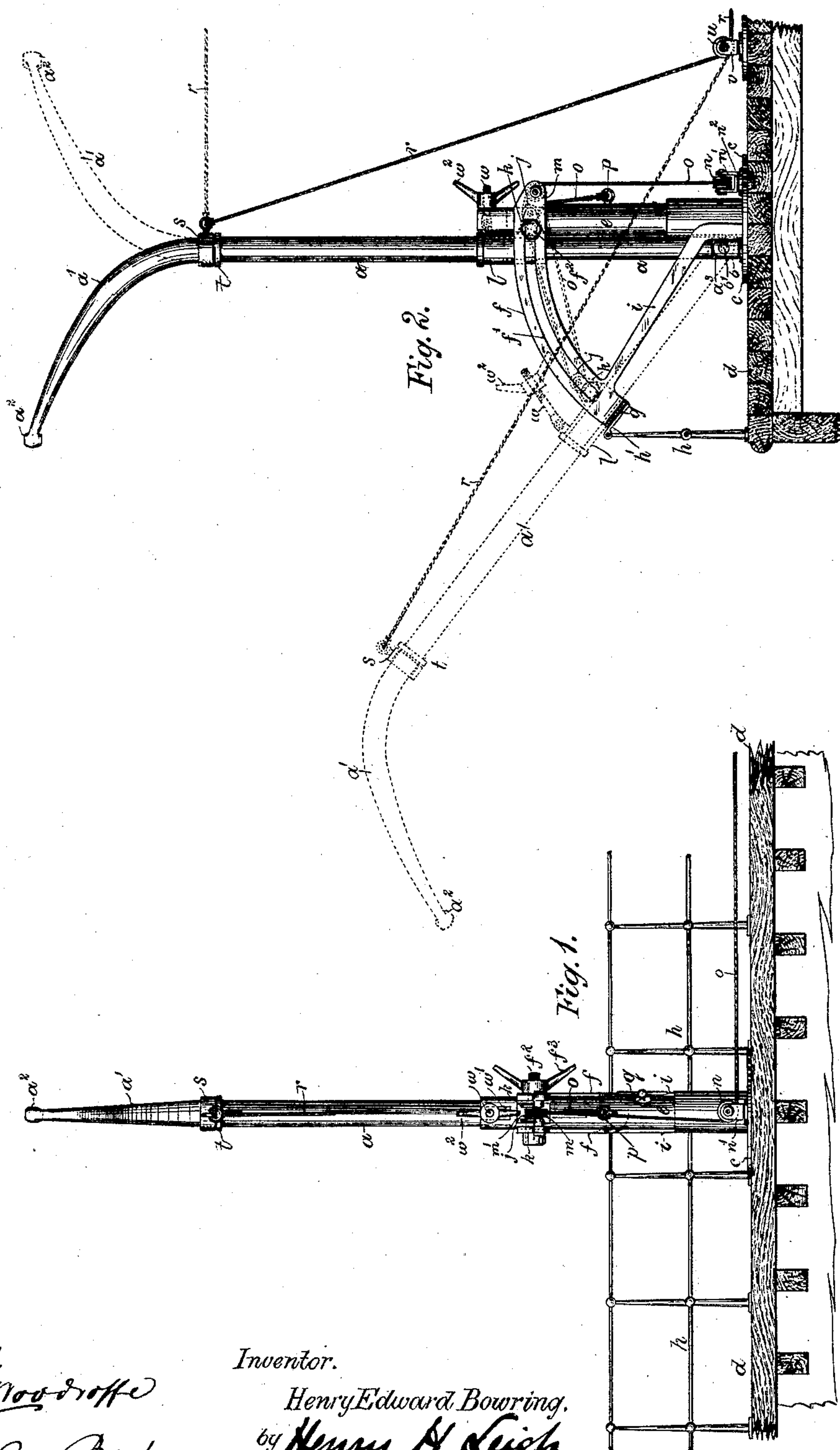


2 Sheets—Sheet 1.

No. 475,923.

Patented May 31, 1892.



Witnesses:
Chas. Woodroffe
 Robt. A. Blake

Inventor.
Henry Edward Bowring.
by *Henry A Leigh*
Attorney.

(No Model.)

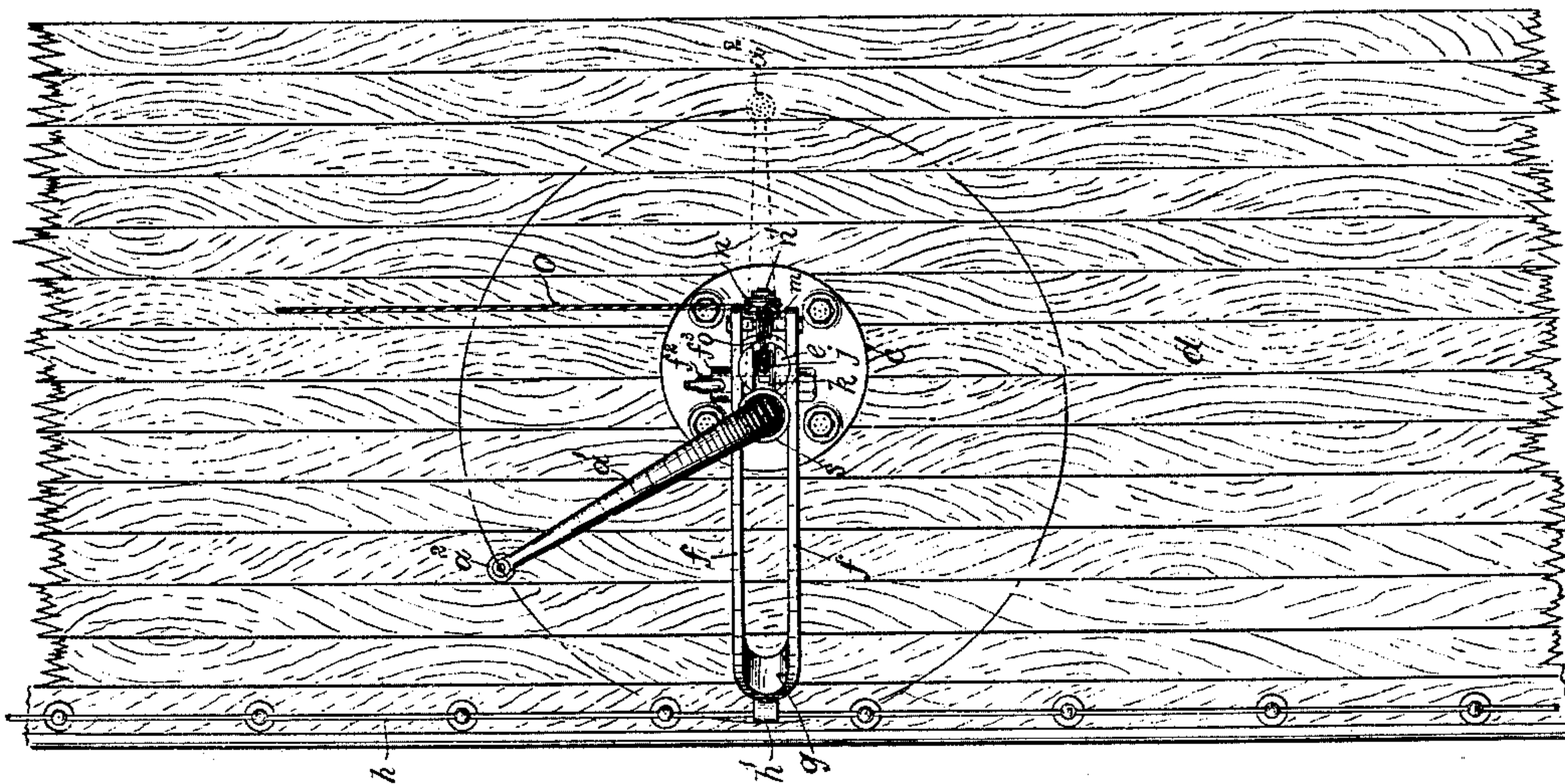
2 Sheets—Sheet 2.

H. E. BOWRING.
BOAT DAVIT.

No. 475,923.

Patented May 31, 1892.

Fig. 3.



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UNITED STATES PATENT OFFICE.

HENRY EDWARD BOWRING, OF MOLE BANK, EAST MOLESEY, ENGLAND.

BOAT-DAVIT.

SPECIFICATION forming part of Letters Patent No. 475,923, dated May 31, 1892.

Application filed July 9, 1891. Serial No. 398,945. (No model.) Patented in England April 13, 1891, No. 6,400.

To all whom it may concern:

Be it known that I, HENRY EDWARD BOWRING, gentleman, of Mole Bank, East Molesey, in the county of Surrey, England, a subject of the Queen of Great Britain, have invented Improvements in Boat-Davits, (for which I have obtained Letters Patent in Great Britain, No. 6,400, dated April 13, 1891,) of which the following is a specification.

My invention relates to improvements in boat-davits; and it consists in improved devices which permit of the davits being swung down from the vertical to the horizontal plane and back again, of their being fixed rigidly at any point in their travel in either direction, and of being secured in their vertical position, of their being turned about their respective vertical axes through a complete circle, and in duplicate sets of tackle for regulating the downward swing of the davits as well as for raising them again; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the following figures, in which—

Figure 1 is a rear elevation of a boat-davit and its appendages constructed according to the present invention, showing it in a vertical position with its eye—i. e., the point from which the fall hangs—standing out over the side rail. The figure includes the adjacent portions of the side rail and of the deck of the vessel. Fig. 2 is a side elevation corresponding as to its full lines with Fig. 1. The dotted lines show the davit as lowered along its guide as far as the length of the latter will allow it to be. Those in the top right-hand corner show the davit as turned round through a half-circle until its eye stands inward over the deck in the position in which it would be while the crew was getting aboard the boat. Fig. 3 is a plan of my invention including the adjacent portions of the side rail and deck. The davit is shown by the full lines as having been swung from the position illustrated in Fig. 1 through an angle of forty-five degrees, and by the dotted lines as standing with its nose inward and over the deck, as described with reference to the dotted lines in

the top right-hand corner of Fig. 2, omitting the locking device.

Like parts are marked throughout the figures in which they occur with the same reference-letter.

The figures illustrate only one davit with its accessories; but those of a pair are always counterparts of each other, so that the description of one is that of both.

a is the davit, of the usual circular cross-section. a' is its curved and overhanging top, and a^2 its eye. Its bottom end or foot a^3 is made with flat sides and fits in a vertical slot of corresponding cross-section in the foot-block b , in which the davit is pivoted by the axis or pin b' , which passes through the sides of the foot-block and the davit-foot a^3 in a line at right angles with the only plane in which the davit can be swung up or down upon the said axis b' . The foot-block b is in its turn pivoted in a base-plate c , upon which it can turn with the davit, but only about the vertical axis common to both davit and foot.

The davit can only be swung up or down upon its axis b' when its top a' and the vertical slot in the foot-block b are both in the same or parallel vertical planes as the davit-guide, described farther on, so that its vertical position while it is being turned about its vertical axis is always assured.

The base-plate c is made fast to the deck-surface in any convenient way, and I prefer that it should be large enough to serve as a common base to the post e and pulley-frame n' , described further on, as well as to the foot-block b , already described.

e is a strong vertical post standing immediately behind the davit and its foot-block.

$f f$ are a pair of parallel arcs. Their rear ends are made fast to the post e , one on each side of it near its top, so that one stands on one side of the davit and one on the other for the purpose of forming a guide for the davit in its up and down motions. The pair of arcs is hereinafter referred to as a "davit-guide." The front ends of the said arcs are united, as shown in Fig. 3, thereby providing a seat or stop g , adapted to receive and limit the downward swing or motion of the davit, as illustrated by the dotted lines on the left hand of Fig. 2.

h is the ordinary side rail. The davit-guide *ff* extends as far as this, to which it is made fast by being bolted to a suitable bracket *h'*, projecting toward the davit for that purpose.

i i are a pair of studs from the respective arcs *ff* down to the base-plate *c*, and, with the bracket *h'*, are provided for the purpose of imparting rigidity to the davit-guide.

The davit-guide is illustrated in the figures extending through an arc of only about forty-five degrees; but its front end may be continued down to the deck and secured thereto instead of to the side rail *h*.

Two separate and distinct sets of tackle may be, and preferably are, provided for lowering and raising a davit. One of these is fixed to the post *e* and the lower part of the davit, while the other is fixed to the top of the vertical part of the davit.

I will describe the first-mentioned tackle first. *j* is a pulley standing in the vertical plane. It has its bearings in a pair of cheeks *k*, which project rearward from a sleeve *l* loose upon the davit, which latter can turn freely within it. *m* is a second pulley in the same vertical plane as the pulley *j* and standing only a short distance behind it. It has its bearings in rearward extensions of the arcs *f*. *n* is a third pulley having its bearings in an upright frame *n'*, which is on its part pivoted on a vertical axis *n²*, about which it is free to turn. The pulley *n* is preferably directly under the pulley *m* and the axis *n²* of its frame in the base-plate *c*. *o* is the lowering and hauling line. It is made fast to the eye *p* on the rear side of the post *e*, led round the pulley *j*, down over the pulley *m* and under the pulley *n*. *q* is a cleat on the post *e*, to which the line *o* is made fast after the davit has been pulled up into the vertical position. A suitable port *m'* is formed in the post *e* to allow the line *o* to pass from the eye *p* around the pulley *j* to the pulley *m*. It is evident that the davits of a pair should be either lowered or raised exactly together, and to facilitate this the two lines may be united at a suitable point outside both pulleys *n*, which will have the effect of abolishing one hauling-line and adapting the remaining one for controlling the downward swing of both davits as the boat is being lowered and of effecting the rise of both davits simultaneously when the said remaining line is hauled in for the purpose of raising the boat on deck again.

The second-mentioned tackle is illustrated in full only in Fig. 2, it having been omitted from Figs. 1 and 3 to prevent obscuring them. *r* is the line. It is made fast to a collar *s*, which occupies a position at the top of the vertical portion of the davit. This collar is loose upon the davit, so that when the latter is turned about its vertical axis it will not take the said collar with it. It has its seat upon a second collar *t*, which is fast upon the davit. *u* is a pulley of the same construction and mounted in a frame *v* in the same

way, as described above, with reference to the pulley *n*. It occupies a position on the deck some short distance to the rear of the davit. A suitable cleat is provided in any suitable position to make the line *r* fast to after the davit has been raised.

When both sets of tackle are provided, the second-mentioned one may be used as supplementary to the one first mentioned.

For the purpose of fixing a davit rigidly at any point in its travel within the davit-guide, I employ the following device, which is quite independent as far as its specific purpose is concerned of either of the above-mentioned tackles. *f'* is an arc-shaped slot cut in each arc. These slots like the arcs are set out from the axis of the pin *b'* as a center. *f²* is a screw-bolt. The shank is of the same diameter as the width of a slot *f'* and can move freely therein. The shoulder of the shank is square to prevent its turning in the slot. The nut *f³* of the bolt is preferably winged, and both nut and bolt-head are of a substantial size, so as to bear fairly upon the outside of their respective arcs both above and below the slot. The shank of the bolt passes through an eye formed in a rearward extension of the collar *l*, so that when the nut *f³* is screwed up the davit will be held in whatever position it occupies at the time.

For the purpose of locking the davit in its vertical position independently of either set of tackle above described, I provide the following device: *w* is a screwed rod pivoted to the collar *l*. *w'* is a slot in the top of the post *e*, into which the rod *w* can be dropped when the davit is vertical. *w²* is a screwed nut engaging with the screwed end of the rod *w*, and is adapted to bear against the rear face of the post *e* when the rod *w* is in the slot *w'*, and up to which face it can be tightly screwed.

I claim—

1. The combination of davit pivoted by a horizontal pin passing through its foot to a foot-block, foot-block pivoted in a base-plate made fast to the deck, slotted arc-shaped davit-guide, and a nut and bolt device, the bolt of which passes through the slotted guide and on the back of the davit, as set forth.

2. The combination of davit pivoted by a horizontal pin passing through its foot to a foot-block on the deck, a fixed arc-shaped davit-guide, and a guiding and fixing nut and bolt device in or upon the said davit-guide, the bolt passing through an eye on the davit.

3. The combination of base-plate secured to the deck, a foot-block pivoted in the said base-plate, a davit pivoted to the top of the said foot-block by a horizontal pin passing through the foot of the davit, a post standing upon the deck behind the said base-plate, foot-block, and davit, and an arc-shaped davit-guide consisting of a pair of arc-shaped bars, one on each side of the davit, as set forth.

4. The combination of davit pivoted by a horizontal pin passing through its foot to a foot-block on the deck, a post standing on the

deck behind the said davit and foot-block, an arc-shaped bar on each side of the davit, both bars being held in a fixed position by being made fast to the bulwarks or the side rails of the vessel and to the said post, and tackle for raising and lowering the davit, as set forth.

5. The combination of davit pivoted by a horizontal pin passing through its foot to a foot-block, foot-block pivoted in a base-plate fast to the deck, a post standing upon the deck behind the davit, a pair of parallel slot-
 10 ted arc-shaped bars, one on each side of the davit and supported at their front and rear ends by the bulwark or by the side rail of the vessel and the said post, respectively, an eye on the davit, and a nut-and-bolt device, the bolt of which is passed through the said bars and eye, as set forth.

6. The combination of davit pivoted by a horizontal pin passing through its foot to a foot-block, foot-block pivoted in a base-plate fast to the deck, a post standing upon the deck behind the davit, an arc-shaped davit-
 25 guide supported at its front and rear ends by the bulwark or the side rail of the vessel and the said post, respectively, a pulley carried by rearward extensions on the davit, a pulley carried by the post on its rear face near the top of it, a pulley on the deck, and a line
 30 made fast to the post and led through the

above-mentioned three pulleys in the order named, as set forth.

7. The combination of davit pivoted by a horizontal pin passing through its foot to a foot-block, foot-block pivoted in a base-plate fast to the deck, a post standing upon the deck behind the davit, an arc-shaped davit-
 35 guide supported at its front and rear ends by the bulwark or the side rail of the vessel and the said post, respectively, a pulley carried by rearward extensions on the davit, a pulley carried by the post on its rear face near the top of it, a pulley on the deck, a line made fast to the post and led through the above-
 40 mentioned three pulleys in the order named, a collar fast upon the vertical portion of the davit, a ring loosely embracing the said portion and resting upon the said collar, a pulley fixed to the deck behind the post above men-
 45 tioned, and a line fast to the said ring and led through the said pulley, as set forth.

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

HENRY EDWARD BOWRING.

Witnesses:

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