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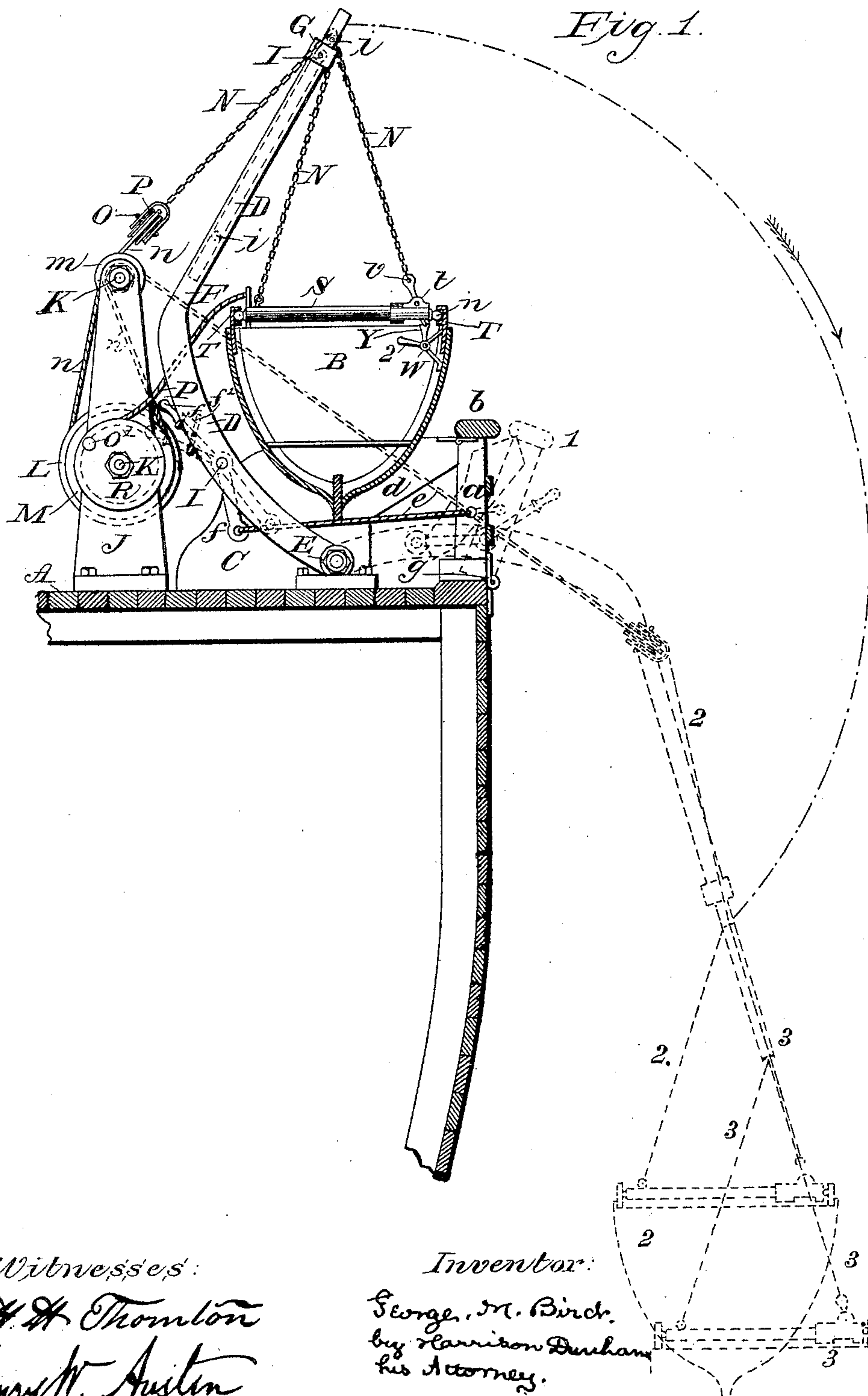
2 Sheets—Sheet 1.

G. M. BIRD.

RELEASING, LOWERING, AND DETACHING SHIPS' BOATS.

No. 437,881.

Patented Oct. 7, 1890.

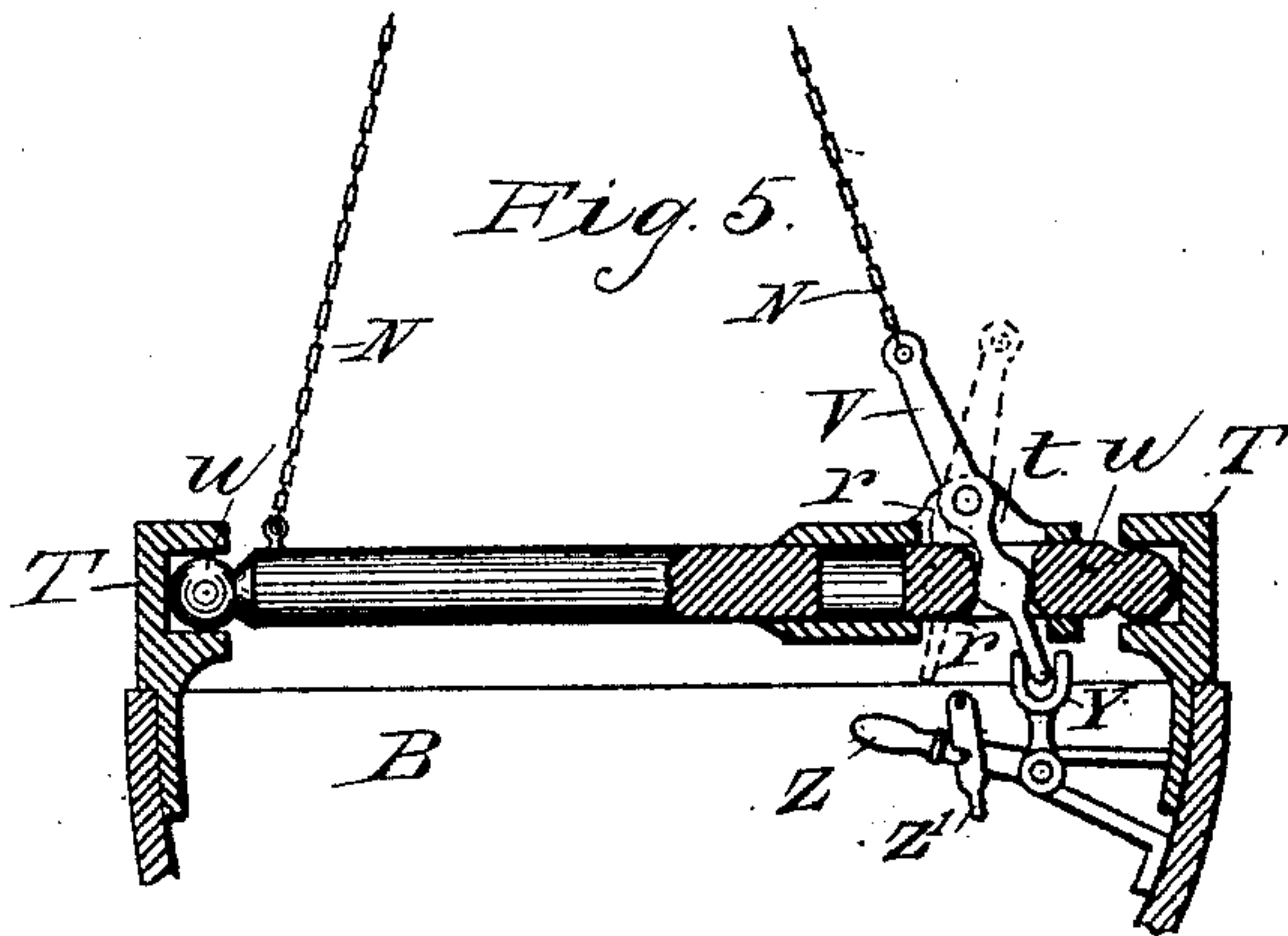
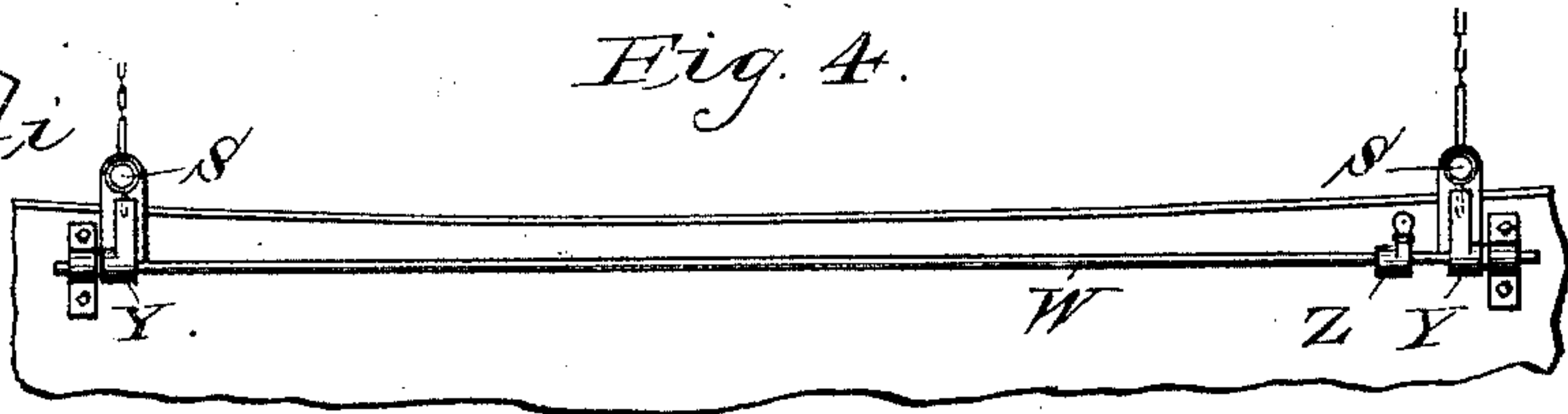
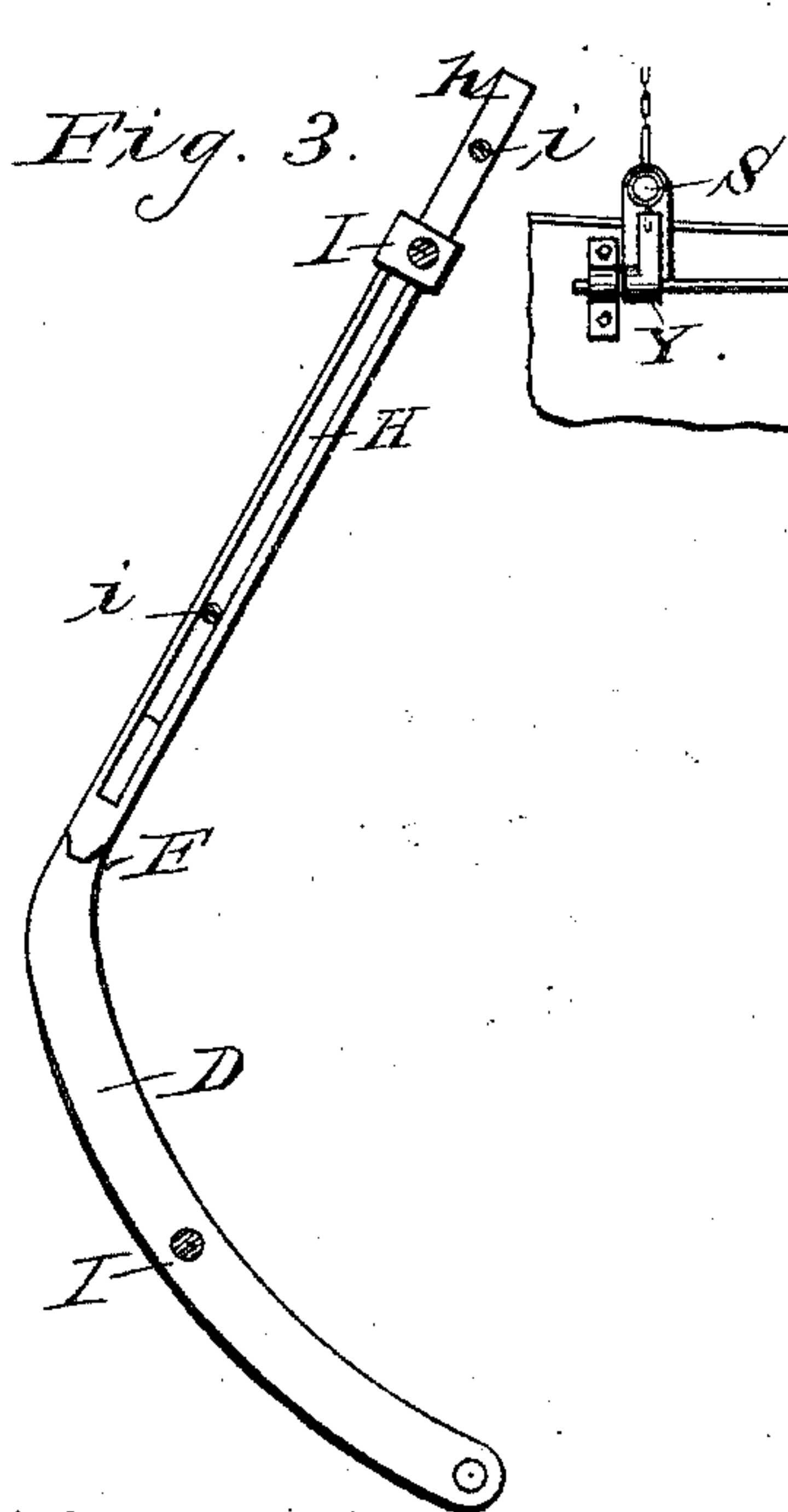
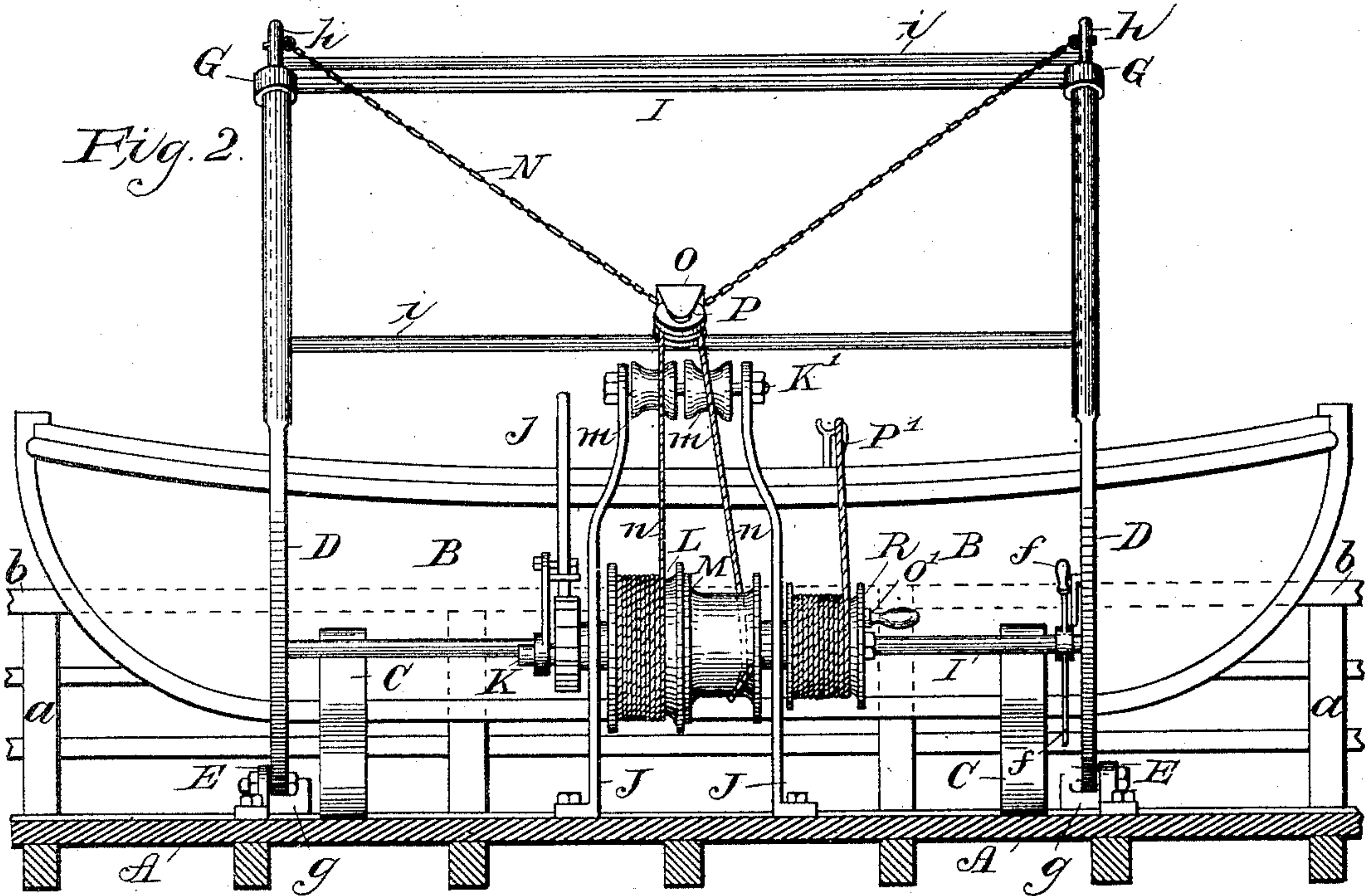


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RELEASING, LOWERING, AND DETACHING SHIPS' BOATS.

No. 437,881.

Patented Oct. 7, 1890.



Witnesses
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UNITED STATES PATENT OFFICE.

GEORGE M. BIRD, OF BOSTON, MASSACHUSETTS.

RELEASING, LOWERING, AND DETACHING SHIPS' BOATS.

SPECIFICATION forming part of Letters Patent No. 437,881, dated October 7, 1890.

Application filed December 8, 1884. Serial No. 149,822. (No model.)

To all whom it may concern:

Be it known that I, GEORGE M. BIRD, of Boston, county of Suffolk, and State of Massachusetts, have invented new and useful Improvements in Releasing, Lowering, and Detaching Boats from the Decks of Vessels, of which the following is a specification.

The object of my invention is to provide safe and rapid means that can be ready for instant use at all times for releasing, lowering, and detaching boats from the decks of vessels and to prevent their rolling or swaying against the side of the vessels. I attain these objects by the mechanism shown in the accompanying drawings, in which—

Figure 1 shows a vertical section of the mechanism of my invention. Fig. 2 is a side view on inboard side of boat B. Fig. 3 is a view of one end of lower section of davit D and inside bar *h*, slot H, and cross-bars *I I* and *i i*. Fig. 4 is a section of side of boat, showing lugs and detaching appliances. Fig. 5 is a vertical section of boat, showing the same.

A shows the deck of vessel; B, the boat resting on chocks C C, that are secured to the deck at such distance from the side of the deck that the boat may be inside of the rail when in place.

The releasing mechanism consists of the stanchions *a a*, hinged to the outer edge of the deck; the rail *b*, fastened to stanchions, and the releasing-chocks *d d*, having one end hinged to the stanchion or rail, the other end resting on chocks C, the hand-lever *f* being pivoted to the davit D, and the catch *f'* pivoted to davit D. The rope *e* connects stanchion with hand-lever *f*, and when pressed down causes the stanchions *a a* and chocks *d d* to swing out at the same operation, as shown by dotted lines, Fig. 1, of stanchions and lever, and releases the boat ready to lower. *g g* are blocks on side of deck for davits to rest on when lowered.

The lowering mechanism consists of the davits, windlass, and connections. To give a variable length to the davits D D, they are made in two sections. To allow them to swing from the upright position, as shown in Fig. 1, to the lowest position (see dotted lines) outside of vessel, the lower ends of outside sec-

tion are pivoted to stands E E, which are fastened to the deck nearly under the center, and toward the ends of the boat forming an angle or curve up and back from the stands E E to the top and inboard side of boat at F. From F to G they are tubular and straight, having collars G G on the upper ends, and slots H H (see Fig. 3) on inside from F to G. The horizontal bars I I between the davits hold them firmly together, forming a frame. The upper section of frame consists of bars *h h*, inside the hollow davit, with cross-bars *i i*, forming a frame for extension, the bars *i* and *h* sliding in slots H H and davit D. (See Fig. 3.) The two sections of frames form the davits, and as the shape allows them to go back and over the boat the frame can be much shorter than the length of the boat, and allows the boat to be suspended at a distance from the ends, where there will be a good width of beam to attach the cross-bars and to better prevent the boats rolling. The chains N N that the boat is lowered and suspended by are fastened to upper bars *h h*. When the davits are swung down to where the curved part rests on blocks *g g*, the upper section of the davits slides out of lower section by the weight of the boat as the windlass is unwound, as shown in Fig. 1, and dotted lines position 2 and 3. This arrangement is to allow the use of short davits that may be extended, and for the use on wharves with variable tides.

The windlass consists of two stands J J, fastened on the deck back of and near the boat, with the shafts K K' journaled on them. On shaft K is fastened rope-drums L M, which must be of different sizes. On shaft K' are two loose rope-guide wheels *m m*. On the upper ends of bars *h h* are the chains or ropes N N, one end of each chain being fast to block O, which has a sheave P. The rope *n* is fastened to and wound around drum L, then passing over guide-wheel *m*, and around sheave P, then over wheel *m'* onto drum M, where it is fastened, so that when the shaft K revolves the rope *n* unwinds from drum L, (through block O, to which the lowering-chains N N are fastened, lowering the boat such a distance as there is between the circumference of the drums L and M,) and it will wind up on drum M. The drum R can be any size required to

give the needed purchase to turn shaft K. The rope P' has one end fast to drum R and is wound around it, the other end being on top of boat ready for use. To raise the davits, crank O' and ratchet j, with lever on the ends of shaft K, are used. With the windlass described the needed purchase to raise and lower the boat is gained by the use of differential drums, the nearer the drums are of a size the more power being gained. As the drums are both fast on the same shaft, the rope is wound up from the opposite side of shaft from which it is unwound, and it cannot unwind or run down with any amount of weight suspended from the davits. The boat can be lowered by turning the crank O', or if a vessel is to be abandoned by all hands the boat can be lowered by one man, who goes down in the loaded boat, by easily pulling the rope P', which is fast to drum R. The boat can be stopped or started with the line at any point or other windlasses can be used in connection with the davits, or a tackle and fall; but I prefer to use the one described, as it can be made light and compact, no brakes, gears, or worms being needed. The windlass as arranged can be used for other purposes than here described.

The detaching mechanism consists of two detaching-bars and connections to them. (See Fig. 5.) One end of the detaching cross-bars S S is tubular and has slots r r on opposite sides near the end. t is a boss on one side and forms the fulcrum for a lever, and inside of bar S is sliding bolt u, having an oblong hole transverse through it. The lever V, pivoted at fulcrum, goes through bolt u and slots r r. Chains N N are extended in two parts from h h—one part fastened to lever V, the other part to bar S, near opposite end. To prevent the boat from swaying and rolling, it is suspended to the detaching cross-bars from socket-lugs T T, fastened on top and each side of the boat at four points, Figs. 4 and 5, the same distance apart as the davits and opposite each other. The chains N N should be such a length as when attached to bars S S they will form about an equal triangle. For locking the bars S S, (see Figs. 4 and 5,) shaft W is fastened lengthwise in the boat from bar S to S, having forked levers Y Y on each end, the ends of bars S S and sliding bolt u being formed in ball shape. The hand-lever Z is to operate the shaft W and lock and detach the cross-bars S S, and when the chain fastened on the lever V has a strain on it the sliding bolt u is forced outward, pressing the detaching-bars firmly into the socket T. The locking attachment prevents the slide-bolt u from detaching accidentally, the bolt u, when sliding out of socket T, making an instant detachment of the bars S S. When detached, the boat is clear of all the above appliances, except lugs, shaft, and levers. As the weight on the chains is held by the windlass, the davits need not be heavy. The boat is always the same distance from the top of the davits, and when the chains

are short and the detaching cross-bars are attached to the lugs on the boat, as described, the rolling attending to boats lowered in the usual way is prevented, and there will be but little sway or pendulum motion. When the davits are swinging down and are resting on the blocks g g, the boat is kept from the side of the vessel, the chance of getting stove being small. The hook f', pivoted onto davit D, hooks on a bolt on hand-lever f and secures the stanchions and chocks.

Operation: By pressing down on lever f the stanchions and chocks move out and release the boat. By revolving the drum-shaft with the crank o' or by pulling the line P' the davits swing out and down in a line, as shown by Fig. 1. The stanchions and chocks, being connected to the davits, go down with them, and when reaching the water a down movement on lever Z instantly detaches the boat. A boat can be easily and safely lowered forty to fifty feet a minute.

I am aware that davits have been made to swing from inboard on the deck of a vessel to outside of the rail, and also have been attached to the outside sides of a vessel to swing above and below the line of deck, and I do not claim such construction, broadly.

I am aware that windlasses have been used with differential drums; but I am not aware that they have ever been used as herein designed for the purpose proposed.

The boat cannot get away from the chocks when laid upon deck, as the chains are secured from the boat to the windlass, holding the davits and boat secure. A davit ten feet high on this plan will lower a boat twenty-five feet below the chocks.

This device can be used on wharves, bridges, and places where the instant use of a boat is desired.

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

1. In a davit for lowering and detaching boats, the combination, with the deck of a vessel, of the stanchions a a, hinged to the outside edge of deck A, with the rail b fastened to them, the releasing-chocks d d, having one end hinged to stanchions a a, the other end resting on chocks C C, and the lever f, pivoted to davit D, the rope or rod e, connecting lever f and stanchions a a, and the catch f', substantially as described and specified.

2. The swinging davits D D, made in two sections, the lower section forming an obtuse angle from the stands E E to the top and inboard side of boat at F and from F to G over the top of boat B, the part from F to G made of tubes having slots H H, combined with horizontal bars I I, forming a frame, and the upper section having upright bars h h, and cross-bars i i, combined with the lower section from the swinging davits, as described and specified.

3. In a boat-lowering device, in combination, the fixed stands J J, the shaft K, journaled in stands J J, and having a ratchet and

lever on one end and drum R on the other end, provided with a crank *o'*, the differential drums L and M on said shaft K, the shaft K', journaled in the upper part of the stands J J, the guide-wheels *m m*, turning loose on said shaft K', all arranged substantially as described, and for the purpose set forth.

4. In a boat-lowering device, the combination of the stands J J, drums L M R on shaft K, journaled in stands J J, loose guide-wheels *m m* on shaft K', davits D D, block O, and sheave-wheel P, fastened to said block O, chains N N, fastened to block O, and davits D D, with the rope *n*, one end of which is fastened to drum L, wound around and going from the inboard side of said drum over wheel *m*, around sheave P, then over wheel *m* and wound around and fastened on the outboard side of drum M, all being arranged substantially as described and shown.

5. In a boat-lowering device, the combination of the windlass provided with the differential drums L and M and the drum R, the davits D D, the chains N N, fastened to the davits D D and to block O, rope *n*, fastened to drums L and M and arranged to pass around sheave P and over guide-wheels *m m*, with the rope P', fastened to and wound around drum R and arranged to go from the inboard side of said drum R upward to the top of boat B, all arranged as described, and substantially for the purpose set forth.

6. In a boat-lowering device, the combination of the windlass provided with drums L, M, and R, and guide-wheels *m m*, the rope *n*, arranged, as described, on said drums L and M and passing over sheave P, fastened to block O, rope P', arranged, as described, on drum R, the davits D D, provided with bars *h h* sliding therein, and with chains N N, one end of each chain being fastened to block O, and then each chain extending to and fastened on tops of davit-bars *h h*, and down

from said bars in two parts to the cross-bars S S, and fastened near the end of said bars S S and forming a triangle with said bars S S, all arranged as described, and for the purpose specified.

7. In a boat-lowering device, the bar S, provided with a boss *t* and slot *r*, and having one end tubular, in which is arranged a sliding bolt *u*, in combination with a lever V, pivoted in said boss *t*, all substantially as described.

8. In a boat-lowering device, the boat B, and the four socket-lugs T, arranged and fastened, as described, on the sides of boat B, in combination with the bars S S, provided with a boss *t*, and a sliding bolt *u*, arranged in a tubular end of said bars S S and having a lever V, pivoted on the boss *t*, the said bars S S being ball-shaped at the ends and adjusted in the said socket-lugs T, all being arranged as described, and for the purpose set forth.

9. In a boat-lowering device, in combination, the boat B, the four socket-lugs T, adjusted, as described, on the sides of boat B, the cross-bars S S, arranged, as described, in the said socket-lugs T, the shaft W, fastened lengthwise of the boat B and having at each end a forked lever Y, operating with levers V V of the bars S S, the hand-lever Z, arranged on one end of shaft W and adjusted on side of the boat B and secured by the catch *z'*, all arranged substantially as described, and for the purpose set forth.

10. In a boat-lowering device, the four socket-lugs T T T T, fastened on each side of the boat opposite to each other at four points, all arranged as described and shown.

GEORGE M. BIRD.

Witnesses:

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ORLANDO E. BRISS.