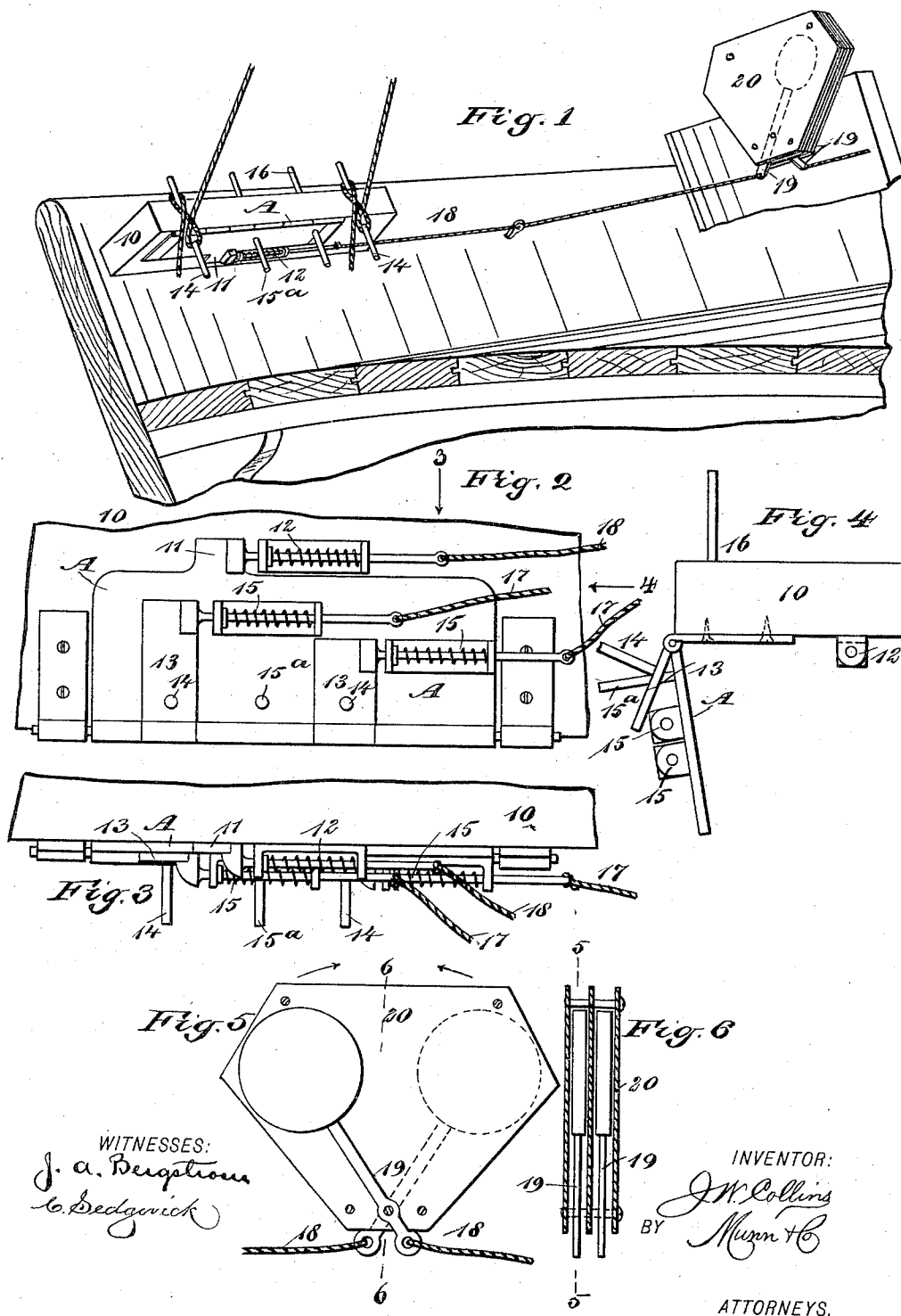


(No Model.)

J. W. COLLINS.
BELAYING PIN.

No. 474,722.

Patented May 10, 1892.



UNITED STATES PATENT OFFICE.

JOHN W. COLLINS, OF LUDINGTON, MICHIGAN.

BELAYING-PIN.

SPECIFICATION forming part of Letters Patent No. 474,722, dated May 10, 1892.

Application filed February 16, 1892. Serial No. 421,671. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. COLLINS, of Ludington, in the county of Mason and State of Michigan, have invented a new and useful Improvement in Belaying-Pins, of which the following is a full, clear, and exact description.

My invention relates to an improvement in belaying-pins, and has for its object to construct the pins that the halyards, sheets, and other ropes held thereby may be shifted therefrom in a convenient and expeditious manner, and a further object of the invention is to construct the belaying-pins in such a manner that they may be used in connection with pendulum-levers, and the connection between the said levers and the pins is so made that when a vessel lists to an extent that places it in a dangerous position the belaying-pins will be acted upon on the weather side of the vessel in such a manner as to cause the sheets and halyards belayed thereby to automatically and quickly release themselves from the pins, and thus permit the hull of the vessel to right itself, the latter form of the device being especially useful when the vessels are under full sail and are suddenly struck by a squall.

The invention consists in the novel construction of the belaying-pin and in the combination, with the pin, of a pendulum-lever, as will be hereinafter more fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of a portion of a vessel's hull, illustrating the application of the invention thereto. Fig. 2 is a bottom plan view of the improved belaying-pin. Fig. 3 is a view, looking in direction of the arrow 3 in Fig. 2. Fig. 4 is an end view of the pin and rail with which it is connected, the pin being in position to discharge ropes, the view being taken in the direction of the arrow 4 in Fig. 2. Fig. 5 is a vertical longitudinal section through the case or housing in which the pendulum-levers are pivoted, said section being taken, practically, on the line 5 5 of Fig. 6; and Fig. 6 is a transverse section through the

case or housing, taken, practically, on the line 6 6 of Fig. 5.

In carrying out the invention a rack A, normally in a horizontal position, is hinged at its inner edge to a block or rail 10 or other support, the said block being adapted for attachment to a rail of the vessel or to the mast or any other point at which belaying-pins are usually located. The rack is formed at its outer edge with a lip 11, and is held vertically in engagement with the block 10 by a spring-controlled bolt 12 of any suitable or approved construction, which bolt normally engages with the lip 11 of the plate, as illustrated, or with the body of the rack itself, where it is practicable to do so.

The rack A has hinged thereon any desired number of plates 13, and each of these plates carries a pin 14, upon which ropes are to be wound or belayed. Each plate 13 is hinged at its inner end to the rack A, so that it is capable of dropping downward, and each plate 13 is held normally in a horizontal position in engagement with the rack by a spring-controlled bolt 15 of any desired construction. Pins 15^a may also be attached to the rack A, and pins 16 are secured to the top of the supporting-block 10, immediately over the pins upon the plate or plates, when the latter are in their locked position. It will be understood that the plates may be omitted, as shown in Fig. 1, if all the ropes connected with the rack are to be released at once. Each bolt controlling a plate 15 has connected therewith a rope or chain 17, and these are led to any desired portion of the vessel—as, for instance, to the cabin or to the wheels—so that they may be readily grasped when occasion may demand, and when drawn upon they disconnect the bolts from the plates, permitting the latter to fall and the rope wound thereon to slide off, and also from the fixed pin on the block.

The bolt 12, used in connection with the rack A, is connected by a rope or chain 18 with the lower end of a pendulum-lever 19, which pendulum-lever is pivoted at or near its lower end, as shown in Fig. 5, in a casing or housing 20, the weight being at the upper end. Any desired number of pendulum-levers may be located in the casing or housing, each independent of the other. Ordinarily,

however, two such levers are sufficient, one being connected with the belaying-pins upon the starboard and the other with the pins upon the port side of the vessel, and when-
 5 ever it is necessary the ropes or chains 18 may be led over friction or guide pulleys. The housing carrying the pendulum-levers is preferably located over the keel, but may be placed at any desired point in the length of
 10 the hull. While the plates A at port and starboard, for instance, are in their locked position, the weighted end of the starboard-lever leans to port, and vice versa.

In operation if the vessel is lying in com-
 15 paratively calm water with the sails set and a squall should arise and strike the sails before they could be furled the pressure will cause the vessel to list, frequently to a dangerous extent, and even capsize it. When be-
 20 laying-pins are employed, however, constructed as above described, as the squall strikes the vessel and it lists to one side both pendulum-levers will swing at their upper weighted ends in direction of the side at which
 25 the list occurs, and therefore the lever controlling the rack at the windward side will exert such influence upon the bolts holding the rack A, carrying the belaying-pins upon which the
 30 sheets and halyards at windward are secured, as to disconnect the bolts from the rack and permit the latter to drop downward upon its hinge, as shown in Fig. 4, which action will permit each rope coiled upon the pins carried
 35 by the rack to automatically slip therefrom, and thus permit the sails to fly before the wind, and consequently relieve the hull from pressure. If the lines 17, connected with the bolts controlling the plates, are led aft, the
 40 steersman or a person near the cabin may from that point cast off any rope from any particular belaying-pin by drawing upon the line attached to the bolt controlling that particular pin.

Having thus described my invention, I
 45 claim as new and desire to secure by Letters Patent—

1. The combination, with a rail or other support and a plate hinged upon the rail, the said plate being provided with pins, of a bolt

adapted for engagement with the plate and to
 50 lock it in engagement with the rail, a pendulum-lever and a connection between the pendulum-lever and the bolt, whereby when the lever is thrown in one direction the bolt will remain in locking engagement with the plate
 55 and when the lever is thrown in an opposite direction the bolt is withdrawn from engagement with the plate, substantially as and for the purpose set forth.

2. The combination, with the rail or like support, a plate hinged to the rail or support, pins attached to the plate, and a bolt held normally in engagement with the plate and binding said plate to the rail or support, of a pendulum-lever fulcrumed below its center and
 65 having its weight at its upper end and a connection between the lower end of the pendulum-lever and the bolt, as and for the purpose set forth.

3. The combination, with rails adapted to be
 70 attached to a vessel, said rails carrying pins, plates hinged to the rails and also carrying pins, and spring-controlled bolts normally engaging with the plates and maintaining the latter at their margins in engagement with
 75 the rails or supports, of levers fulcrumed near their lower ends, said levers being adapted for location over the keel of the vessel, the said levers extending in direction of opposite side of the vessel and provided at their upper ends
 80 with weights, their lower ends being connected with the bolts controlling the pin-carrying plates, as and for the purpose set forth.

4. The combination, with a rack having a hinge connection with a support, pins attached
 85 to the rack, and plates having a hinge connection with the rack and also carrying pins, of bolts engaging with the rack and the plates, a pendulum-lever, a connection between the bolt controlling the rack and the pendulum-
 90 lever, and means, substantially as described, for operating the bolts controlling the plates independently of the bolt controlling the rack, as and for the purpose described.

JOHN W. COLLINS.

Witnesses:

W. E. SHAW,
 J. H. HEPBURN.