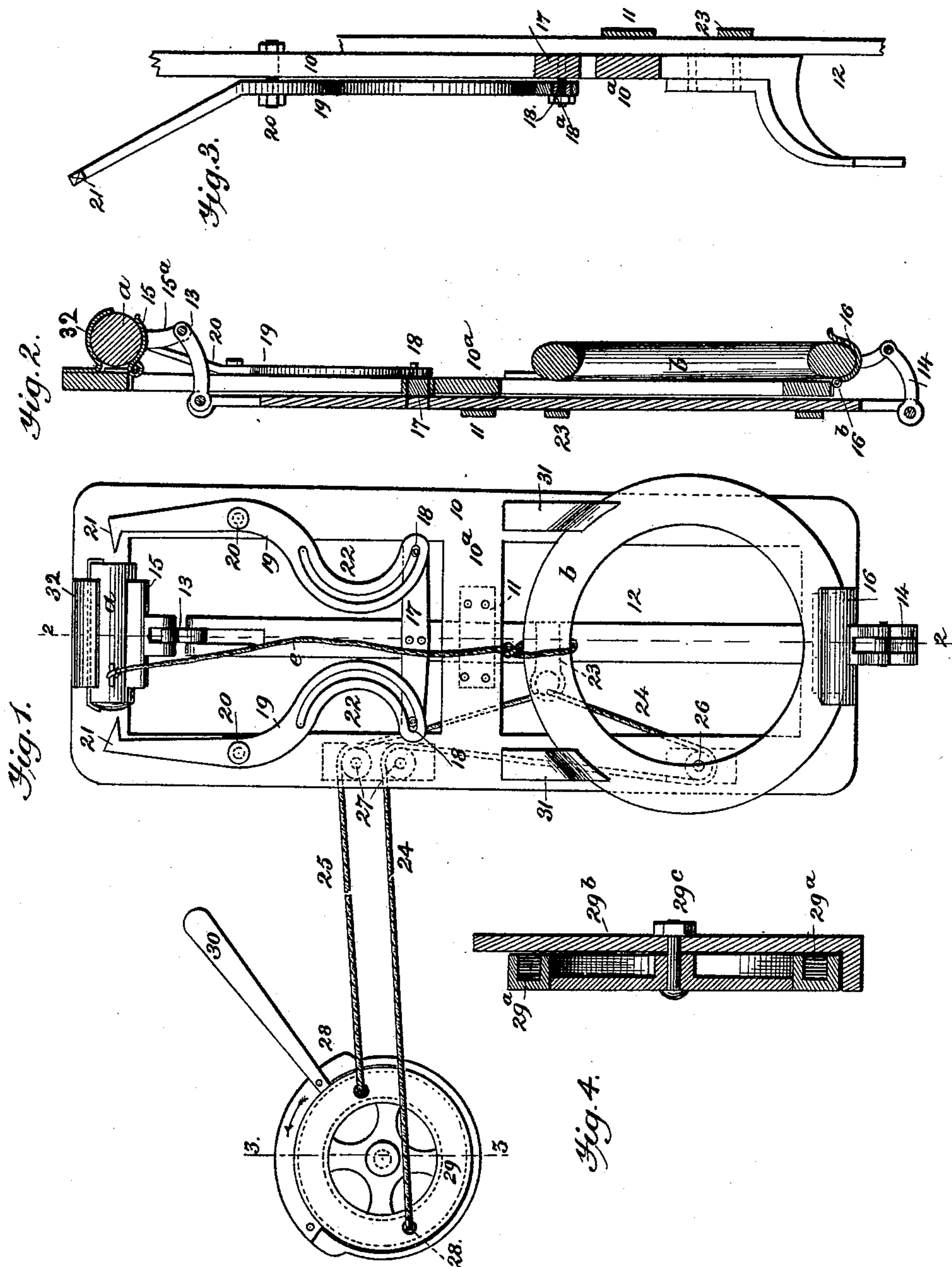


(No Model.)

R. ARCHIBALD.  
LIFE BUOY AND SIGNAL DETACHER.

No. 583,221.

Patented May 25, 1897.



WITNESSES:

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RUPERT ARCHIBALD, OF VANCOUVER, CANADA.

## LIFE-BUOY AND SIGNAL-DETACHER.

SPECIFICATION forming part of Letters Patent No. 583,221, dated May 25, 1897.

Application filed December 9, 1896. Serial No. 615,017. (No model.)

*To all whom it may concern:*

Be it known that I, RUPERT ARCHIBALD, a subject of the Queen of Great Britain and Ireland, residing on the steamship *Empress of China*, plying between Hong Kong, China, and Vancouver, British Columbia, Canada, have invented a certain new and useful Automatic Life-Buoy and Rescue-Signal Detacher and Piercer; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others to fully understand and use the same.

This invention has relation to an improvement in life-saving at sea; and its object is to furnish a means of unshipping the life-buoy and the rescue-signal, which is attached to the buoy, simultaneously in the case of a man overboard. To enable a drowning man to find the buoy at night or in a rough sea, the flame of the ordinary rescue-signal, when attached by a line to the buoy, has been of material assistance; but to attach the signal and pierce it at both ends for use takes some time, and the chance of saving the man is considerably reduced. The delay and difficulty heretofore experienced are obviated, and the advantages of my device will appear from the following description and claims when taken in consideration with the annexed drawings, in which—

Figure 1 is a front elevation of my invention, showing its general mode of construction and its means of operation. Fig. 2 is a vertical intersection of the side elevation, taken at line 2 2 of Fig. 1. Fig. 3 is an enlarged detail of a portion of the main frame and of the vertical bar, which operates the levers having the piercers; and Fig. 4 is a vertical intersection of the disk lever employed to operate the detaching and piercing mechanism, taken at line 3 3.

In the said drawings, 10 is a frame of rectangular form, having its opposite ends and its center joined by bars of about the same thickness as the sides, as 10<sup>a</sup>. Lying parallel to the frame 10 and loosely secured to the cross-bars 10<sup>a</sup> by brackets 11 is a vertical bar 12. At the lower end of this bar 12 is pivotally fixed the segment of an arc 14, the projecting end of which is loosely pivoted to a depending portion of the bar 12, and

which connects with and supports a curved bracket 16, whose opposite end is hinged to the depending end of the frame 10, as 16<sup>b</sup>. At the opposite end of the said frame 10 is a similar arrangement, as the arc portion 13, connecting with and supporting the hinged bracket 15 by the lug 15<sup>a</sup>, such bracket 15 supporting the rescue-signal *a*.

Some distance from the upper end of the bar 12 and securely fixed thereto at right angles is a cross-arm 17, on the opposite extremities of which are arranged small friction-rollers 18, loosely mounted on laterally-projecting pins 18<sup>a</sup>.

Arranged parallel to and on opposite sides of the frame 10, between the upper end thereof and the cross-arm 17 on the bar 12, are oscillating levers 19. These levers 19 are pivotally fixed to the opposite sides of the frame 10, their upper portions, when in their normal state, are about vertical, and they are provided with points 21 on the inner sides, meeting and at right angles to the vertical portions, and toward their depending ends they are curved in the form of arcs and are provided with grooved semicircles, into which the friction-rollers 18 are received on the cross-arm 17.

At some distance below the cross-arm 17 on the bar 12 is secured a laterally-projecting bracket 23, having an aperture in its extremity, and secured in the aperture is a line 24, and in its opposite side is secured a line 25, which lines are drawn in opposite directions by means of their passing over the peculiarly-arranged sheaves 26 and 27, the sheave 26 receiving the line 24 and the upper sheave 27 the line 25, and the line 24 passing over the lower sheave 27 to the disk lever 29, in which the ends are secured by passing through the perforations 28, their ends being knotted within the openings 29<sup>a</sup>. (See Fig. 4.) This disk lever 29 is secured to the case 29<sup>b</sup> by the bolt 29<sup>c</sup> passing through the center thereof. The disk lever should be secured on the bridge or at some spot that may be come at directly an alarm is given, and the detacher and piercer must be rigidly secured to some portion of the ship that when the buoy is released it will fall directly into the water.

32 indicates a fixed bracket to assist in securing the rescue-signal in its proper place,



and 31 are rigidly-fixed brackets employed to secure the life-buoy.

To keep the rescue-signal and the life-boat in close relation after they fall into the water, they are joined by a flexible connection *e*, it being obvious that when so connected the life-buoy can be the more readily located by the person overboard.

In operating my invention when an alarm is given and it is necessary to unship the life-buoy and the rescue-signal light the lever 30 is turned to the left in the direction of the arrow. This will slack the line 24 and raise the vertical bar 12 by the line 25, and by reason of the small friction-rollers 18 on the opposite ends of the cross-arm 17 traveling vertically in the slots 22 in the depending ends of the levers 19 their opposite ends will be pressed toward each other and their piercers 21 will be thrust into each end of the rescue-signal *a*, and as the said rollers pass to the upper ends of the slots the levers are thrown back to their normal position. It will also be seen that during the latter half-movement of the vertical bar the curved brackets 15 and 16, supporting the rescue-signal and the life-buoy at the upper and the lower ends of the detachers, will be allowed to fall and the signal and the buoy will fall simultaneously into the water.

The effect of my invention is that while using the ordinary buoys and regulation service-signals both buoy and signal can be dropped in the sea and the signal lighted within a few seconds of the first alarm being given. The whole arrangement is extremely simple, compact, and secure and cannot get out of order. It can be fitted to any part of the ship and has the further advantage of being comparatively inexpensive.

Having described my invention, what I claim is—

1. In an automatic life-buoy and rescue-signal detacher and piercer, the combination of a frame of rectangular form, a vertical slidable bar secured thereto having a cross-arm carrying small friction-rollers on each end, of levers pivotally secured on each side of the said frame, their upper portions being deflected from the parallel line of depending portions, and provided with points which face each other, and their depending ends having grooves of a semicircular form, which receive the said friction-rollers of the cross-arm, substantially as specified.

2. In an automatic life-buoy and rescue-signal detacher and piercer, the combination of a vertical slidable bar 12, secured within staples 11 on a suitable frame, the slotted piercing-levers 19, a cross-arm 17, carrying laterally-projecting friction-rollers 18 engaging in curved slots 22, in the depending ends of levers 19, and means for raising and low-

ering the said slidable bar a fixed distance, whereby the upper arms of the levers 19 will be drawn toward each other and thrown back to their normal position by the upward or downward movement of the said bar, substantially as specified.

3. In an automatic life-buoy and rescue-signal detacher and piercer, the combination of a slidable bar secured upon a suitable frame, of hinged brackets connected to the cross-bars of each end of the said frame, and having connection with each end of the slidable bar by curved brackets 13 and 14, and means for raising and lowering the said slidable bar whereby the hinged brackets intended to support a rescue-signal and a life-buoy will be released simultaneously and signal-piercing devices operated by the movement of the aforesaid slidable bar, substantially as specified.

4. In an automatic life-buoy and rescue-signal detacher and piercer, the combination of a slidable bar secured to a frame, the pivoted slotted piercing-levers, friction-rollers projecting laterally from a cross-arm rigidly secured to the said bar, the said rollers engaging in slots in the depending ends of said levers, so arranged that when the bar is drawn up the piercers will engage the rescue-signal and pierce both its ends, and means for releasing the rescue-signal and the life-buoy simultaneously, substantially as and for the purposes hereinbefore set forth.

5. In an automatic life-buoy and rescue-signal detacher and piercer, the combination with a supporting-frame, a rescue-signal and buoy detachably held thereon, piercer devices mounted on such frame, and connected with the piercer, means for operating such releasing device, arranged substantially as shown, whereby such device will first operate to move the piercers to pierce the signal and then simultaneously release the said signal and the buoy as set forth.

6. In an automatic life-buoy and rescue-signal, a supporting-frame, a buoy held on the lower end thereof, a rescue-signal held on the upper end, supports hinged to the main frame to normally hold the buoy and signal in place, a trip or slide device connected to such hinged supports, piercers pivotally held on the main frame, an oscillating connection joining such piercers and the slide device, and means for operating such slide device, all being arranged substantially as shown and for the purposes described.

In testimony whereof I have hereunto affixed my signature in the presence of two witnesses.

RUPERT ARCHIBALD.

Witnesses:

W. G. TRETHEWEY,  
L. D. TAYLOR.