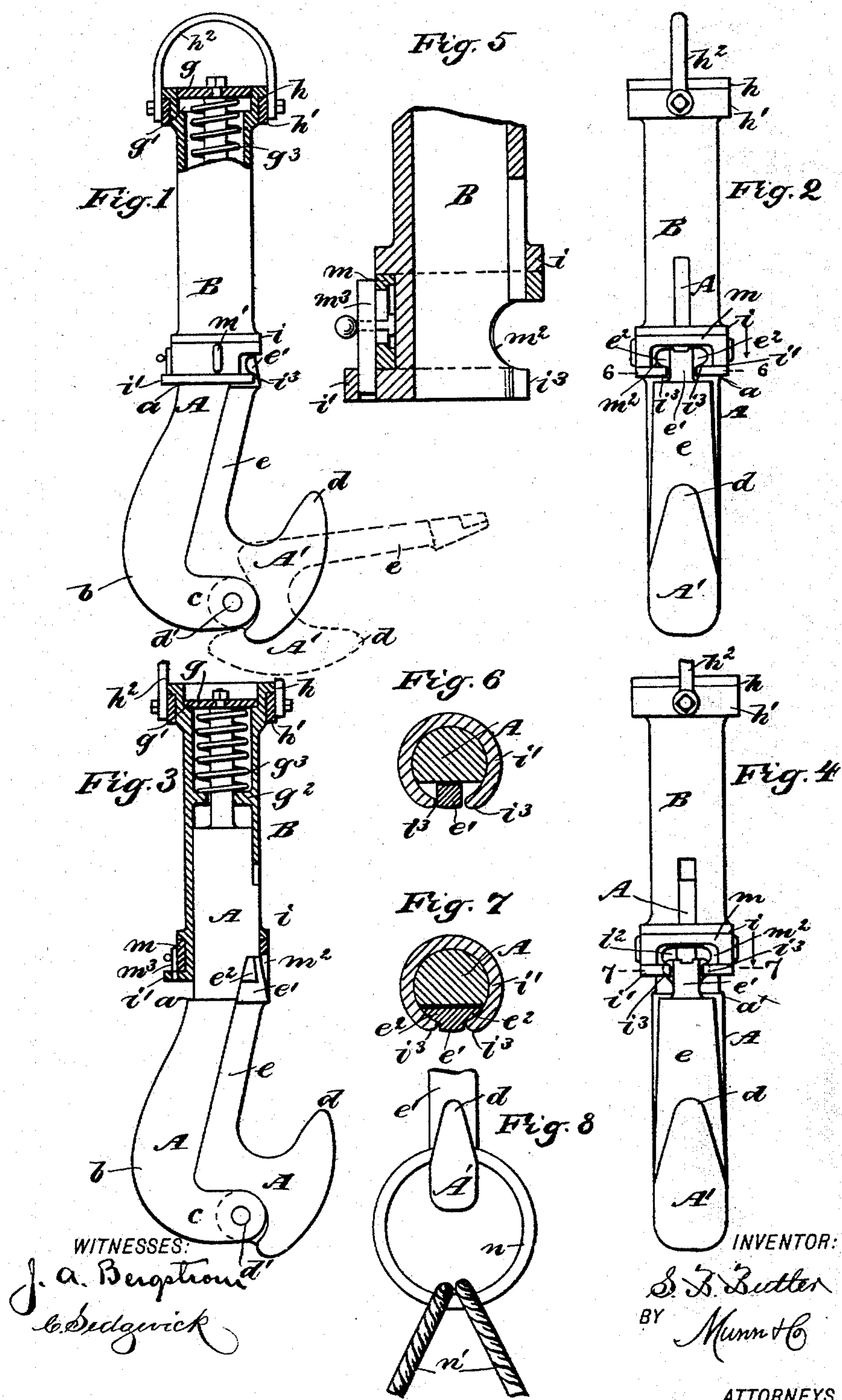


(No Model.)

S. B. BUTLER.
DAVIT HOOK.

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DAVIT-HOOK.

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To all whom it may concern:

Be it known that I, SAMUEL B. BUTLER, of the city, county, and State of New York, have invented a new and useful Davit-Hook for

Lowering and Hoisting Boats, of which the following is a full, clear, and exact description.

When the ordinary blocks and falls are employed to lower small boats away from davits on sea-going vessels, great danger is incurred if these devices that are attached at the bow and stern of the boat are not manipulated together, so as to carry the boat down in a horizontal position and allow it to strike the water, and thus allow both fall-ropes to be cast off at the same instant. Experience will enable the sailors to work the falls together measurably well; but in a rough sea the casting-off of the hooks on the sheave-blocks from the bow and stern of the lowered boat is a work of difficult execution and may result in capsizing the boat or pitching the man at the bow or stern overboard.

The object of my invention is to produce a simple and reliable davit-hook that will engage the block and also with the suspending-ring of the boat fall-ropes, so as to automatically release the ring as soon as the weight of the suspended boat and its load is upborne by the water of floatage, a single block and tackle being used as well as a single davit-hook therefor.

A further object is to provide the improved davit-hook with means to lock its releasing-section when this is necessary, said locking device being adapted for speedy adjustment manually to secure or release the nose portion of the hook and prevent or permit its vibration and release from the fall-rope ring.

To these ends my invention consists in the construction and combination of parts, as is hereinafter described and claimed.

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

Figure 1 is a side view of the device broken away above, the tripping-nose of the hook being shown in open adjustment by dotted lines. Fig. 2 is a front view of the parts shown in Fig. 1, similarly adjusted as in full lines in said figure. Fig. 3 is a side view, partly in section, showing the hook-body depressed within

the suspending-sleeve, so as to release the tripping-hook nose. Fig. 4 is a front view of the davit-hook with the parts adjusted as represented in Fig. 3. Fig. 5 is a vertical section of the lower portion of the suspending-case of the davit-hook, enlarged and detached from the hook-body, showing the formation of a locking-bolt on a rotatable keeper-ring which is a part of the improvement. Fig. 6 is a transverse section of parts adjusted as shown in Fig. 2, taken on the line 6 6 in said figure. Fig. 7 is a cross-section on the line 7 7 in Fig. 4 with the parts adjusted to release the tripping-hook nose, as shown in said figure; and Fig. 8 is a front view of the tripping-hook nose broken away above and having hooked engagement with a ring on the fall-ropes.

There is a cylindrical hook-body A provided, (see Fig. 3,) which is enlarged at *a*, producing a square shoulder, below which the body is rearwardly bent, as at *b*, and below is forwardly curved and extended a proper length to produce a limb *c* for the pivoted support of a tripping-hook body A'. The nose-piece mentioned is formed to afford a heavy body which is upwardly extended sufficiently to provide a nose *d*—that is, tapered toward the terminal above to render it shapely and effective in operation—and below rearward of the body A' a knuckle-joint *d'* is formed on the tripping-hook and end of the limb *c*, thereby loosely joining the latter with the hook that by gravity will normally assume the position shown in Fig. 1, if free to do so.

An upwardly-extending limb *e* is formed on the hook-body A' at a proper distance from the nose *d*, which limb and nose together produce a hook, the front side of the limb being rounded and its rear side flattened to fit closely upon the flat front side of the portion of the body A extending between the shoulder *a* and limb *c*, thereby completing the hook-body when the nose-piece and part A are in contact, as shown in Fig. 3. At a proper point above the shoulder *a* the piece A is diametrically reduced and forms a bolt axially extended from the lower portion.

A cylindrical sleeve B is a portion of the device, having an internal diameter equal to that of the body A above the shoulder *a*. Said sleeve loosely fits upon the body and is adapted to seat upon the shoulder *a* thereon.

At the upper end the sleeve B is diametrically enlarged to receive a washer-plate g , that is circular, and loosely fits the bore of the sleeve above the shoulder g' , produced by the enlargement of the latter. There is a cross-wall g^2 , formed in the sleeve B at a suitable point below the shoulder g' , and centrally perforated to allow the bolt portion of the hook-body A to slide loosely through it, the length of said bolt portion being sufficient to permit its upper end, which is threaded and reduced, to pass through a center hole in the washer-plate g and be thereto secured by a nut placed on its projecting end. Between the washer-plate g and cross-wall g^2 a spiral spring g^3 is located, encircling the bolt extension of the body A, the expansion of which spring will normally retain the hook-body adjusted, so that its shoulder a will impinge upon the lower end of the sleeve B, while the washer-plate g is lifted off of the shoulder g' and aligns its top surface with the upper edge of the sleeve.

A radial flange h is extended from the upper edge of the sleeve B outwardly, and a band h' is placed upon the enlarged upper part of the sleeve, loosely engaging it and the flange h , the latter preventing the band from slipping off of the sleeve. A loop h^2 is secured at its ends upon the band h' oppositely, so as to adapt the loop-piece to swivel and rock.

The lower end portion of the sleeve B is apertured at the front and has two collars i and i' formed on it, the wider portion of said aperture being produced in a part of the sleeve that lies between the collars, as shown at i^2 in Fig. 4. The lower collar i' is cut through, as is also the portion of the sleeve it projects from, thus slotting the material from the aperture i^2 downwardly and through the lower edge of the sleeve, the width of the slotted extension of the laterally-elongated aperture i^2 being less than said aperture, thereby leaving a locking-wing on each side of the slot, as indicated at i^3 .

The cylindrical body A is forwardly flattened above the shoulder a a short distance, which reduced portion aligns on the face with the flat part below the shoulder named, and the limb e is lengthened, so as to bear upon the entire flattened surface of the body A. Upon the upper end of the limb e the material is fashioned to produce a locking-head e' , the main portion of which is of such a thickness as will permit its sliding between the wings i^3 of the sleeve B, and oppositely on the edges of the head e' an ear e^2 of like shape is formed on each edge, said ears being located near the top of the head, allowing spaces below them where the head is of normal thickness. The dimensions of the ears e^2 and their general contour is such that they will pass freely through the aperture i^2 when the head of the limb e and the aperture of the sleeve are oppositely located, which will occur if the limb is in contact with the hook-body A, and the spring g^3 is allowed to raise the hook-body

till the collar i' and shoulder a are in contact, which will be effected if there is no weight imposed upon the tripping-hook nose A', as shown in Fig 1. Between the collars i and i' a loose ring m is located, having spaced ribs m' formed on it to afford means for its convenient rotation manually, there being a notch m^2 cut from its lower edge upwardly of such a width and height as will give it equal or greater dimensions than the aperture i^2 in the sleeve B, so as to allow the head of the limb e to pass through the notch when the ring is adjusted to locate the notch over the aperture correctly. One of the ribs m' on the ring m , which is directly rearward of the notch m^2 , is vertically slotted to receive a projection on the slide-bolt m^3 , which is thus held upon the rib free to reciprocate vertically a proper distance, so that its lower end portion may be caused to enter a hole in the collar i' and retain the notch registered with the elongated aperture i^2 or be disengaged from the collar, so as to permit the ring m to be rotated and carry the notch away from the aperture, which will close the latter and lock the limb e in contact with the body A.

In operation the davit-hook is suspended from the boat-hoisting device by its loop h^2 and the fall-ring n , placed in the bight of the hook A', as represented in Fig. 8, the fall-ropes n' , (shown broken,) which are extended to the bow and stern of the boat and thereto secured, serving to removably secure the boat (not shown) to the davit-hook. If the boat is inboard on the vessel, it may be loaded and swung outwardly into the usual position for lowering, and as the weight of the boat, empty or loaded, is sufficient to fully compress the spring g^3 and impose the washer-plate g upon the shoulder g' this will locate the ears e^2 behind the wings i^3 and prevent the vibration of the limb e . After the boat is lowered near to the water of floatage the ring m , if locked over the limb e , should be released and rotated to place its notch over the aperture in the sleeve B, so that the buoyancy of the water, when it has contact with the boat, will slacken the fall-ropes and permit the spring g^3 to expand and slide the hook-body into the position shown in Figs. 1 and 2. Then the weight of the ring n and ropes n' will vibrate the nose of the pivoted limb e outwardly and downwardly, as shown by dotted lines in Fig. 1, and detach the ring and ropes from the davit-hook.

It will be seen that the release of the boat can be exactly timed to insure safety to the occupants, and is at all times under control of the party in charge of the davit-hook, so that the danger of capsizing the boat or injuring its occupants, incidental to ordinary methods and devices for hoisting and lowering boats, is completely obviated.

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

1. In a davit-hook, the combination, with a

5 cylindrical hook-body, an enveloping sleeve wherein the body slides, a washer-plate above within the sleeve, secured to the body and adapted to rest on a shoulder within the sleeve, and a spiral spring on the hook-body, engaging a projection on the sleeve and also with the washer-plate, of a tripping-nose piece pivoted below on a lateral limb of the hook-body and a locking device for the hook-nose
10 piece, which prevents it from vibration when it is loaded, substantially as described.

2. In a davit-hook, the combination, with a hook-body that is cylindrical and provided with a bolt extension above and a curved portion below that is flattened forwardly and projected on the forward side to provide a limb
15 below, of a supporting-sleeve having two spaced collars below, apertured between the collars and slotted from the aperture through the lower collar, leaving wings, and a tripping-hook pivoted on the limb of the hook-body, having a weighted nose, and a limb projected upwardly from the hook, having a head
20 above furnished with ears that will interlock with the wings when the hook is loaded, substantially as described.

3. In a davit-hook, the combination, with a sleeve, a locking-ring between collars below, and a slide-bolt that will enter a hole in the
30 lower collar and retain a notch in the ring over an aperture in the sleeve, of a hook-body adapted to slide in the sleeve, a spiral spring thereon which will raise the hook-body to impinge a shoulder thereon against the sleeve
35 below, a swivel-loop above on the sleeve, and a tripping-hook piece pivoted below on the

body and provided with a limb having lateral ears above that will lock with wings on the sleeve below its aperture when the hook is loaded, substantially as described. 40

4. In a davit-hook, the combination, with a supporting-sleeve, a swivel-loop thereon above, a hook-body within passing through a perforated cross-wall of the sleeve, a spring thereon within the sleeve, and a washer-plate
45 above on the hook-body, adapted to rest on a shoulder within the sleeve and limit the depression of the hook-body, of a tripping-hook piece secured pivotally on the bent forwardly-extended limb of the body below, weighted
50 below its nose, and adapted to be detachably locked to the sleeve above, substantially as described.

5. In a davit-hook, the combination, with a hook-body supported to slide in a sleeve and held normally elevated by a spring that engages the sleeve and a plate on the hook-body
55 above, of a weighted hook-nose piece pivoted on a projecting limb of the hook-body near its lower end, a locking device on the sleeve and upper end of the hook-nose piece that will lock the nose-piece from vibration when it is loaded, and a device encircling the sleeve at
60 its lower end, which is adapted to retain the nose-piece in locked connection with the sleeve by its rotatable adjustment, substantially as described.

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Witnesses:

WM. P. PATTON,
E. M. CLARK.