

No. 810,854.

PATENTED JAN. 23, 1906.

J. W. GROFF.  
SHIP'S DAVIT.

APPLICATION FILED APR. 24, 1905.

2 SHEETS—SHEET 1.

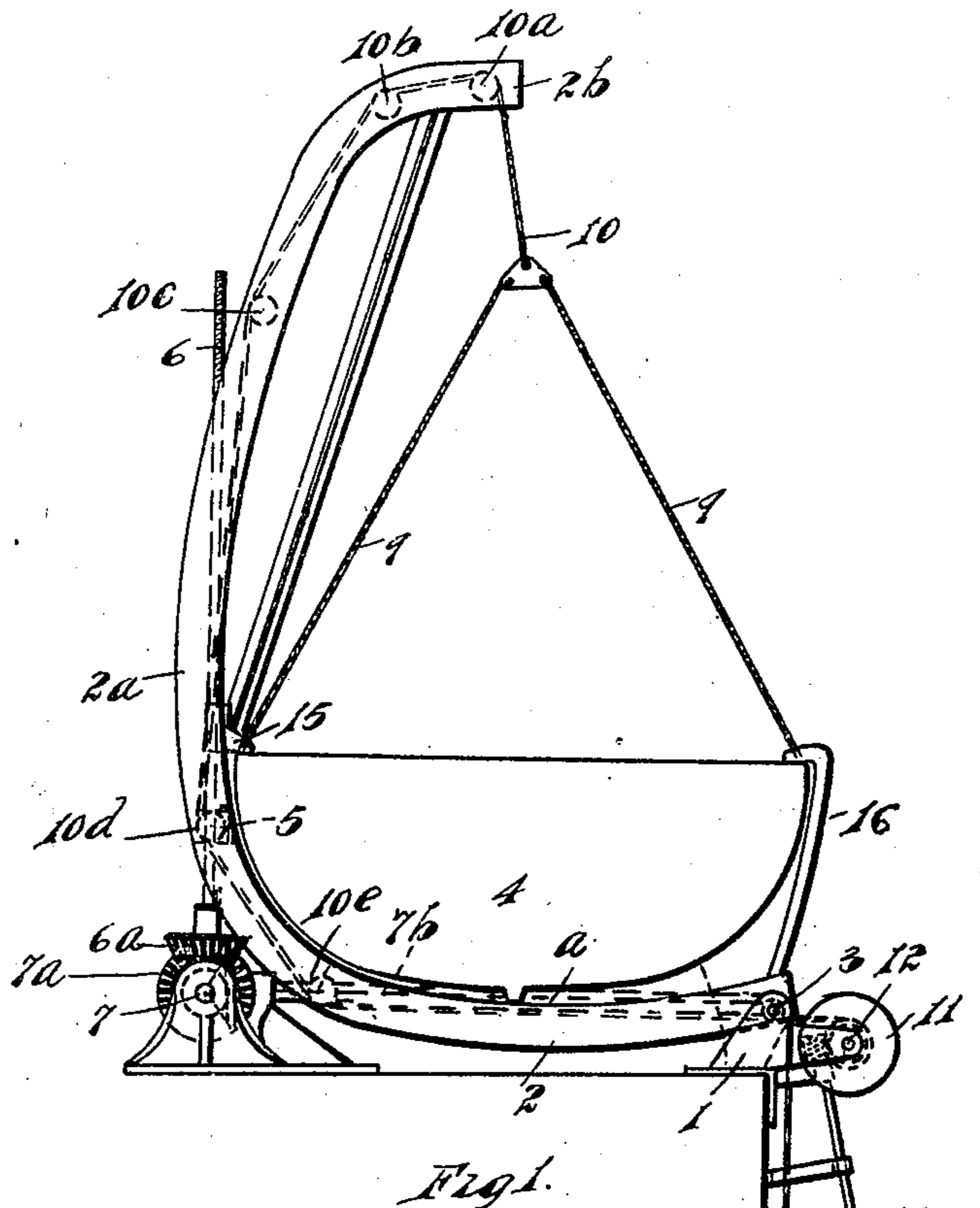


Fig. 1.

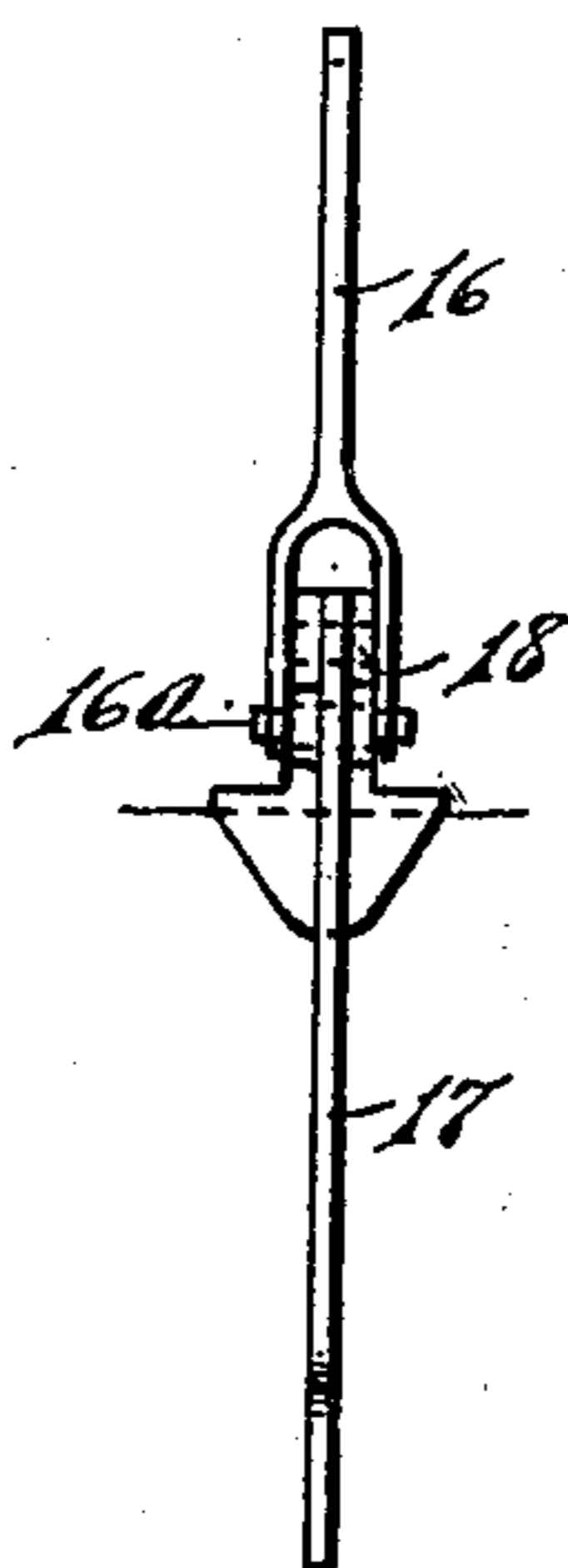


Fig. 5.

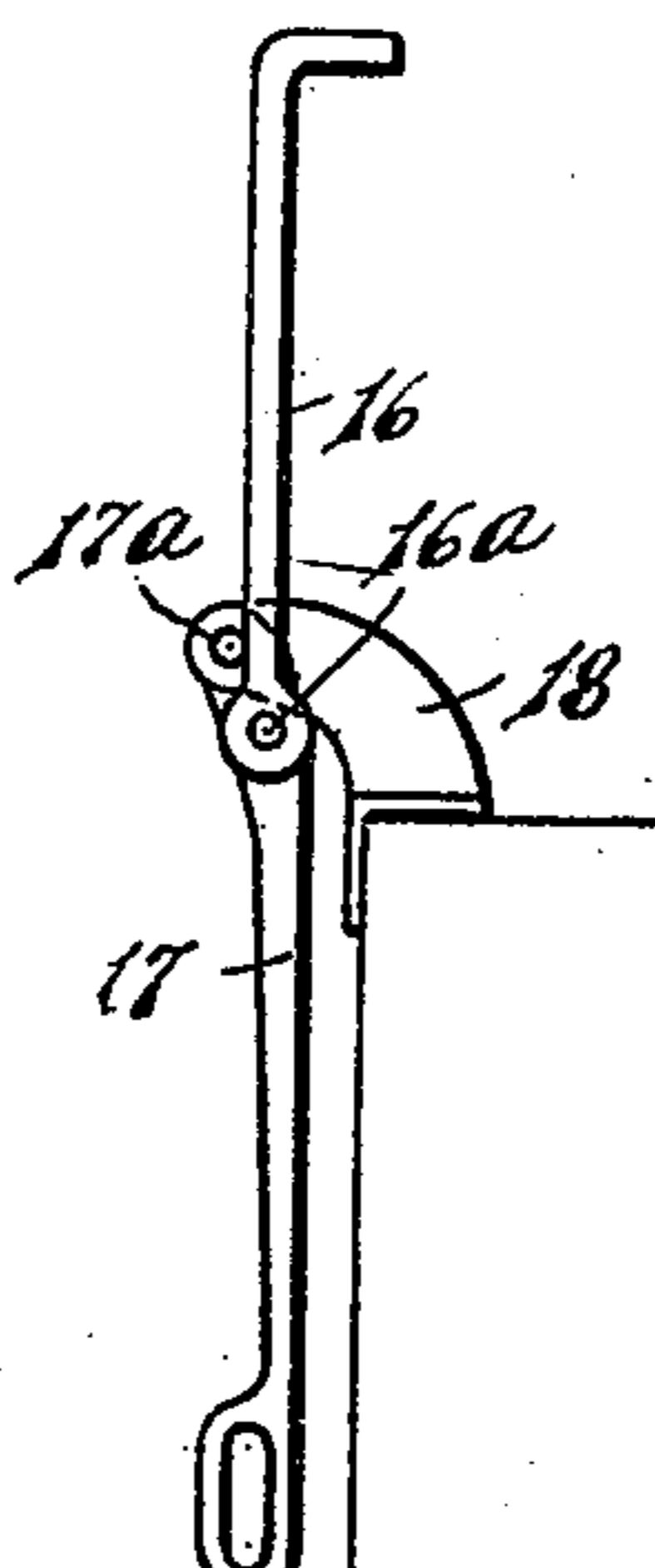


Fig. 4.

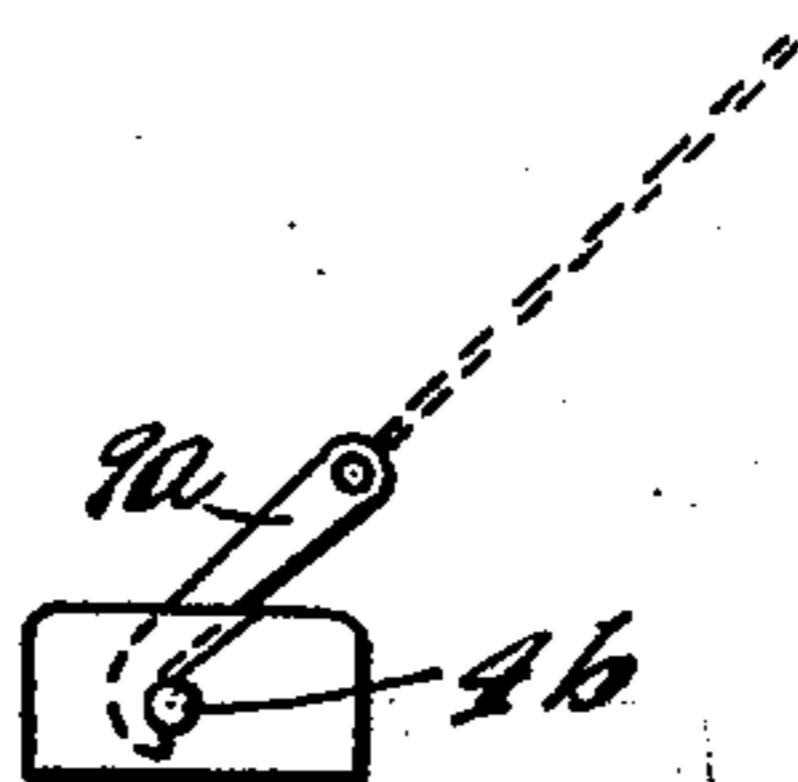


Fig. 6.

WITNESSES  
J. H. Massey  
C. F. Day.

INVENTOR  
John W. Groff  
By Parker & Bunker Attorneys.

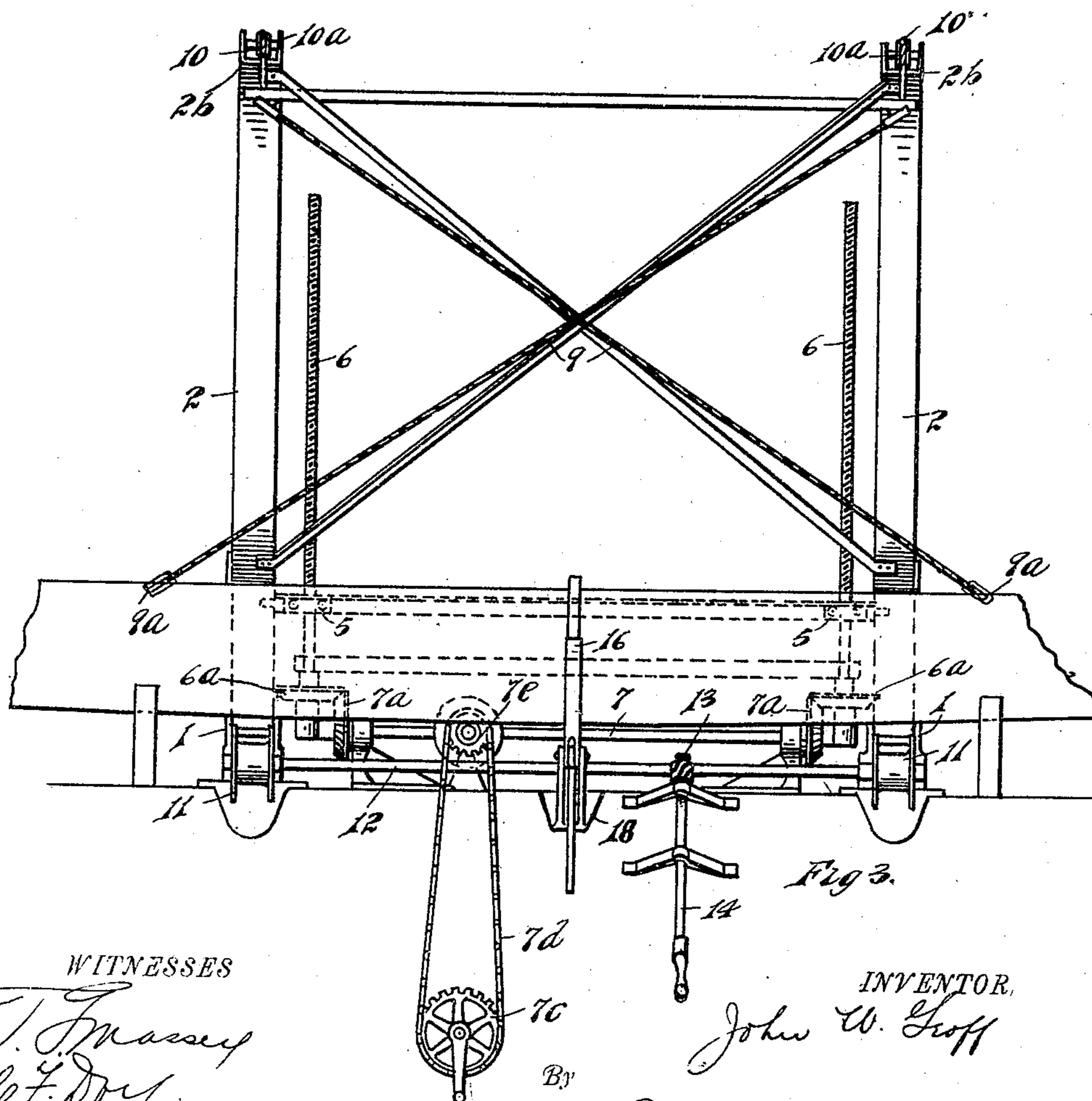
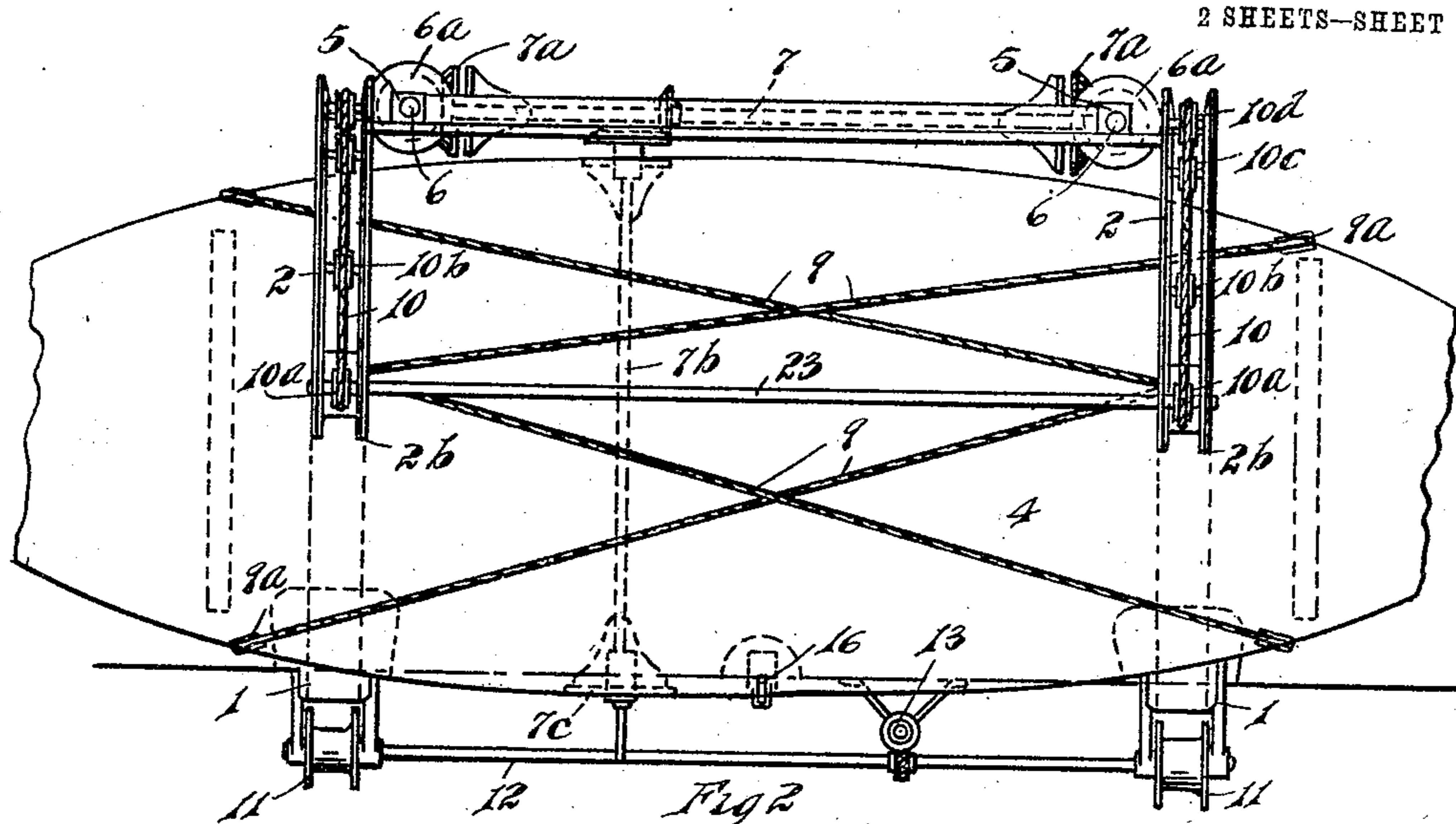
No. 810,854.

PATENTED JAN. 23, 1906.

J. W. GROFF.  
SHIP'S DAVIT.

APPLICATION FILED APR. 24, 1906.

2 SHEETS—SHEET 2.



*WITNESSES*

T. Massey  
C. F. Day.

*INVENTOR,*

John W. Groff

Parker & Burton Attorneys.

# UNITED STATES PATENT OFFICE.

JOHN W. GROFF, OF ALBION, MICHIGAN.

## SHIP'S DAVIT.

No. 810,854.

Specification of Letters Patent.

Patented Jan. 23, 1906.

Application filed April 24, 1905. Serial No. 257,042.

*To all whom it may concern:*

Be it known that I, JOHN W. GROFF, a citizen of the United States, residing at Albion, county of Calhoun, State of Michigan, have  
5 invented a certain new and useful Improvement in Ships' Davits; and I 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 pertains to  
10 make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to ships' davits, and has for its object an improved crane employed for lifting and storing the small boats  
15 which are used in connection with vessels and for lowering and launching the same.

The crane which forms part of the invention of this device is supported by hinges  
20 either to the deck or to a truck-support that can be moved on the deck. From the hinge the crane reaches for a distance substantially parallel with the deck under the space which is occupied by the boat when stored and on  
25 the side of such space which is opposite to the hinge curves and rises, and the extreme upper end curves forward and reaches to a line which is vertically substantially above the middle of the boat that is stored in the  
30 device. The crane is provided with appliances which turn it on its hinge or pivot until its top end projects and swings the boat entirely out from its seat to a position to be  
35 lowered directly into the water at the side of the vessel. It is also provided with appliances by which the lowering of the boat is effected.

Other details of the improvement will be explained at length.

40 In the drawings, Figure 1 is an end elevation of the raising and lowering device. Fig. 2 is a plan. Fig. 3 is a side elevation. These drawings are rather diagrammatic and pictorial. Fig. 4 is a detail of a securing-hook, side  
45 view. Fig. 5 is a front view of the same. Fig. 6 is a detail of the hook by which the boat is attached.

There are preferably two crane-arms, although for small boats a single crane-arm  
50 placed midway the device can be used satisfactorily.

1 indicates a standard which rises from the deck and to which is pivotally connected a curved crane-arm 2, that extends from the  
55 pivot 3 horizontally under that part of the device which will be occupied by the boat

and which may be called or considered the "cradle" for the boat 4. At that side of the cradle part of the arm which lies opposite the pivot 3 the arm curves and rises nearly vertically at 2<sup>a</sup> and toward the summit curves forward until the extreme end 2<sup>b</sup> is vertically above the middle part of the cradle, or substantially so.

On the rising part 2<sup>a</sup> of the arm is a swiv-  
65 eled nut 5, through which engages a screw 6, the head of which is pivoted on a horizontal shaft 7. The screw is provided with a miter-gear 6<sup>a</sup>, that meshes with a miter-gear 7<sup>a</sup> on the horizontal shaft 7. The horizontal shaft  
70 7 is driven by a cross-shaft 7<sup>b</sup>, that extends forward to that side of the device to which the arms are pivoted and is provided with means for rotating it at that point. The means shown in the drawings consist of a  
75 sprocket-wheel 7<sup>c</sup>, that is connected by a chain 7<sup>d</sup> to a winch-driven sprocket-wheel 7<sup>e</sup>, the winch being fixed at a convenient elevation on the housing of the vessel and in a convenient place for access thereto. As shown  
80 in the drawings, this hand-winch is on the side housing of the cabin at a convenient elevation above the main deck, the entire apparatus being mounted to swing the boat clear from the main deck when the crane part of  
85 the davits are swung on the pivots 3 to swing the normally horizontal part 2 to a vertical and the normal vertical part 2<sup>a</sup> to a horizontal.

The boat is hung by lines 9, which are ac-  
90 tuated by a lifting-line 10, that passes over sheaves 10<sup>a</sup>, 10<sup>b</sup>, 10<sup>c</sup>, 10<sup>d</sup>, and 10<sup>e</sup> to a drum 11 on a horizontal shaft 12. The horizontal shaft 12 is actuated by miter-gear or spiral gear 13 or in any other suitable way, which  
95 is itself actuated by a hand-winch 14, properly mounted in journals to bring the winch in any convenient place for operation. That part 2 of the crane which lies normally parallel with the deck forms a cradle for the boat  
100 4, which is held therein by a clamp 15, fixed to the arm, and by a pivoted clamp 16, which clamp 16 is pivoted to a lever 17 and the lever pivoted to a support 18 from the deck. The pivoted end of the clamp 16 oscillates  
105 around the pivot 17<sup>a</sup>, by which the lever 17 is held to a support 18, and takes a position, such as that shown in Fig. 4, with the pivot 16<sup>a</sup> swung beyond the "center" and in a position where the clamp is locked over the top  
110 of the boat.

In order to hold the boat by hooks which

detach themselves from the boat, I connect the lines by a tie-rod 23. From the end of the tie-rod are lines 9, each terminating with a hook 9<sup>a</sup>, of which the bill has only a quarter-  
 5 turn on the shank of the hook and the shank of the hook is made quite heavy. The bill is caught over a pin 4<sup>b</sup>, that lies athwart the boat. These hooks will lift and sustain the boat, but will automatically detach them-  
 10 selves from it when the boat is supported from the under side, as by water, and the lines are allowed to slack. An additional cradle of blocks 20 and 21 is advisable. If more than a single crane is employed, they  
 15 are preferably braced and tied together by braces 22.

What I claim is—

1. In a hoisting device for boats, in combination with a pivoted crane fashioned to  
 20 have supporting-lines for a boat suspended from the free end and with a projection intermediate the end portions for engagement over the gunwale of the boat, a clamp member pivoted to the crane-support and adapt-  
 25 ed to cooperate with said projection in securing the boat in place, means for swinging the crane on its pivot, and means for lifting and lowering a boat, substantially as described.

2. In a lifting device for boats, in combination with a pivoted crane-arm carrying  
 30 sheaves over which lifting-lines run and having a projection on its body portion adapted to engage over one gunwale of a boat, a clamping member pivotally connected with  
 35 said crane-arm adapted to cooperate with said projection in holding the boat in a posi-

tion of rest by engagement over the other gunwale of the boat, a screw actuator engaging through a swiveled knot on said crane-arm whereby said crane-arm may be dis- 40 placed from its position of rest, means whereby said screw may be actuated at a distance from said crane, and means for hoisting and lowering a boat suspended from the lifting-lines, substantially as described. 45

3. In a lifting device for boats, in combination with a pivoted arm, a clamp on said pivoted arm, a clamp pivoted to the fixed part upon which the arm is pivoted, means 50 for swinging said arm on its pivot, and means for lifting and lowering a boat connected with said arm but actuated independently thereof, substantially as described.

4. A davit for boats, having in combination a curved arm pivotally secured to a 55 support and normally in a position of stable equilibrium with reference to the side of a ship, a pivoted clamping member adapted to cooperate with a portion of the arm in hold-  
 60 ing a boat in place therein, means for hoisting and lowering a boat suspended from said davit, and means arranged to be actuated independently of said hoisting means where-  
 65 by said arm may be swung on its pivot, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

JOHN W. GROFF.

Witnesses:

CHARLES F. BURTON,  
 MAY E. KOTT.