

R. Creuzbaur.

Lowering Boats.

N^o 72171

Patented Dec. 17, 1867.

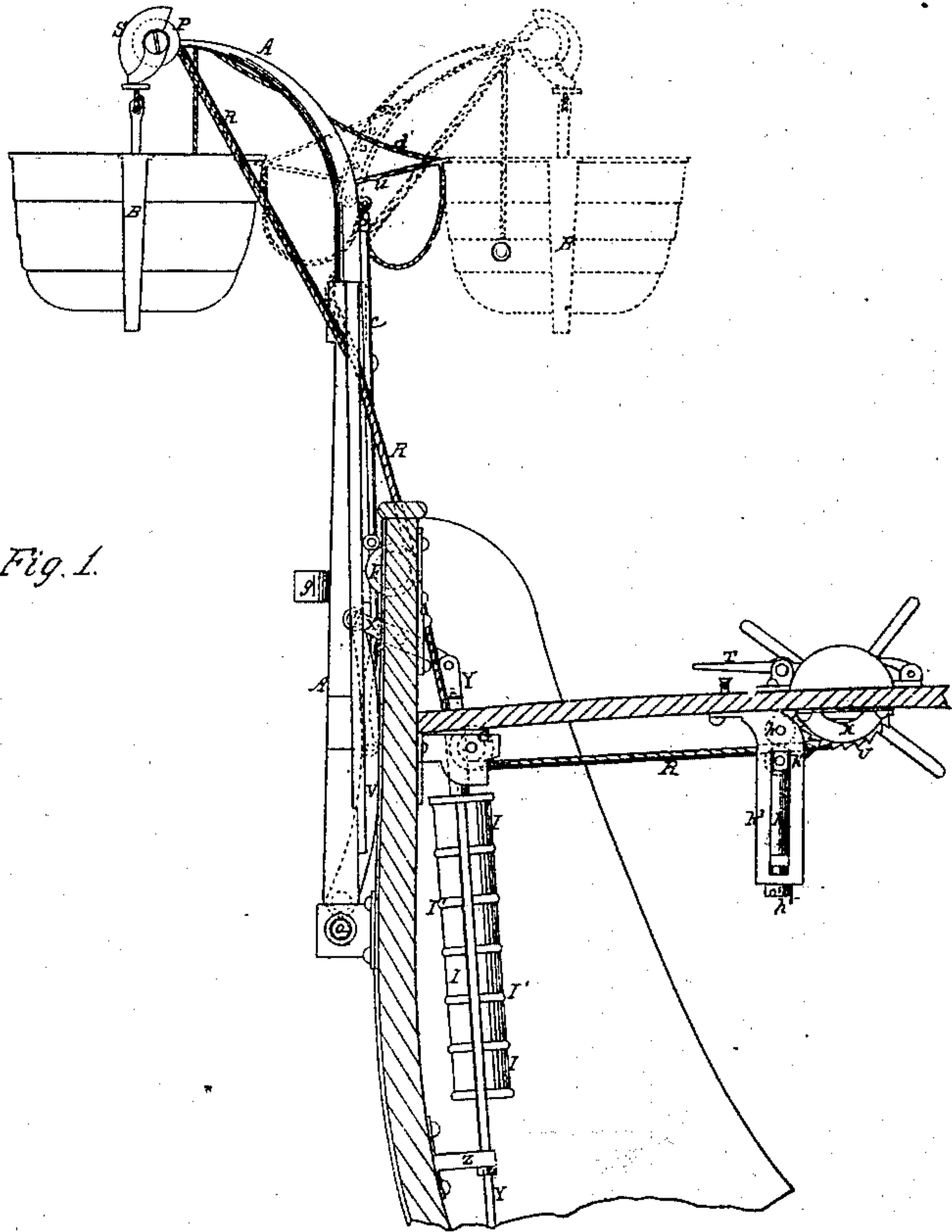


Fig. 1.

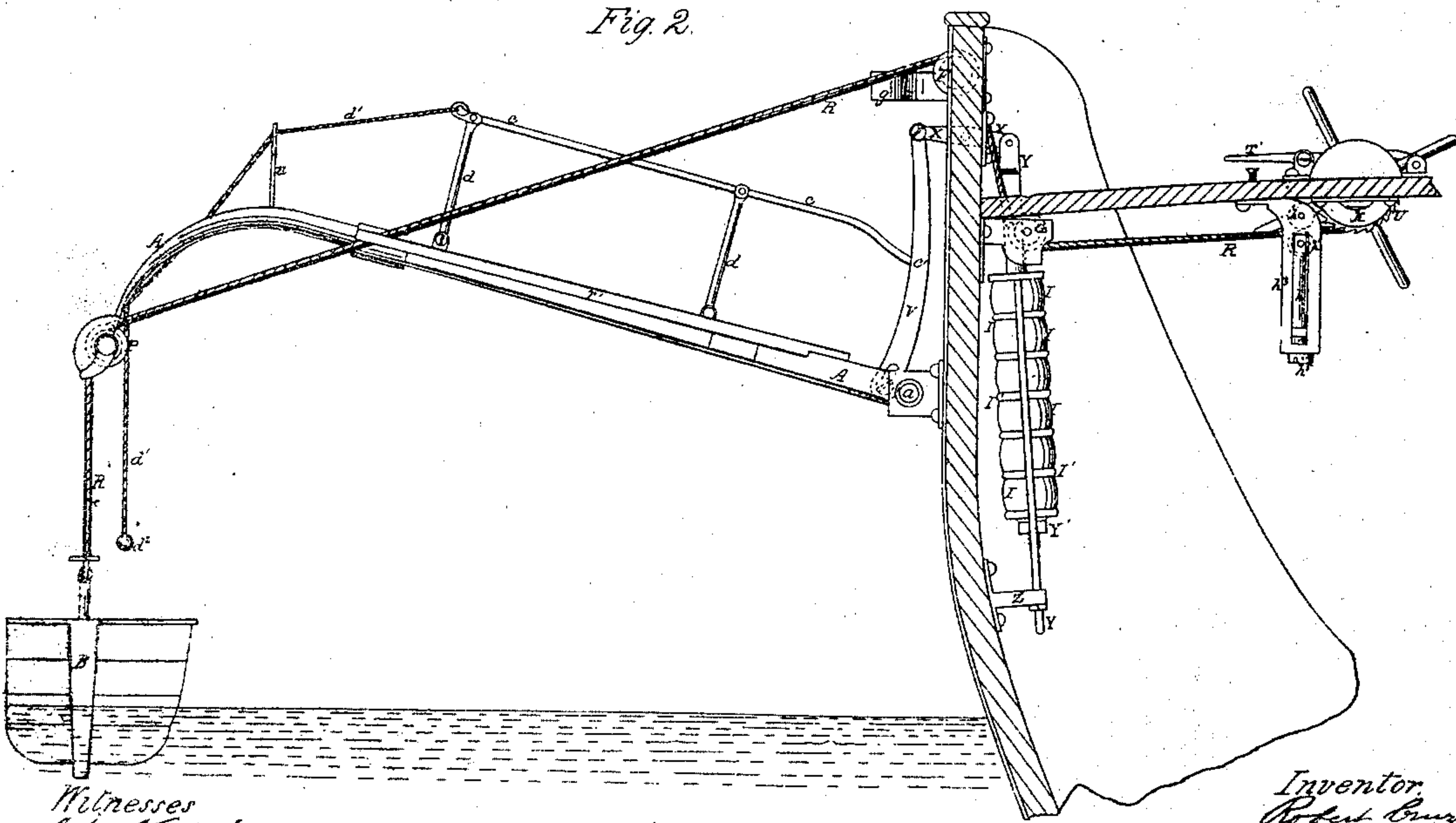


Fig. 2.

Witnesses
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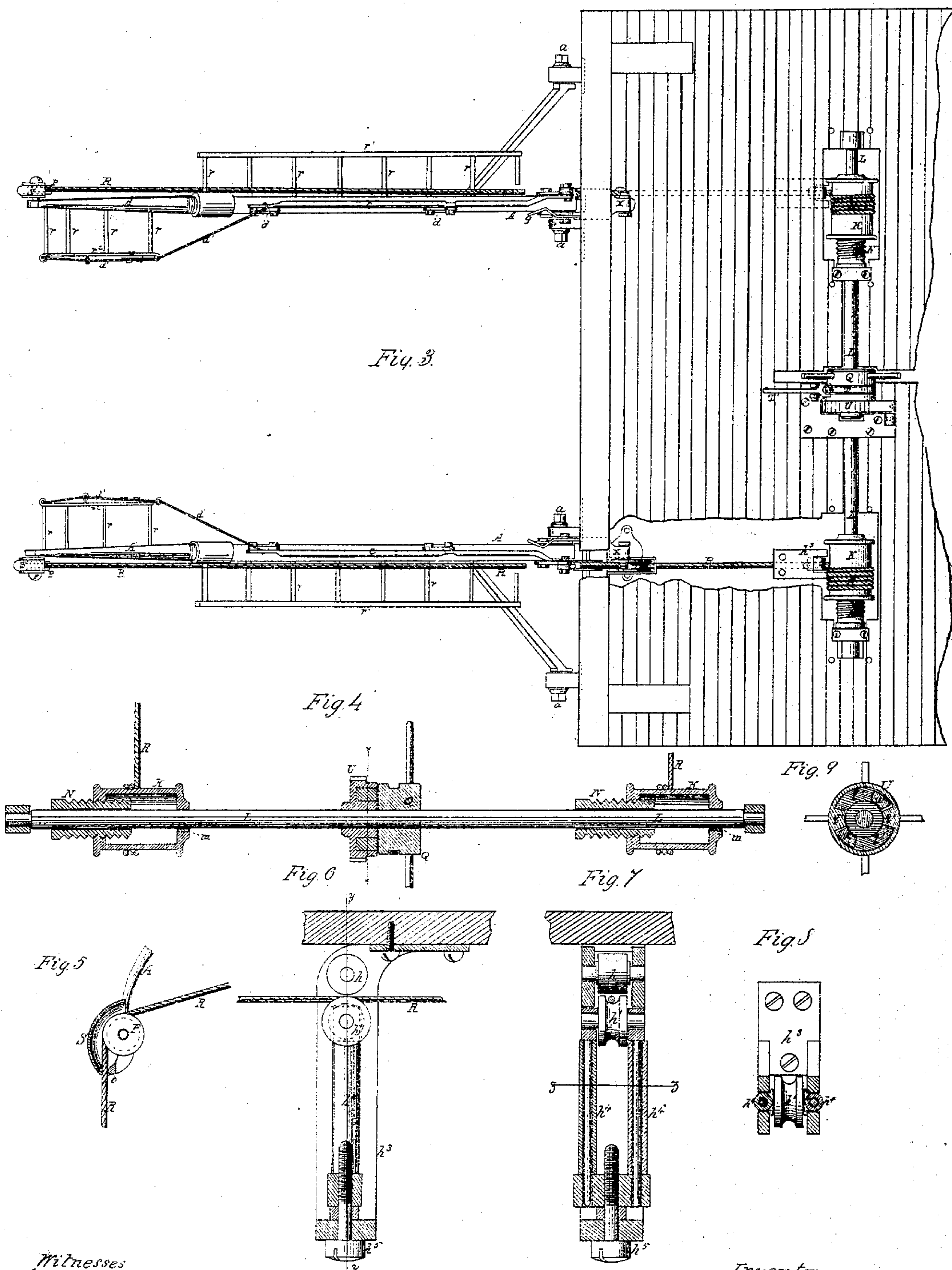
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ROBERT CREUZBAUR, OF NEW YORK, N. Y.

Letters Patent No. 72,171, dated December 17, 1867.

B.

IMPROVED BOAT-LOWERING APPARATUS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, ROBERT CREUZBAUR, of New York city, in the county and State of New York, have invented an Improved Boat-Lowering and Picking-Up Apparatus; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1, sheet 1, is a vertical sectional view of a portion of a deck and one side of a ship, showing in side elevation the application thereto of the improved boat-lowering and picking-up apparatus.

Figure 2, sheet 1, is a similar view of the same parts shown in fig. 1, indicating the davits in the act of raising or lowering a boat.

Figure 3, sheet 2, is a plan view of fig. 2, with a portion of the deck broken away to show one of the davit-ropes passing beneath the deck to its winding-drum.

Figure 4 is a sectional view, showing the winding-drum and its shaft.

Figure 5 is a sectional view of one of the hooded pulleys on the overhanging end of one of the davit-sections.

Figures 6, 7, and 8 are views of a device for preventing the davit-ropes from fouling.

Figure 9 is a sectional view taken in the plane indicated by line *x x* in fig. 4, showing the manner of applying the hand-wheel to its drum-shaft.

Similar letters of reference indicate corresponding parts in the several figures.

For the purpose of facilitating the raising and lowering of ships' boats, and for guarding against accidents in casting off boats, the nature of my invention consists in providing for raising and lowering a boat upon an even keel by applying the davit-ropes to drums which are upon a shaft, which is provided with a friction-brake, by which one man can safely lower a boat, and with a hand-wheel, capstan, connection, Spanish windlass, or other equivalent device, by which a boat is thus always lowered and hoisted upon an even keel, as will be hereinafter described. It also consists in certain novel means whereby the davit-ropes are prevented from running off their pulleys or fouling during the operation of raising or lowering a boat, as will be hereinafter described. It also consists in providing for winding the davit-ropes upon their drums in an even manner, so that both drums shall act uniformly to raise or lower a boat upon an even keel, as hereinafter described. The invention further consists in a means, which will be hereinafter described, for preventing injurious jar and concussion in raising and lowering a boat, as will be hereinafter described.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

In my application for a patent, lettered A, and accompanying this, I have set forth a mode of constructing ships' davits, whereby they can be swung from the ship's side in vertical planes, at right angles to the length of the ship, and a boat lowered into the water a safe distance from the ship's side. In said application I referred to some of the parts which form the subject of this application, but restricted the claim to the davits irrespective of the means for operating them, as other means than those shown therein might be used. Under this application I shall describe the hinged davits, but do not confine myself to their use, as the means hereinafter described for raising and lowering a boat may be employed in conjunction with the well-known davits, although I prefer to use these means in connection with said swinging davits.

In the accompanying drawings, A A represent two hinged or pivoted davits, which are attached to the outside of the vessel by means of pins, *a a*, or in any other suitable manner which will admit of the davits being vibrated in vertical planes at right angles to the length of the vessel, as indicated by the two positions shown in figs. 1 and 2. These davits are hinged or pivoted separately to the vessel's side, so that they may have independent movements of each other, or rise and descend in the arc of a circle together. The drawings represent the lower ends forked and pivoted to brackets, which are rigidly fastened to the vessel outside, but it is not contemplated to confine the invention to this peculiar attachment, as other modes of hinging the davits may be adopted. The forked ends of the davits serve to brace and strengthen them and prevent vibration and undue strain in a direction with the length of the vessel. The upper ends of the standards or straight portions of the davits are constructed with sockets in them, in which screw-threads are formed for receiving the screw-threaded lower ends of the curved overhanging portions of the davits, from which the boat B is suspended.

This mode of constructing davits will allow of the swinging of their curved top portions or sections (with boat attached) inward or over the deck of the vessel, as indicated by red lines in fig. 1, in which figure the curved portions of the davits are also represented as turned outward. At the extremity of the curved part of each davit is a pulley, P, over which the suspending-rope R works, and upon which this rope is safely held, and prevented from fouling by the shield S, which latter turns freely on the axle of said pulley, so as to conform to the different positions or directions of the rope in raising and lowering the free end of the davit. This shield S has an eye, b, through it, through which rope R passes, and by which the hood or shield is caused to accommodate itself to this rope, and the latter held safely in the groove of the pulley P, whether the boat should surge fore and aft, or in any other direction.

To enable persons to pass safely over the davits to a boat which is lowered into the water, or to pass from such boat to the vessel, a ladder or stairway is constructed upon both the straight and curved portions of each davit. This may be done by screwing rounds, *r r*, into the sides of the straight and curved portions of the davits and applying rails *r¹ r²* to the ends of said rounds, as shown in fig. 4, sheet 2. The rounds and rails of the curved sections of the davits are applied to the inner sides thereof, while the rounds and rails of the straight sections are applied on their outer sides. They can, however, be placed on the inner sides also. In order to complete the passage-way, a hand-railing is applied to each section of each davit, which railing is formed on the straight portion of each davit by the supporting-standards *d d* and rail *e*. These standards are pivoted to the rounds or to the ears at one end and to the rail *e* at the other ends. The rail *e* is hinged by its lower or inner end, at *e'*, to one of the suspension-bars *v* above the point of attachment of the davit to the vessel's side, and all the parts are of such length relatively that true parallelograms are formed between the several pivots, which admit of said parts folding up compactly when the davit is brought to the upright position shown in fig. 1. On the curved portion of each davit the hand-rail consists simply of a standard, *u*, with a hand-rope, *d¹*, fastened to an eye on the free end of the rail *e*, and passing through an eye formed on the upper end of this standard, as well as through an eye at the outer extremity of the rail *r²*, terminating in a ball or float, *d²*, to keep it taut and to facilitate the grasping of this rope. The weight of the boat will prevent the turning or tilting of these curved portions when stepped upon. When the ladder-ways on the upper and lower portions are both on the inside, the former lap and rest on the latter, which steadies them the more. The rope R of each davit passes from the hooded pulley P over a pulley, F, figs. 1 and 2, and then down the gunwale beneath the deck of the vessel and a pulley, G. From this pulley the rope of each davit passes beneath a pulley, *h*, to a drum, K. The rope R of each davit is prevented from fouling by having the grooved roller *h¹* to press upward against it, and hold it securely in its place in the groove of the pulley. This pulley *h* is applied to a frame, *h³*, which is bolted to the under side of the deck of the vessel, and the grooved roller *h¹* is held up in place against the rope R by blocks of India rubber or other suitable springs, *h⁴*, which can be adjusted and made to press the roller upward with greater or less force by means of a set-screw, *h⁵*, shown in figs. 6 and 7. Both davits and their appurtenances are constructed alike. The flanged drums K K, around which the davit-ropes R are wound, are made to revolve in unison with the shaft L, upon which they are applied, which shaft is arranged longitudinally with respect to the vessel. Each one of the drums K is applied to its shaft L by means of a key-tenon, *m*, in one end of the former, which fits into a long groove in the latter, thereby allowing this drum to be moved longitudinally while turning with its shaft L. That end of each drum K which is nearest the hand-wheel Q, has a female screw formed in it, which receives a male screw that is formed on the circumference of a stationary sleeve, N, which may be fastened to the deck in any suitable manner. The object of this arrangement is to guard the ropes R R of both drums K against fouling, by causing these drums to travel slowly endwise, so as always to present clear spaces to the ropes winding around them. Both davits being rigged exactly alike, the shaft L controls both drums K K, and is controlled by the hand and friction-wheel Q and ratchet-wheel U.

The hand and friction-wheels are arranged conjointly, and have formed within their hubs an elastic clutch, which is intended for neutralizing all straining jars, so as to secure all the parts against derangement and breakage. To form this elastic clutch the hand-wheel Q is firmly fastened to its shaft L, while the ratchet-wheel U sits loose upon this shaft, but has lugs, *u' u'*, fig. 9, sheet 2, on that side next the hand-wheel, which lugs engage with corresponding lugs, *q' q'*, on the hand-wheel. Rubber, cork, or other elastic blocks, *t t*, intervene between said lugs, and neutralize all sudden jars. The hand-wheel or hub Q is made to serve as a friction-brake wheel by means of the strap T, which is fastened to the deck at one end and to a lever, T', at the other end, so that by forcibly raising this lever the band may be made to encircle the hub Q firmly, thereby causing sufficient friction to allow one man to control the lowering of a boat.

As the vibrating davits, when lowered, would endanger a boat rising suddenly upon a wave, it is necessary to cause these davits to rise out of the way of the boat when relieved of the weight thereof. For this purpose two suspension-bars *v v* are hinged to each davit, close to their respective pivots, as shown in figs. 1 and 2. The upper ends of these bars are pivoted to the outer forked ends of the lever X, which has its fulcrum in the side of the vessel. The inner end of this lever X is pivoted to the rod Y, which passes through the series or pile of India-rubber springs I and alternate plates I', and is confined to them by the screw-nut Y', by which latter the tension of the spring is regulated. The lower end of this rod Y passes freely through an eye, which is made through the fixed bracket Z. Then these springs accommodate their position to the sweep of the end of lever X, and the davits are made to preserve a proper distance from the suspended boat.

As the rising of the davits will slacken the ropes R R, it is necessary to prevent this slack from running back to the drums, which would be likely to cause these ropes to override and foul. For this purpose the elastic pressure-rollers *h' h'* are made to act against the ropes beneath pulleys *h h*, as above described, and prevent those portions of the ropes between the drums and said rollers from becoming slack.

Operation.

To lower a boat from the deck into the water, the davits are brought into the position indicated in black lines, fig. 1, with sufficient slack of rope to allow the boat to be hauled under them. The device for attaching the boat to the ropes R is then adjusted ready for use, and the boat attached at both ends to said ropes. The ropes R are hauled in by winding them around drums K' by hand-wheel Q until the boat will pass over the gunwale. The davits and boat are then swung outward into the position indicated in black lines, fig. 1. If the sea is smooth, the davits can remain in the upright positions shown in fig. 1, and be held so by the catches *g g*, and the boat can be lowered close alongside of the vessel, as usual, with this difference: the two ropes R R can by my plan be paid out equally from both drums K, and the boat lowered upon an even keel. If the sea is rough, the hooks or latches *g* are detached from the davits and the latter pushed off. The boat then descends to the water, as shown in fig. 2, and rides safely until released. While the boat is attached to the davits there is no danger to persons that may be therein, as the davits rise out of the way whenever the boat rises upon a wave.

What I claim as new, and desire to secure by Letters Patent, is—

1. The application of elastic cushions *t' t'* between the hand-wheel hub Q and the ratchet-wheel U, for the purpose and in the manner substantially as described.
2. The longitudinally travelling drums K applied to the shaft L, substantially in the manner and for the purposes described.
3. In combination with pivoted ships' davits, I claim the pivoted shield or guard S, constructed so as to keep the ropes R in place upon their pulleys during the raising and lowering of a boat, substantially as described.
4. The combination of elastic pressure-roller *h'* with the roller or pulley *h*, for preventing the slack of rope R from extending back to its drum K, substantially as described.

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Witnesses:

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WM. G. WHEELWRIGHT.