which will permit said rotary clutch to be lifted and turned back independent of any movement of the flexible shafting, so that the open side may be brought around to permit the lateral swinging of the latch, the latch being secured again by turning the clutch around again and causing the sections of the toothed clutch to engage.

I do not wish to limit myself to the universal couplings in the flexible shafting, as the sole means of connection as bevel gears may be used and the operating pinion and segment may also be replaced by a lever arrangement if desired.

It is not necessary that the tackle hook engage the latches directly as shown and described above, but instead I may use any suitable form of intermediate bridle, the purpose being to locate the fall away from the ends of the boat if desired.

I claim as my invention—

1. In combination in a boat detaching apparatus, the rotary holding and releasing device for the fall, and the means for giving the same rotary movement, comprising the continuous flexible shafting conforming at its central portion to the boat's bottom and having upturned end portions carrying the rotary devices at their upper ends, substantially as described.

2. In combination, a boat detaching apparatus, the continuous flexible shafting conforming to the boat's bottom, and having upturned end portions conforming to the ends of the boat, the latches pivoted at the ends of the boat and extending therefrom, and the means for retaining the said latches consisting of the rotary clutches each having an open top and an open inclined or vertical side to receive the latches, said clutches extending upwardly from the upturned ends of the flexible shaft, substantially as described.

3. In combination, in a boat detaching apparatus, the flexible shaft conforming to the boat's bottom, and having upturned ends conforming to the ends of the boat, the latches

pivoted to the ends of the boat and extending downwardly from the pivotal points, said latches having offset bearing shoulders for the fall hook at a point below the said pivot, whereby the strain of said hook is longitudinally of the latch toward the pivot, and the means for retaining the latch against lateral movement, consisting of the rotary clutches on the upturned ends of the flexible shafting, substantially as described.

4. In combination in a boat detaching apparatus, the rotary holding and releasing devices for the fall, the continuous flexible shafting having upturned ends to connect with the rotary holding devices, and a central portion conforming to the boat's bottom, the pinion on said central portion, the segment operating laterally of the boat and meshing with the pinion and the means for operating the segment, substantially as described.

5. In combination in a boat detaching apparatus, the rotary holding and releasing devices for the fall, the continuous flexible

shafting having upturned ends to connect with the rotary holding devices, and a central portion conforming to the boat's bottom, the pinion on said central portion, the segment operating laterally of the boat and meshing with the pinion and the means for operating the segment consisting of the lever and the flexible connection extending from said lever for operating the same from the ship's deck, substantially as described.

6. In combination, the releasing devices at the ends of the boat, the shafting between said devices, the pivoted lever for operating the shafting adapted to be turned down within the boat, and the pivoted guide bar for the lever, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY E. ROTTMER.

Witnesses:

HENRY E. COOPER,
WALTER DONALDSON.