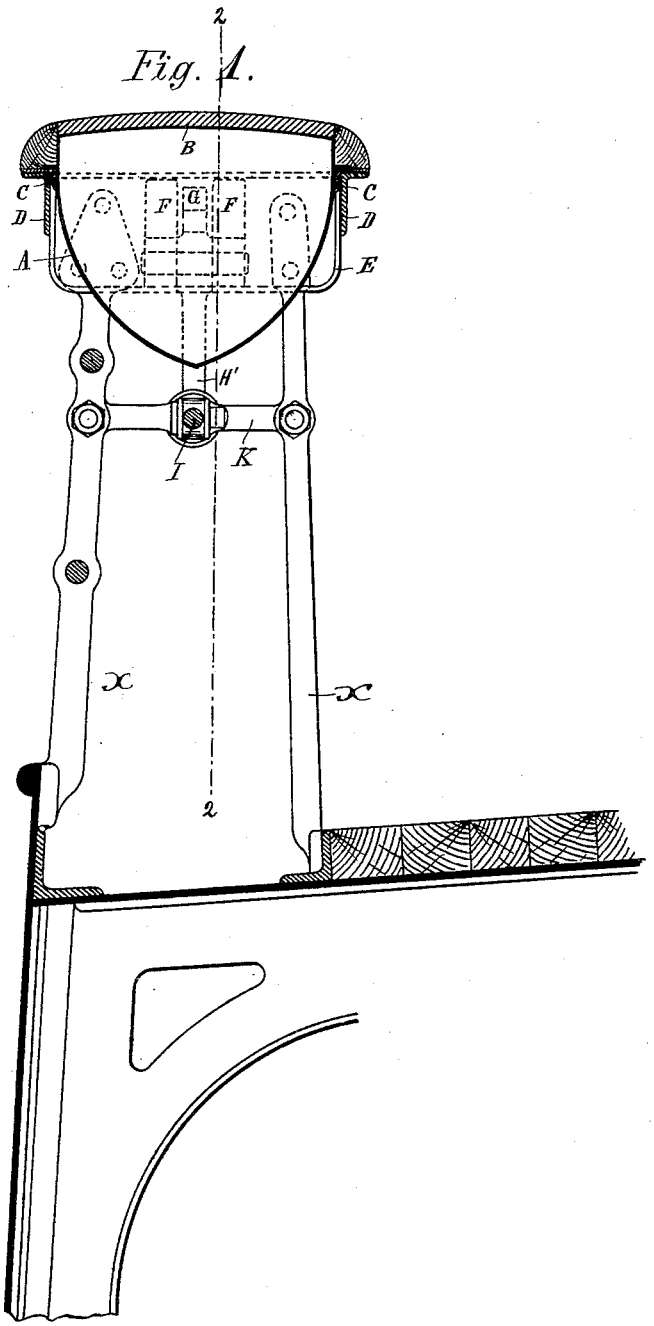
(No Model.) 4 Sheets—Sheet 1.

G. H. LIDBECK.

LIFE BUOY.

No. 418,897. Patented Jan. 7, 1890.

Fig. 1.



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(No Model.) 4 Sheets—Sheet 2.

G. H. LIDBECK.

LIFE BUOY.

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Fig. 2.

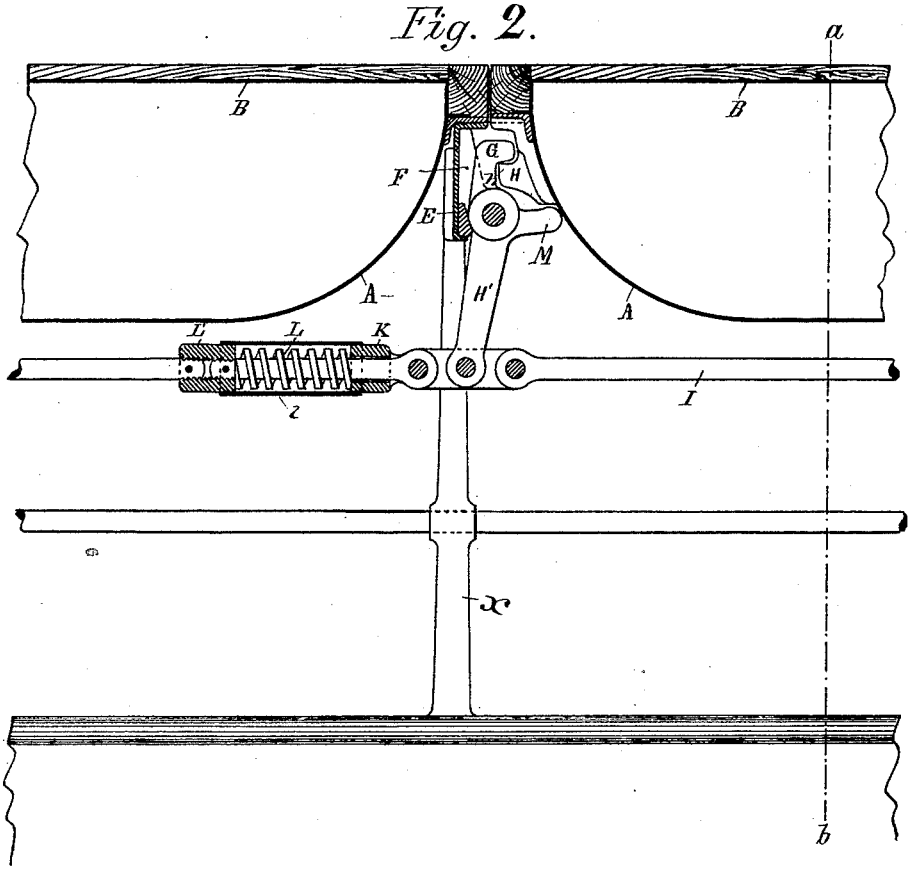
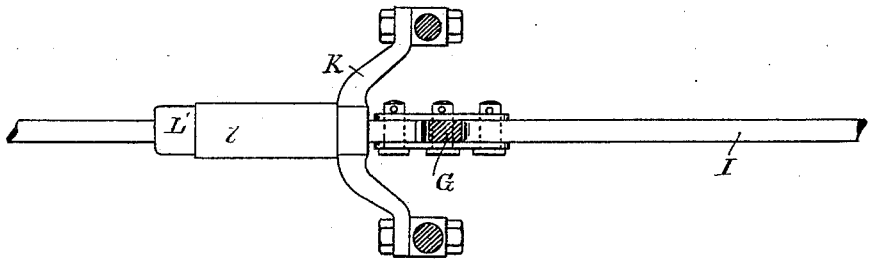


Fig. 5.



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(No Model.)

4 Sheets—Sheet 3.

G. H. LIDBECK.

LIFE BUOY.

No. 418,897. Patented Jan. 7, 1890.

Fig. 4.

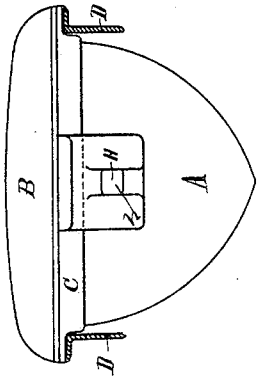
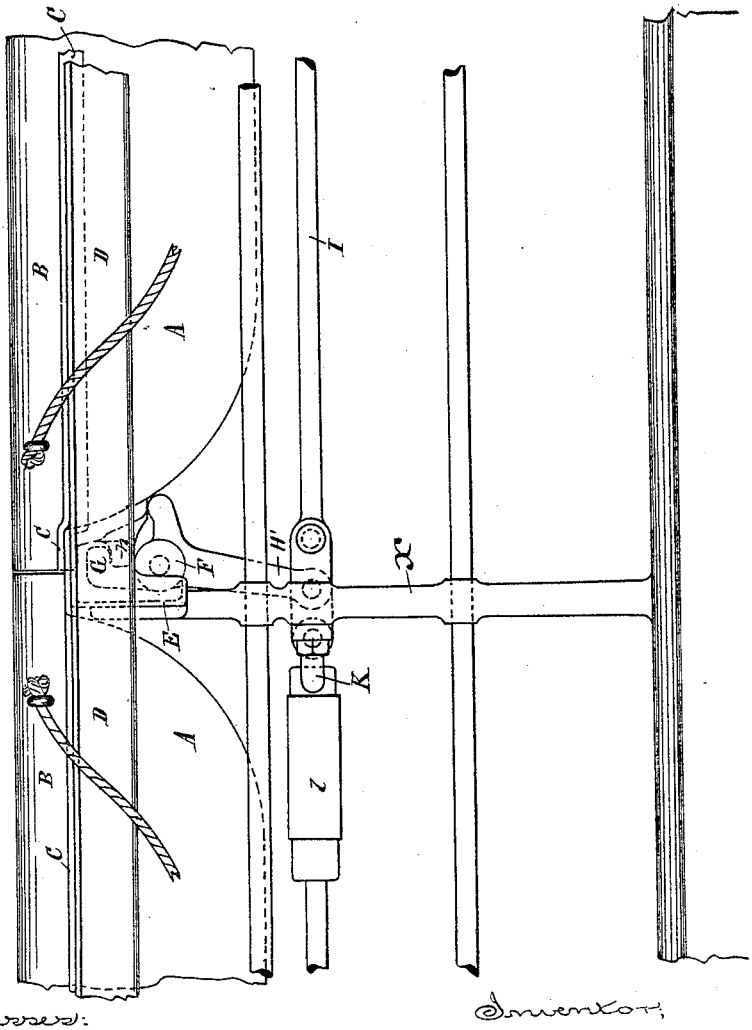


Fig. 3.



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(No Model.) 4 Sheets—Sheet 4.

G. H. LIDBECK.

LIFE BUOY.

No. 418,897. Patented Jan. 7, 1890.

Fig. 7.

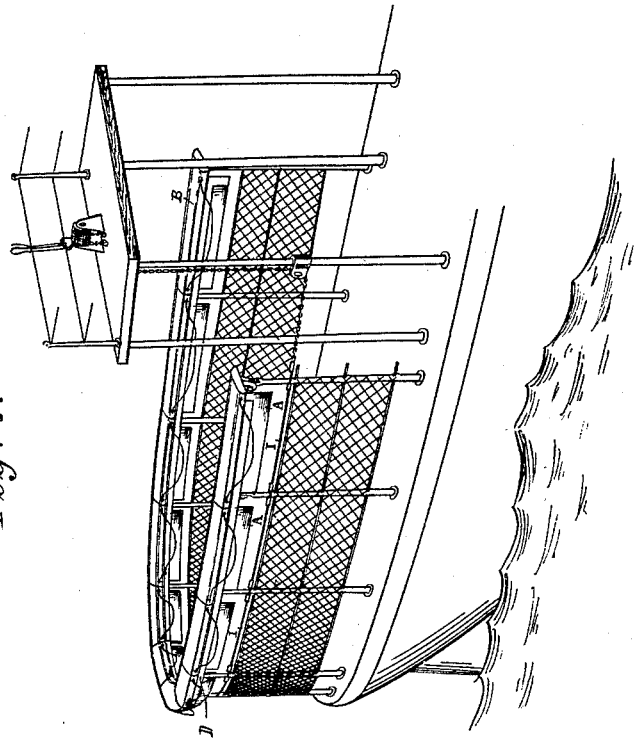
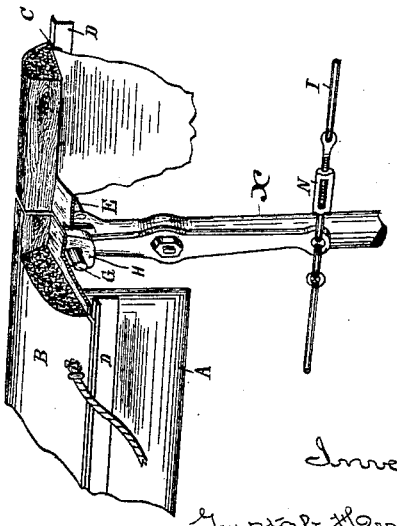


Fig 6.



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UNITED STATES PATENT OFFICE.

GUSTAF HENRIK LIDBECK, OF CARLSKRONA, SWEDEN.

LIFE-BUOY.

SPECIFICATION forming part of Letters Patent No. 418,897, dated January 7, 1890.

Application filed June 6, 1889. Serial No. 313,396. (No model.)

To all whom it may concern:

Be it known that I, GUSTAF HENRIK LIDBECK, a subject of the King of Sweden, and a resident of Carlskrona, Sweden, have invented certain Improvements in Life Buoys or Floats, of which the following is a specification.

My invention relates to life buoys or floats for use at sea in case of the foundering or wreck of the vessel; and the object of my invention is to provide a sea-going vessel with such buoys of a novel and simple construction, taking up no particular space and in position for use at a moment's notice. For this purpose the buoys are so placed on the deck of the vessel as to constitute when in place one of the fixed parts of the vessel—as, for example, the guard or railing running round the stern of the vessel or round the entire ship.

In order that my invention may be the better understood, I have illustrated it in the accompanying drawings, wherein—

Figure 1 is a longitudinal section of a part of the railing or guards of a vessel provided with my improved life buoy or float. Fig. 2 is a transverse section of the same, taken in the plane indicated by the dotted line 2 2 in Fig. 1. Fig. 3 is a face view of a part of the railing, similar to Fig. 2. Fig. 4 is an end view of one of the buoys detached. Fig. 5 is a view illustrating one of the details of construction. Fig. 6 is a view in perspective, illustrating a modification; and Fig. 7 is a perspective view illustrating the application of this modification to the rail of a small vessel.

In the drawings, A represents the float or buoy, which is in the form of an air-tight boat closed on all sides, and constructed by preference of heavy sheet metal, as copper, which I find very satisfactory. This boat is covered over at the top with a thick sheathing of wood B, which projects somewhat over the sides and ends of the buoy, which has a flange C, to which said sheathing is secured by bolts or otherwise.

The rail or guard of the vessel is formed of two sets of standards X, arranged in pairs, as seen in the drawings, and united by tie-pieces E. These standards serve as supports for a frame-work of angle-iron D, which runs completely around the vessel and supports the floats on each side, the flange C on the buoy resting directly thereon. Between each pair of standards X is mounted one of the buoys, as seen in Fig. 7, and between the several buoys is arranged a locking device, whereby the entire series may be set loose in an instant by the movement of a hand-spike device, preferably placed on the bridge, all as will be fully described hereinafter.

The device for locking the floats or buoys in place in the frame consists of a lever H′, pivoted on a projection from the tie-piece E, one end of which is provided with a hook G, and the other end of which is connected to a rod I, running around the vessel or around such parts thereof as may be provided with my improved floats. This connector may be composed of iron rods jointed together and united at the end to a chain or the like passing over the drum of the hand-spike device, or it may be formed of a wire rope passing around the parts of the vessel provided with my floats and running round the drum of the device. In Fig. 7 the manner of arranging the parts is well illustrated. On the rear end of each of the floats, or on that end lying when the floats are placed in the frame-work toward the stern of the vessel, is secured a plate H, of cast metal, preferably, provided with a projection *h*, adapted to engage and take under the hook G on the end of the lever H′ when the parts are in place. I prefer to secure this plate H to the float by rivets through it and the flange C, so that should these rivets pull or tear out the air-tight compartment of the float will not be injured, but will remain perfectly water and air tight. It will be readily seen that were the rivets set in the side of the float in tearing out they would leave apertures in the side, and thus render the float valueless as a life-saving device. On the lever H′ is also formed a finger M, which, when the liberating device on the captain's bridge is operated, causing the connector I to free the floats by withdrawing the hooks G from engagement with the projection *h*, lifts or presses the rear end of the float up out of the frame-work and sets the same positively free in case it should happen to stick therein. On the fore end of

the float the flange C is made of double width, and on the rear or aft end thereof this flange is elevated slightly or turned up, as seen in Fig. 3, so that when the floats are in place in the frame-work the flange on the rear end of one of the floats will take over and rest directly on the flange at the fore end of the float behind and thus hold it down. Now, it is evident that when the floats are set properly in the frame-work, the flange of one float taking over the flange on the end of the float next it, and the locking device is operated so as to lock the rear end of each float securely to the frame, the forward ends of the floats will also be locked by the projection of the flanges one over the other, and also that when the liberating device is operated to free the rear ends of the floats they will be freed at both the rear and forward ends and also lifted slightly.

I propose to run a life-line about the floats, as seen in the drawings, so that a firm hold may be had on the same, and I also prefer to attach this line to the wood sheathing rather than directly to the side of the float, for the same reason as that given for the riveting of the plates H to the flanges.

To provide against the freeing of the floats by the heaving and tossing of the vessel during a storm or by any other means—such as the cutting of the connector I—I provide the device I will now describe, referring particularly to Figs. 2 and 5 for illustration. In these figures, I represents the connector, formed, as before stated, of a series of rods coupled together by a sort of spring-link and having bearings in brackets K, bolted to and tying together the several sets or pairs of standards X. This construction will be readily seen. The bearing for the connector consists of a boss at about the middle of the bracket and projecting slightly above the face thereof, as seen in section in Fig. 2. The connector I passes through this bracket and screws into a coupling-nut L′, into which is also screwed the end of the next rod of the series forming the connector I. About the connector, between the coupling-nut and the bracket, is a coil-spring L, incased in a tube *l*, preferably of heavy sheet metal. When the liberating device is operated to free the floats, the connector I will be drawn in somewhat, thus compressing the spring L between the bracket and the coupling-nut L′, as will be clearly seen. The ratchet of the hand-spike device will prevent the springs from retracting the connector I and again locking the floats in the frame-work.

In Fig. 6 I have shown a slight variation in the construction of my improved float, suitable for use on vessels of small size and with limited deck-space, where a wide guard, such as is necessary for the employment of the form just described, would make the available deck-room very small. This form I will now describe. For this form of float a single series of standards X only is necessary, and the body of the float is made quite narrow, as shown. The standards support on the inner side a frame-work of angle iron similar to the frame in the principal form; but the outer frame-work is supported by elbows passing under the floats, so that the standards may be set quite near the edge of the deck and the floats overhang. The arrangement is precisely the same and also the operation; but I prefer to use a wire rope for such small vessels and to omit the spring-coupling, using instead a screw-coupling, as shown in the drawings. The hook on the forward end of the buoy in this case engages a projection from a lever not unlike lever H′, and the rear flange takes under the forward flange of the next buoy in the same manner as the flanges of the floats in the other form engage one another. In this form of my improved float the floats may be held in place in the frame-work by projecting shoulders from the standards.

To operate the liberating device and free the floats, it will only be necessary for the captain or other officer to give the drum of the hand-spike device a few turns, winding up the chain attached to the end of the connector, (see Fig. 7,) thereby operating all the unlocking devices and lifting all the floats clear of the frame-work, as will be readily understood.

Having thus described my invention, I claim—

1. In combination with the deck of a vessel, the guards formed of a series of standards arranged in pairs, the floats secured thereto, and means, substantially as described, for freeing said floats from the guards and lifting them free therefrom.

2. The combination, with a double series of standards arranged in pairs around the deck of a vessel and the frame-work of angle-iron mounted thereon, of the floats provided with flanges extending around their circumferences and resting in said frame-work, a locking device whereby said floats are locked in said frame-work, and means, substantially as described, for unlocking said floats.

3. The combination of the double series of standards arranged in pairs or sets, the frame-work mounted thereon, the floats, substantially as described, set in said frame-work, and means, substantially as described, for releasing said floats at one operation.

4. The combination of the double series of standards arranged in pairs, each pair connected by a tie-piece, the floats mounted in a frame-work on said standards and forming the upper rail of the guards, each float being provided with a flange extending around its circumference and made of double width at its forward end, and provided at its rear end with a plate having a projection, and a lever fulcrumed on the tie-piece E and provided at one end with a hook adapted to engage the projection on the rear end of the float, and attached at its lower end to a connector which extends around the deck of the vessel and is

coupled at its end to a liberating device whereby when said liberating device is operated the float is released from the frame-work, substantially as described.

5. The combination of the double series of standards X, arranged in pairs around the deck, the frame-work mounted thereon, the floats A, mounted in said frame-work, the locking device whereby said floats are secured in said frame-work, the connector which couples all of said locking devices together, and the liberating device whereby the locking devices are operated and the floats liberated, substantially as set forth.

6. As a means for preventing the unlocking of the floats from the guards of a vessel, a connector formed of a series of rods provided with a collar and having a bearing in the frame-work of the guards, and a spring arranged between said collar on the connector and bearing in the guards, substantially as set forth.

7. The combination, with the connector, substantially as described, of the lever H′, coupled at its lower end thereto, fulcrumed on the standard of the guards, and provided with a hook at its upper end, of the float set in the guards above said lever and provided with a projection adapted to engage said hook on said lever H′, substantially as set forth.

8. The combination, with the connector, substantially as described, of the lever H′, coupled at its lower end thereto, fulcrumed on the standard of the guards, and provided at its upper end with a finger, and the float mounted in the guards above said lever and in the path of the finger on the upper end thereof, whereby the movement of said lever on its fulcrum causes the said finger to raise the float from the frame, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

GUSTAF HENRIK LIDBECK.

Witnesses:
NERE A. ELFWING,
ERNST SVANQVIST.