P. M. WOTTON.

FALLS FOR RAISING AND LOWERING LIFE BOATS.

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1,126,153. Patented Jan. 26, 1915.

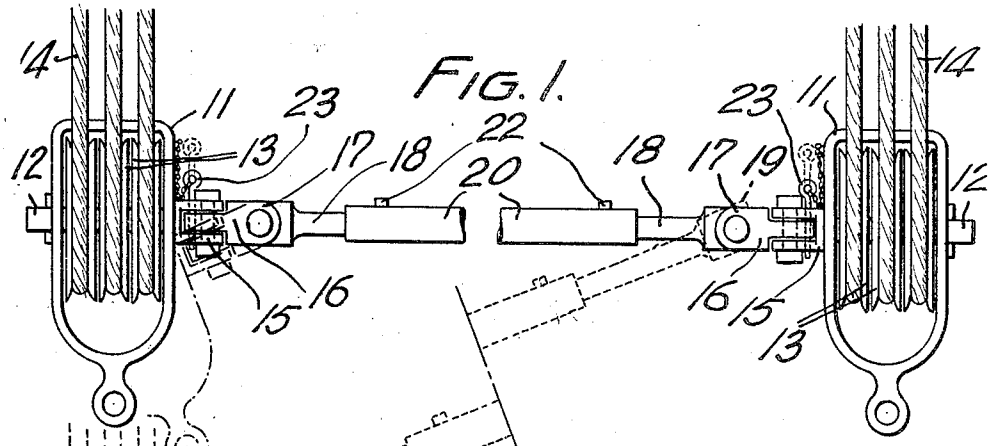


FIG. 1.

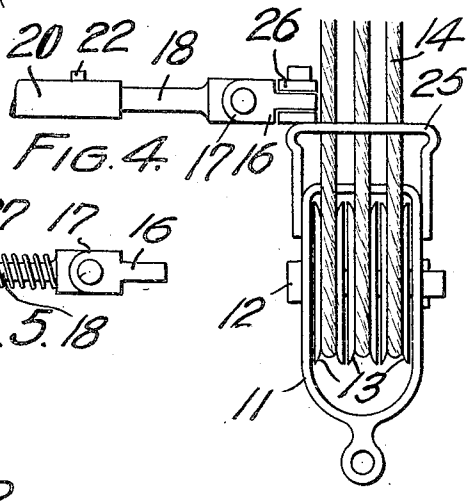


FIG. 4.

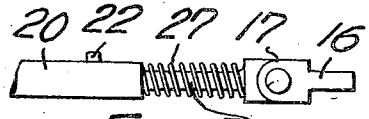


FIG. 5.

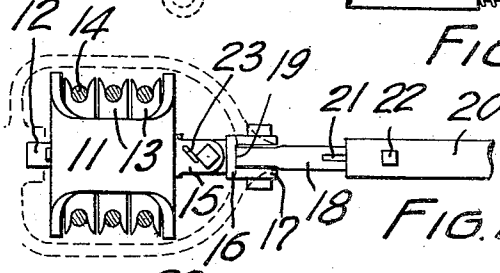


FIG. 2.

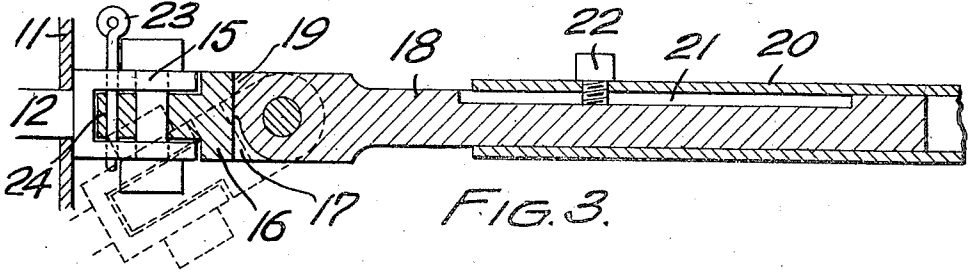


FIG. 3.

Witnesses

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FALLS FOR RAISING AND LOWERING LIFE-BOATS.

1,126,153. Specification of Letters Patent. Patented Jan. 26, 1915.

Application filed December 1, 1913. Serial No. 804,063.

To all whom it may concern:

Be it known that I, PETER M. WOTTON, a subject of the King of Great Britain, and resident of the city of Bristol, in the county of Somerset, England, have invented new and useful Improvements in Falls for Raising and Lowering Life-Boats, of which the following is a full, clear, and exact description.

This invention relates to improvements in falls for raising and lowering the life-boats of vessels and the primary object is to provide means to hold the lower fall blocks against turning over when the falls are being raised and raveling the ropes.

A further object is to provide means for maintaining the passengers equally distributed to port and starboard during loading and lowering of the boat.

Another object is to provide a support for persons taking their places in the boat.

The style of fall generally used consists of a pair of blocks each having three sheaves so that there are seven strands of rope in the fall. For various reasons the last turn of rope is taken over the remote, or outside sheaves of a pair of falls. When a boat has been lowered and it is desired to haul up the fall light the lift comes on the outside sheaves so that the blocks have a tendency to tip toward one another. This is due to the great length and weight of rope which prevents the lift being distributed equally to all sheaves. In practice the result, invariably, is that the lower block turns over and tangles the ropes. Further hoisting only makes the tangle worse and as there are from 300 to 500 feet of rope in each fall, on an ocean going vessel, the untangling is a big undertaking. Experiment has shown that a weight of 250 pounds is not sufficient to hold the block in proper position.

This invention aims to overcome the disadvantage by providing a substantially rigid connection between the two lower blocks. This connection is in the form of a telescoping member connected at each end with a block, a knuckle joint being placed between each block and the telescopic member to enable the blocks to swivel when a boat is swung out and to permit limited movement of the blocks if one end of the boat is lowered faster than the other, but to absolutely prevent the blocks from turning over during raising of the falls.

In the drawings which illustrate the invention:—Figure 1 is a side elevation of the device. Fig. 2 is a partial plan view. Fig. 3 is an enlarged vertical longitudinal section. Fig. 4 is a partial elevation of the device applied to a slightly different form of block. Fig. 5 is a fragmentary view showing a modification.

Referring more particularly to the drawings 11 designates the lower fall blocks and 12 the spindle of the block upon which the sheaves 13 run. The last bend of rope, that is the one to which the hoisting force is applied, is designated 14.

In the preferred form of device each of the spindles 12 is provided with a bifurcated head 15, the slot thereof being arranged in a horizontal plane. A knuckle joint 16 is pivotally mounted between the bifurcations and swings in a horizontal plane. The adjacent ends of the knuckles are bifurcated at 17 and have pivotally mounted between their bifurcations one end of a rod 18, adapted to swing in a vertical plane. These bars are each formed with a lug 19 arranged to abut the knuckle member and limit the bar's angle of movement to approximately 90°. The free ends of the bars 18 are slidably mounted in opposite ends of a tube 20, each bar having a groove 21 formed therein engaged by a set screw 22 in the tube. These set screws act as limit stops and prevent disengagement of the tube and bars. A pin 23 is provided passing through each bifurcated spindle head 15 and through an eye 24 in the knuckle, when the knuckle and spindle are in line.

In Fig. 4 the device is shown applied to a table block. In this form the block is provided with a table 25, the purpose of which is to hold the rope on the sheaves in the event of the block inverting. A bifurcated member 26 may be attached to the table, corresponding to the pin 12. It will, however, be obvious that the knuckle may be attached to the spindle in this form as in any other. In fact, attachment to the pin is always preferable as it places the weight of the bar lower on the block and reduces the tendency of the block to run around in the rope. The alternative form shown in Fig. 5 embodies the use of a spring 27 which acts as a buffer and may be used on the bars 18, as shown, or in any other desired manner.

The operation of the device is extremely simple. The joint connection to the spindles

allows the blocks to swing freely in a horizontal plane through an angle of more than 180° when the boats are being swung out. The joints between the knuckles and bars allow one block to be lowered more than another, as frequently occurs when lowering boats. When the blocks have been disengaged from the lowered boat and are being raised, the lugs 19 engage the knuckles and hold the blocks against turning over, as will be clearly seen from Figs. 1 and 3. The telescopic connection between the blocks elongates when the blocks are lowered unequally and when the boats are being swung out and prevents the blocks being dragged above the keel and will prevent passengers throwing themselves from side to side of the boat if it rocks during lowering. It also acts as a hand rail when passengers are taking their places. After a boat has been swung out and the blocks have assumed their proper relation to the bar, as shown in the drawings, the pin 23 will drop into the eye 24 to hold the block against oscillation.

While the preferred form of the device has been shown, also the most simple, it is obvious that numerous changes may be made in the details of construction as long as the connection between the blocks remains elongatable and rigid against flexion. The double joints shown may be replaced with a ball and socket or any other suitable form of joint. The last bend of the fall ropes have been shown in the drawings on the remote faces of the blocks, so that the tendency is for these blocks to tilt upwardly and inwardly, and the cam is therefore arranged to resist this movement. If the last bend of the fall ropes is on the adjacent sheaves of the blocks, the cam arrangement may be the same as shown or may be inverted, or the joint may be on the outer side of the block and connected to the bar by means of a yoke surrounding the block, as indicated in dotted lines, Fig. 2.

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

1. In a device of the character described, the combination with fall blocks of a telescoping member connecting said blocks, and joints between the ends of said telescoping member and blocks arranged to give limited movement to the blocks and to hold same against turning over under unequal tension of the fall ropes.

2. In a device of the character described, the combination with a pair of fall blocks of a telescopic bar extending between said blocks, and double joints between the ends of said bar and the blocks arranged to give the blocks free movement in a horizontal plane and limited movement in a vertical plane.

3. A device of the character described, comprising the combination with fall blocks of a telescopic bar arranged between said blocks, joints between said bar and blocks giving the blocks free movement in a horizontal plane and limited movement in a vertical plane, and means limiting the telescoping action of said bar.

4. A device of the character described, comprising the combination with fall blocks of a bifurcated member carried by each block, a bifurcated knuckle pivoted between the bifurcations of each of said members and having free movement in a horizontal plane, a grooved bar pivoted at one end between the bifurcations of the knuckle and having movement in a vertical plane, a cam on said bar engaging between the knuckle bifurcations and limiting the movement of said bar, a tube slidably engaging said bars at its opposite ends, stops carried by the tube engaging in the grooves of said bars, and means for locking the blocks against movement in a horizontal plane relative to the bar.

5. A device of the character described, comprising the combination with fall blocks of an elongatable connection between said blocks arranged to give the blocks free movement in a horizontal plane and limited movement in a vertical plane, and arranged to hold the blocks against upsetting by unequal tension of the fall ropes.

In witness whereof, I have hereunto set my hand, in the presence of two witnesses.

PETER M. WOTTON.

Witnesses:
S. R. W. ALLEN,
G. M. MORELAND.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."