

(No Model.)

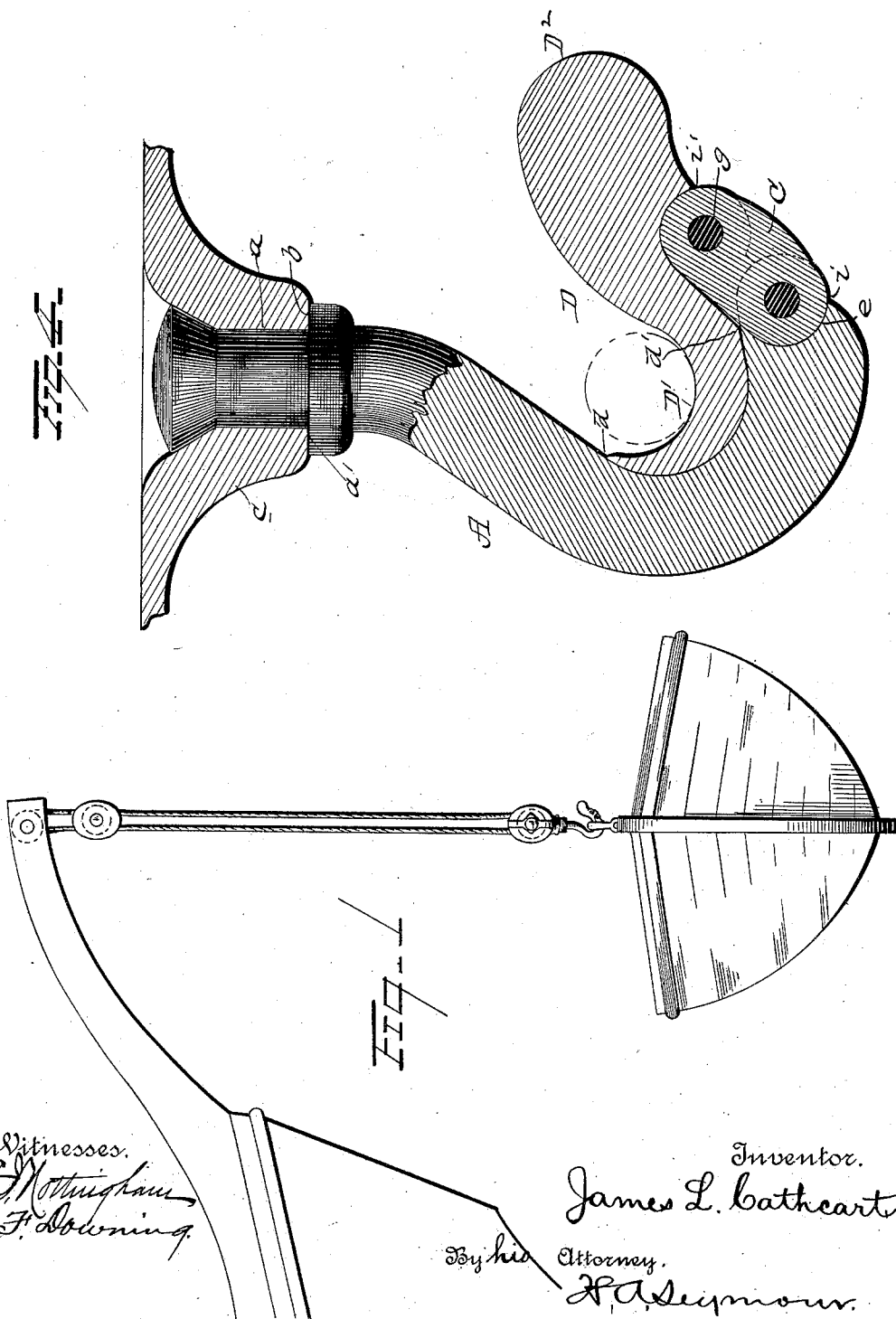
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J. L. CATHCART.

RELEASING DEVICE FOR BOATS, &c.

No. 380,786.

Patented Apr. 10, 1888.



Witnesses.
E. Nottingham
L. F. Downing

Inventor.
James L. Cathcart
By his Attorney.
H. A. Seymour

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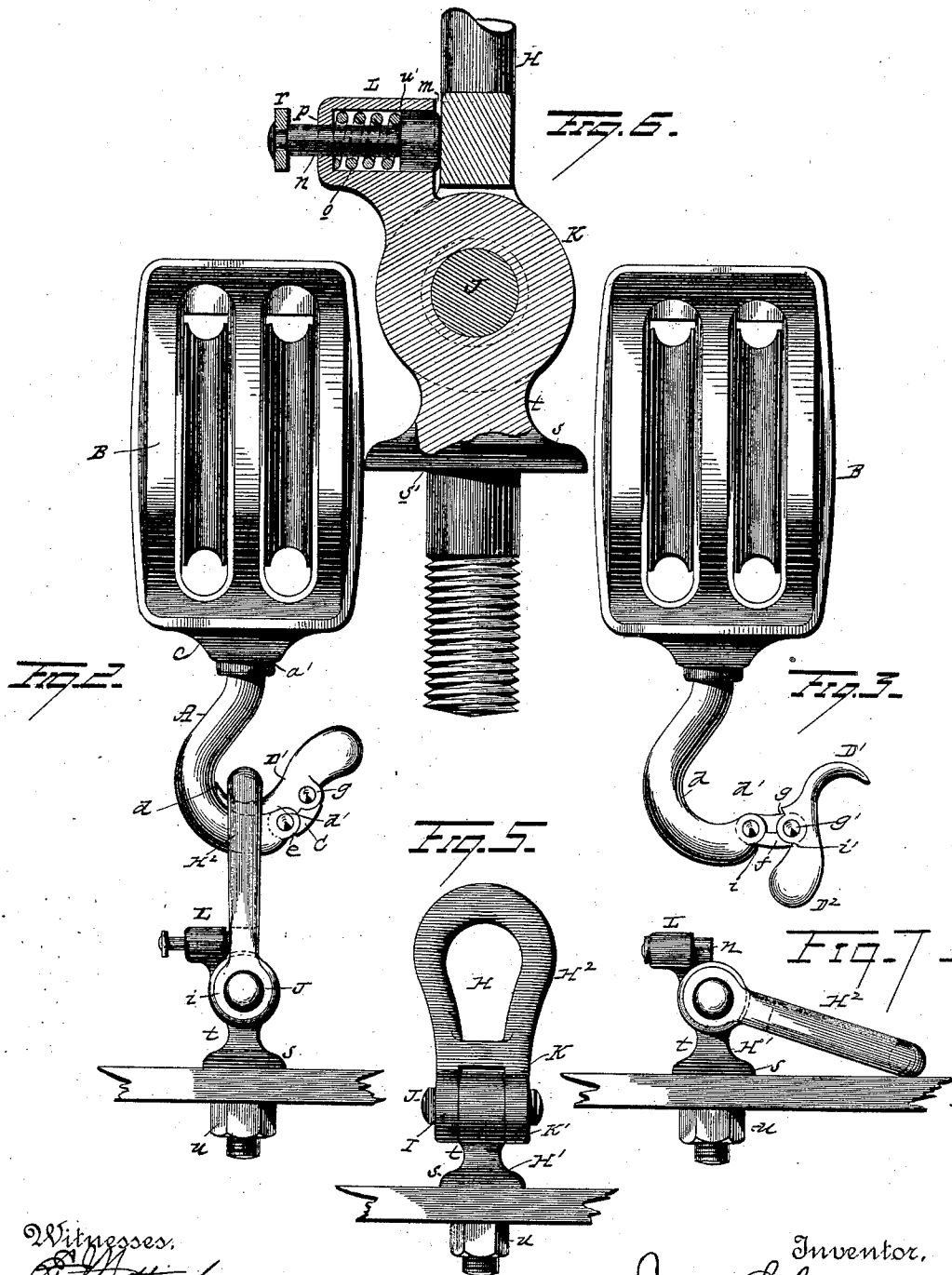
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No. 380,786.

Patented Apr. 10, 1888.



Witnesses,
G. H. Thompson.
G. F. Downing.

Inventor,
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UNITED STATES PATENT OFFICE.

JAMES L. CATHCART, OF ALEXANDRIA, VIRGINIA.

RELEASING DEVICE FOR BOATS, &c.

SPECIFICATION forming part of Letters Patent No. 380,786, dated April 10, 1888.

Application filed May 26, 1887. Serial No. 239,459. (No model.)

To all whom it may concern:

Be it known that I, JAMES L. CATHCART, of Alexandria, in the county of Alexandria and State of Virginia, have invented certain new and useful Improvements in Releasing Devices for Boats and other Purposes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in releasing devices for boats and other purposes.

The object of my invention is to produce a simple, safe, and perfectly reliable device, that will by its manner of construction afford a means for the instantaneous automatic release of a life-boat or other boat from the suspension and lowering tackle, by which it may be launched with safety from the side or stern of a sea-going or other vessel in the roughest weather, as by its form and combination of parts fouling of the releasing-hooks is rendered impossible.

A further object is to provide a releasing device that, in connection with hoisting-tackle used for the elevation or lowering of heavy bodies, will automatically release connection with the blocks or other hoisting appliances instantly, when the entire weight of the article being lowered is removed from the hoisting-tackle by reason of the seating of these goods or other material upon a proper place of deposit or supporting base.

With these objects in view my invention consists in certain features of construction and combinations of parts that will be hereinafter described, and pointed out in the claims.

Referring to the drawings, making a part of this specification, Figure 1 is a view of the complete releasing device as combined with a boat-lowering tackle. Fig. 2 is an enlarged side elevation of the hook and shackle that constitute the releasing device, the two parts being in connection and in position assumed when a weight is suspended to them. Fig. 3 shows the hook and shackle detached and in position assumed when an attached weight is released. Fig. 4 is a side elevation, in section, through the center of the hook, showing its manner of construction. Fig. 5 is a front ele-

vation of the shackle. Fig. 6 is a side elevation, in section, through the center of the shackle or connecting-loop. Fig. 7 is an edge view of the shackle.

A represents a strong hook made of any proper metal. The upper portion of this hook is provided with a reduced end, *a*, that in its formation leaves a shoulder, *a'*, which is given a more extended bearing-surface by the enlargement of the body of the hook immediately below it, affording a seat, *b*, for the clip-band *c* of the sheave-block B, that is loosely secured upon the end *a* of the hook to permit a swivel motion of the body of the block B upon it when it is necessary. The portion of the hook A that is bent to retain the shackle is flattened on its inner surface from the point *d* to the extremity *d'* of the hook proper.

The body A terminates at *d'* in a rounded end, which is slotted to form two parallel jaws, *e e*, the center slot, *e'*, being of such a width as to afford space for the insertion of one end of the link-bar C, the opposite end of this link being similarly formed to connect with the swinging hook end D.

The link-bar C is constructed to produce filling-blocks *f* on each side of the hook which conform to the rounded surface of the end joint *d'* of the hook proper, A, and a duplicate joint, *g*, formed in the solid material of the hook end D, the link being pivotally secured to each portion A B to permit a free action of the double-rule joint thus afforded.

Hook end D is extended from the pivot *g'* of rule-joint *g* as a center inwardly to produce a portion, *D'*, which is made to conform in shape to the flat bent surface of the hook body A, that lies between the points *d d'* of the same. The upper or exposed surface of the hook end is rounded to afford a symmetrical continuation of the hook body when the parts are in contact.

The portion *D''* of the hook end D, which projects above the rule-joint *g*, is considerably heavier than the inner portion, *D'*, of this piece, and it is curved outwardly to form a rounded end or nose for the hook proper, of which it is an extension. The connection of parts when the hook is in use to suspend a weight exhibits a proper curvature of the

compound hook that has no objectionable projections at the joints of the connecting link-bar C.

The open adjustment of the jointed hook end D, shown in Fig. 3, causes the shoulders of the filling-blocks *f*, that are integral portions of the link-bar C, to abut against the shoulders *i* *i'*, made on the outer surface of the hook A and its attached hook end D, such a contact limiting the pivotal movement of the hook end to hold it nearly perpendicular when it is released, as shown, and it will be noticed that the length of the link-bar C in this position of the hook end D determines the outward projection of the hook end to release the loop of the clevis from hooked contact when it is in position to permit this release, as will be hereinafter explained.

The shackle H consists of an eyebolt, H', and a loop, H², that have a hinged or knuckle joint connection at I, the head K of the bolt H being enlarged to enter the slotted and rounded ears K' of the loop to form a neat and strong hinge-joint, these parts being secured together to permit a folding movement of the loop H² by the insertion of the pivot-bolt J through a center hole made in the ears K'. The head K is constructed with an integral upwardly-projecting boss, L, so located with reference to the loop H² that its vertical face *m* will nearly have contact with the adjacent surface of the loop when the loop is in the vertical position assumed when the shackle is in use to suspend a weight connected to the bolt H'.

The boss L is perforated centrally at right angles to the pivot bolt J and has a shouldered slide-bolt, *n*, made to loosely fit the hole. The bolt *n* is projected a limited distance from the face *m* of boss L by a spiral spring, *o*, which is placed on the reduced body of the slide-bolt *n* and engages the shoulder *u'* of the bolt as well as the rear surface of the box formed in the boss L by its perforation, the diameter of the perforation made in the boss being so reduced at a point, *p*, as to afford a seat for the spring *o*, the reduced body of the slide-bolt *n* having a sliding fit in this reduced hole, the bolt being retained in position to slide in the spring-box by a washer, *r*, which is riveted on the outer projecting end of the bolt to permit the bolt to be normally projected beyond the vertical face *m* of the boss L and engage the side surface of the loop H² when this loop is held upright by the suspension of a boat or other weight to which the eyebolt H' may be connected.

If the bolt and shackle, or a pair of them, are to be employed as a boat-releasing device, the eyebolt H' is enlarged at a point just below the head to produce a flange, *s*, the upper edge of which is preferably rounded from the cylindrical neck *t* of the bolt downwardly to render the shape neat in appearance without a sacrifice of necessary strength.

The flange *s* terminates in a square shoulder, *s'*, and from this point the bolt is reduced and

threaded to receive a nut, *u*, by means of which the eyebolt is secured to the forward and rear timbers of a boat, to which the device is to be attached.

Reference to Fig. 1 will show the relative position of the hooks when in use to suspend a small boat or life-boat from the ship's davits at the stern of a vessel, and it will be noticed that the hook ends D of the hooks A are pointed toward the outside of the suspended life-boat, the loops H² of each shackle being held in a vertical position by the weight of the boat, the eyebolts being rigidly secured to the prow and stern timbers of the suspended boat in a position to hold it in poise laterally.

When a suspended boat is lowered by the "cast-off" of the belayed ends of the ropes, the instant the boat strikes the surface of the water, and thus relieves the shackle-connections of its weight, the spring-actuated slide-bolts *n* will exert an outward pressure against the loops of the shackle and these loops will be projected against the pivoted and link-connected hook ends D of the hooks A. This movement and abutment of the loops will cause a rocking movement, as well as a simultaneous lateral projection, of the hook ends D. These hook ends being inverted by gravity carry outwardly the loops of the shackle by a contact of their inner curved ends with the surface of these loops, the result being an instantaneous disengagement of the hooks from the shackle-loops and a consequent release of the boat from the suspension-tackle.

When the releasing-hooks are to be used in connection with boat-lowering tackle which operates from side to side of a vessel, the blocks are arranged to lead the ropes inbound properly and the hooks of the lower blocks are adapted to engage the shackles from the bow toward the stern, so that when the lowered boat rests upon the water the hinged portions of the hooks will fall from the forward aft and the shackle will be projected by their spring-bolts in a line with the keel of the boat.

The uses to which this releasing device may be applied are various, as the releasing action is desirable wherever a load is elevated and deposited, or lowered and deposited, so that it is available for building purposes, unloading vessels, warehouse-freight handling, haystacking, or elevating into barns, and many other similar uses. Hence I do not wish to limit myself to the particular purpose of boat-releasing, but claim the device for any purpose to which it may by slight modifications of form be adapted.

Slight changes might be resorted to in the form and means of connection of the parts of this device without departure from the spirit of my invention. I do not therefore wish to limit myself to the precise form shown; but,

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A hook having its outer end pivotally connected to the main body of the hook by a link-bar.

2. The combination, with the bent hook-body, of a shouldered link-bar adapted to support in swinging adjustment the hinged outer end of the hook, substantially as set forth.
- 5 3. The combination, with a block provided with sheaves, of a hook-body, a link-bar, and a hook end, the body, link-bar, and hook end being hinged together, substantially as set forth.
- 10 4. The combination, with shackle consisting, essentially, of a loop and a stop for limiting the movement of the loop in one direction, of a hook consisting, essentially, of a body and an end, the latter being pivotally connected
- 15 to the body of the hook, substantially as set forth.

5. The combination, with a sheave-block and a hook swiveled thereto, said hook having a hinged hook end and a link connecting this end to the body of the hook, of a shackle consisting, essentially, of a hinged loop and a spring-actuated slide-bolt adapted to impinge against the hinged loop of the shackle when the latter is supporting a load, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JAMES L. CATHCART.

Witnesses:

C. S. DRURY,
J. E. JONES.