

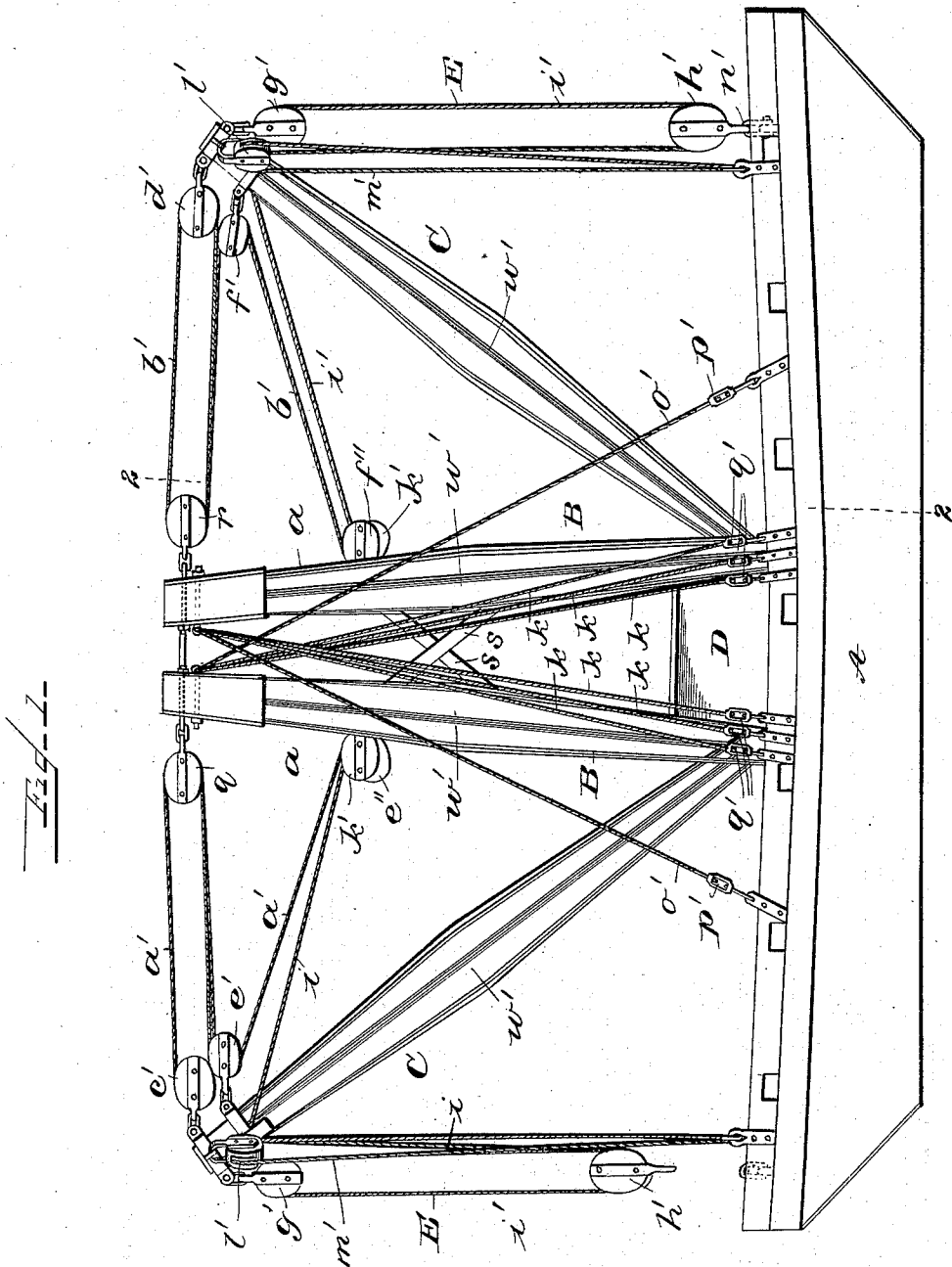
(No Model.)

3 Sheets—Sheet 1.

L. H. TIMMANS.
DERRICK.

No. 565,708.

Patented Aug. 11, 1896.



Witnesses
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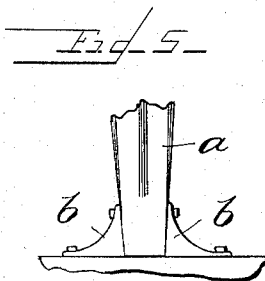
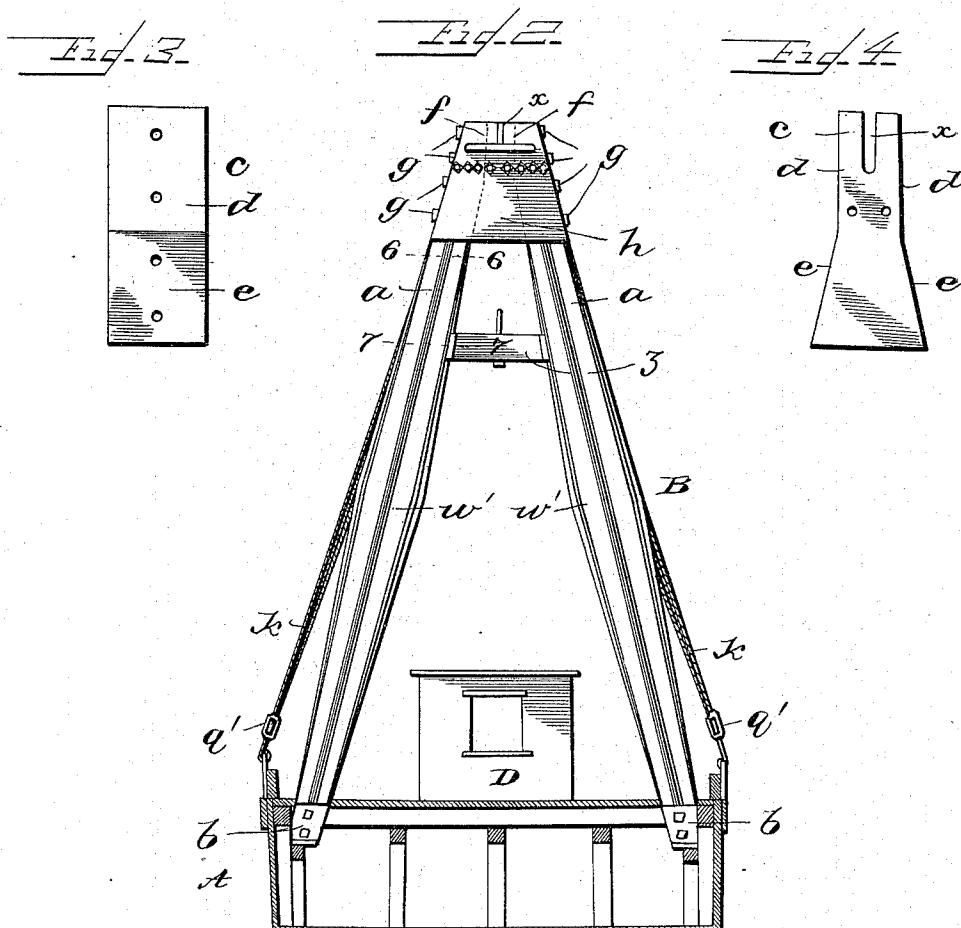
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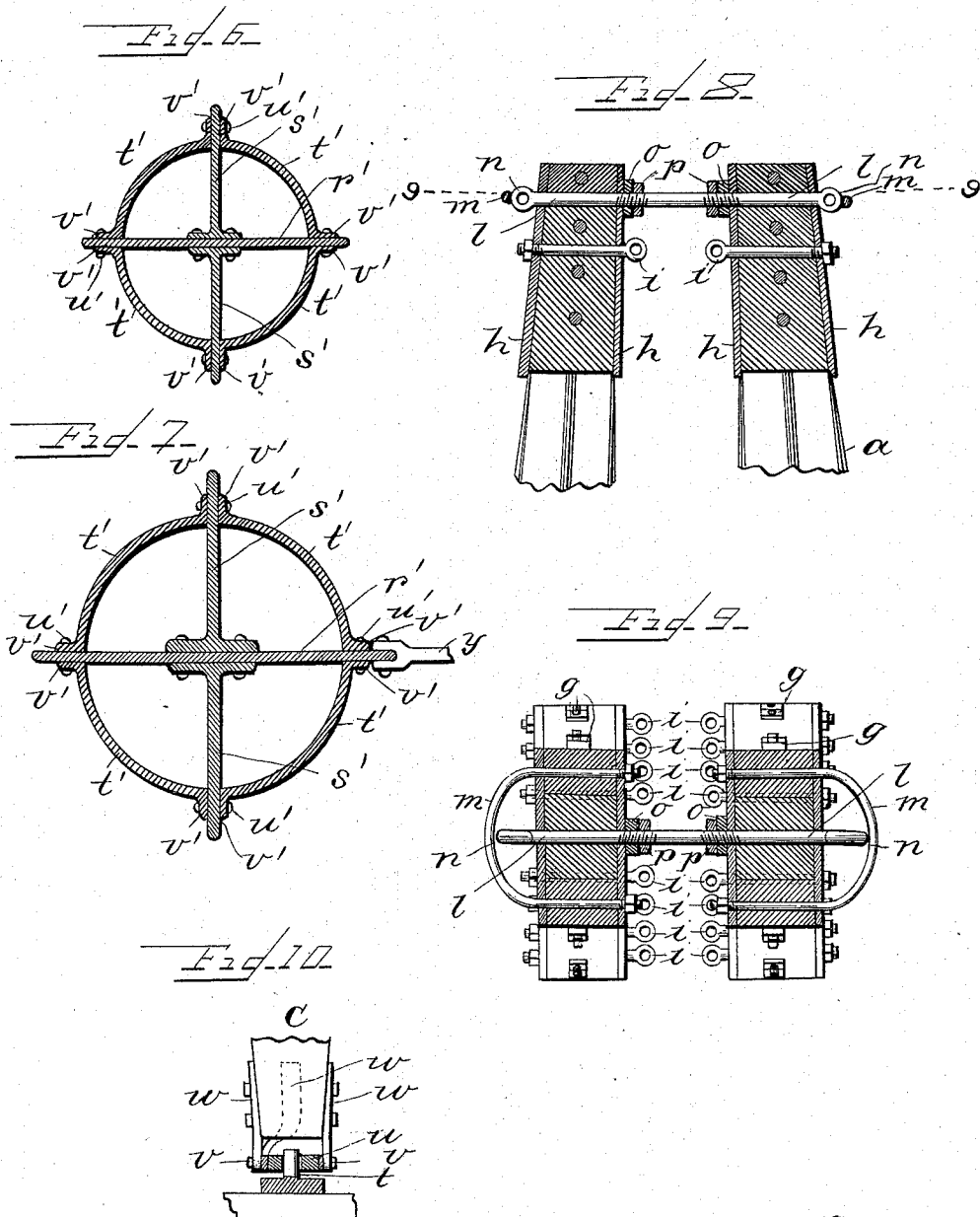
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UNITED STATES PATENT OFFICE.

LOUIS H. TIMMANS, OF BALTIMORE, MARYLAND, ASSIGNOR TO LOUIS B. BERNEI AND MAURICE LAUPHEIMER, OF SAME PLACE.

DERRICK.

SPECIFICATION forming part of Letters Patent No. 565,708, dated August 11, 1896.

Application filed April 30, 1895. Serial No. 547,623. (No model.)

To all whom it may concern:

Be it known that I, LOUIS H. TIMMANS, a citizen of the United States, residing at the city of Baltimore, State of Maryland, have invented certain new and useful Improvements in Derricks; 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 present invention relates to derricks especially adapted to raise very heavy weights and designed with reference for use as a floating derrick to raise wrecked vessels and for handling heavy machinery and other bodies in a harbor, but may be used on a stationary base or foundation; and it consists in certain novel features of construction, which will be fully disclosed in the following specification and claims.

In the accompanying drawings, which form part of this specification, Figure 1 represents a side elevation of my invention; Fig. 2, a vertical transverse section of the scow on line 2 2, Fig. 1, and showing one of the A-frames in end elevation; Fig. 3, a side view of one of the brace-blocks detached; Fig. 4, an edge view of the same; Fig. 5, a side of the lower end of one of the masts of the A-frame; Fig. 6, a transverse section of said mast on the line 6 6, Fig. 2, on an enlarged scale; Fig. 7, a like view on line 7 7, same figure; Fig. 8, a vertical section of the upper ends of the two A-frames; Fig. 9, a transverse section on line 9 9, Fig. 8; and Fig. 10, a side view of the lower end of the boom and its bearing.

Reference being had to the drawings and the letters thereon, A indicates a scow upon which the derrick is supported when used for marine purposes, such as raising wrecked and sunken vessels or for handling heavy bodies in a harbor; B B, the A-frames, which are composed of the masts *a a*, which are supported upon a suitable base or frame in the scow, and may be secured by knees or brackets *b b*. (Shown in Fig. 5.) Between the upper end of the masts is interposed a brace-block *c*, which is provided with a vertical slot *x* to receive the draft-rod, vertical sides *d d*, and inclined sides *e e* below the vertical portions *d d*, and the angle of said

inclined portions corresponds with the angle of the A-frame, transversely of the frame, as shown in Fig. 2. The extreme upper ends of the masts being cut at *f f* correspond with the vertical sides *d d* of the brace-block, and the masts and the brace-block are secured together by transverse bolts *g*. The flat vertical portions *d d* on the brace-block and the corresponding parts *f f* on the masts form shoulders or bearing-surfaces, which, in conjunction with the inclined portions *e e* on the brace-block and the sides of the masts, resist lateral strain on the A-frame and prevent the masts sliding upon the brace-block, as they do when an inclined block only is used. On the front and rear sides of the A-frame are metal plates *h h*, through which the masts and the brace-block pass, the eye-bolts *i*, to which the guy-lines *k* are attached, and the draft-rods *l* and the yoke *m*.

The draft-rod *l* is provided with an eye *n* at each end and is secured to each A-frame by a shoulder or a nut *o* and lock-nut *p*, and the tackle-blocks *q r* engage the eye in the draft-rod, and the yoke at opposite ends of the draft-rod and the strain of the draft or weight of the body being raised is distributed upon the draft-rod and the yoke, and at the same time the strain is upon both A-frames, they being secured together by the draft-rod and by the crossed braces *s s*, as shown in Fig. 1.

C C indicate the booms or jibs, which may be of the same form of construction as the masts *a a*, and one of said booms is provided at each end of the derrick and is supported upon a suitable pivot-bearing *t* by the head *u*, which is provided with trunnions *v*, which are engaged by straps *w*, secured to the lower end of the boom, as shown in Fig. 10, and the boom vibrates upon the trunnions *v* and rotates on the pivot-bearing *t*, so that the boom may be swung to operate on either side of the scow or at any point forward of its support upon the deck of the scow. The booms are connected at their upper ends to the A-frames B B by hoisting-ropes *a' b'*, which engage the tackle-blocks *q r*, respectively, and the blocks *c' d'*, attached to the booms, and the ropes *a' b'* then pass over blocks *e' f'* and extend to blocks *e'' f''*, and from thence to suitable hoist-

ing machinery (not shown) located in the cabin D of the scow.

On the outside of the booms C C and to the upper ends thereof are attached the hoisting-tackle E, comprising blocks $g' h'$ and ropes v' , which also pass over blocks k' and extend to the hoisting machinery.

On each side of the booms (though only one is shown) is attached a block l' and rope m' to draw the booms into position for work. By this arrangement of the hoisting-tackle the tackle E which is not in use may be secured to the deck of the scow, as shown at n' , and the weight of the body being raised is distributed throughout the compound derrick. In a stationary derrick the tackle E not in use may be secured to some stationary object on which to draw, or in either event the two booms may be used for hoisting at the same time when the weights on the two booms will resist each other. The frames may be further secured to resist the strain of the body being raised by brace-lines o' , which are provided with the usual turnbuckles p' for regulating the tension on said lines, and the guy-lines k' are provided with turnbuckles q' for the same purpose.

The masts and the booms are hollow metallic structures composed of a central longitudinal web or plate r' , to which are bolted on opposite sides webs or plates $s' s'$ of T-iron, which extend throughout the entire length of the masts and the booms, and between said plates are transversely-curved plates of metal $t' t' t' t'$ and secured thereto by bolts or rivets u' , which extend through the flanges $v' v'$ on the plates t' and through the plates $r' s'$, as shown in Figs. 6 and 7. The masts and the booms are given a swell in their longitudinal center, as at w' , and taper gradually toward each end, and the plates $r' s'$ project beyond the plates t' a greater distance in the center of the masts and the booms than at the ends, the object of which is to supply the greatest strength to that part of the structure subjected to the greatest strain in hoisting heavy bodies. The masts and the booms thus constructed possess great strength while they are comparatively light in weight and the projecting webs or plates $r' s'$ afford a ready means for securing brace-rods, as shown at y in Fig. 7.

The blocks k' and $e'' f''$ may be supported by a cross-bar z . (Shown in Fig. 2.)

The draft-rod l is applied by inserting it in the vertical slot x in the upper end of the brace-block c , which slot is also formed in the plates h , and that part of the slot above the draft-rod is filled after the rod has been inserted.

Having thus fully described my invention, what I claim is—

1. A derrick-frame composed of two hollow metallic masts having their upper ends and adjacent sides cut at an angle to the sides of the masts and a brace-block having vertical

and angular sides to correspond with the upper ends and the adjacent surfaces of the masts.

2. A derrick-frame composed of a pair of A-frames connected at their upper ends by a draft-rod extending through both frames in combination with a boom connected to each end of the draft-rod and suitable hoisting-lines.

3. A derrick-frame composed of two masts having their upper and adjacent ends cut at an angle to the sides of the masts, an interposed brace-block having vertical and angular sides to engage said upper ends of the masts, plates on the front and rear sides of the masts, and eyebolts extending through the masts and the plates, in combination with a boom guy-lines attached to said eyebolts and a suitable hoisting-line.

4. A derrick-frame composed of a pair of A-frames connected at their upper ends by a draft-rod extending through both frames and having an eye at each end and a yoke on the front and rear of the frame and extending over the eye of the draft-rod in combination with a boom connected to each end of the draft-rod and to one of said yokes and suitable hoisting-lines.

5. A derrick-frame composed of a pair of A-frames connected at their upper ends by a draft-rod extending through both frames, and a plurality of eyebolts extending through the frames with the eyes of the bolts on the adjacent sides of the A-frames, in combination with crossed guy-lines engaging said eyebolts, a boom connected to each end of the draft-rod and suitable hoisting-lines.

6. A hollow metallic mast for a derrick-frame composed of a continuous central web and webs connected to each side thereof and all the webs tapering from the longitudinal center of the mast toward both ends and transversely-curved plates secured to the webs and tapering from the longitudinal center to the ends of the masts.

7. A hollow metallic mast having a swell in the center, and provided with projecting webs extending throughout the length of the mast, the greatest projection of the webs beyond the body of the mast being in the longitudinal center of the masts.

8. A compound derrick composed of two A-frames connected by a continuous draft-rod extending through both frames and each frame provided with a boom connected to said draft-rod, in combination with a line for connecting the working boom to the idle boom and a line for connecting the idle boom to a resisting medium.

In testimony whereof I affix my signature in presence of two witnesses.

LOUIS H. TIMMANS.

Witnesses:

D. C. REINOHLE,

D. WEIMER REINOHLE.