

(No Model.)

H. E. BOWRING.
BOAT LOWERING APPARATUS.

No. 479,387.

Patented July 19, 1892.

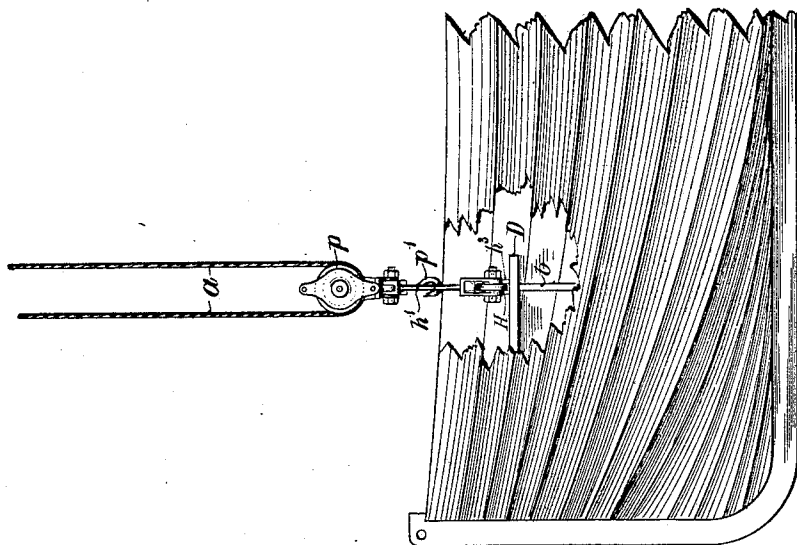


Fig. 2.

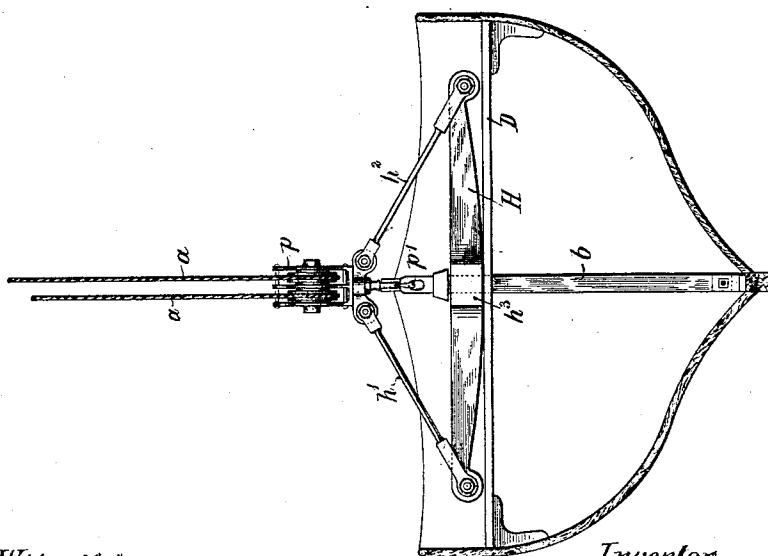


Fig. 1.

Witnesses.

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HENRY EDWARD BOWRING, OF EAST MOLESEY, ENGLAND.

BOAT-LOWERING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 479,387, dated July 19, 1892.

Application filed April 17, 1891. Serial No. 389,376. (No model.) Patented in England October 14, 1890, No. 16,364.

To all whom it may concern:

Be it known that I, HENRY EDWARD BOWRING, gentleman, a subject of the Queen of Great Britain, residing at Mole Bank, East Molesey, in the county of Surrey, England, have invented Improvements in Boat-Lowering Apparatus, (for which I have received Letters Patent in Great Britain, No. 16,364, dated October 14, 1890,) of which the following is a specification.

My invention relates to improvements in the falls of boat-lowering apparatus; and its object is to diminish the amount of swinging to which boats hanging from the falls are liable up to the moment of freeing the falls from them. In carrying it into effect I combine a horizontal bar with the top of the suspension-bar, to which it is made fast in any convenient way. Each end of this horizontal bar is coupled by a rod to the fall at a point a short distance above the point of suspension.

Referring to the accompanying drawings, Figure 1 is a transverse sectional elevation of a boat fitted with a lowering apparatus made according to my invention. Fig. 2 is a side elevation corresponding with Fig. 1. A portion of the bow is broken away to allow the invention to be seen.

b is the suspension-bar, which is passed downward through the thwart and made fast to the bottom of the boat, as heretofore, and p is a two-wheel pulley-block, through which the fall a is rove, and p' its hook, adapted to engage with the top of the suspension-bar for the purpose of carrying it. This hook, being the terminal of the fall, is hereinafter referred to as the "point of suspension." It is a matter of indifference, as far as this part of my invention is concerned, whether the fall be a single or double one. In either case its terminal will be the point of suspension.

D is the thwart.

H is the horizontal bar.

In respect of position of the horizontal bar three things are necessary: First, it is as near the top of the suspension-bar as possible; second, it is always at right angles with it; third, the suspension-bar bisects the horizontal bar. The two bars are joined together at the bisection in any way, provided that it confers

sufficient rigidity on their junction to always maintain them in the relative positions described above.

The figures show the suspension-bar as passing through an eye which is formed in an enlargement h^3 in the middle of the horizontal bar. $h' h^2$ are a pair of rigid rods, which respectively connect the outer ends of the bar H to the fall above the point of suspension.

The bar H and the two rods $h' h^2$ constitute a triangle, the apex of which is in the fall. The point of suspension is in or nearly in the center of such triangle.

The operation of the device constructed as above described is as follows: If the boat is unevenly laden—say on the right-hand side of the suspension-bar—the tendency will be to depress that side and to raise the opposite one. This tendency will, however, be prevented by the rigid rods h' and h^2 , which will prevent the relative positions of the bar H (which is the base of the triangle) and the apex of the triangle from being altered; or, in other words, because the two rods $h' h^2$, which are the sides of the triangle, will resist both compression and tension and the horizontal bar H will be kept in a horizontal position.

I claim—

In boat-lowering apparatus, the combination of fall, suspension-bar, point of suspension at the end of the fall adapted to engage with and carry the suspension-bar, a horizontal bar bisected by the suspension-bar and joined to it near its top at right angles, and a pair of rigid rods connecting the respective outer ends of the horizontal bar to the fall above the point of suspension, as set forth.

In testimony whereof I have hereunto affixed my signature, in presence of two witnesses, this 10th day of March, 1891.

HENRY EDWARD BOWRING.

Witnesses:

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