Dec. 29, 1936. G. C. PASSEK 2,066,049

ADJUSTABLE CLAMP DEVICE FOR ROPE AND THE LIKE

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FIG. I.

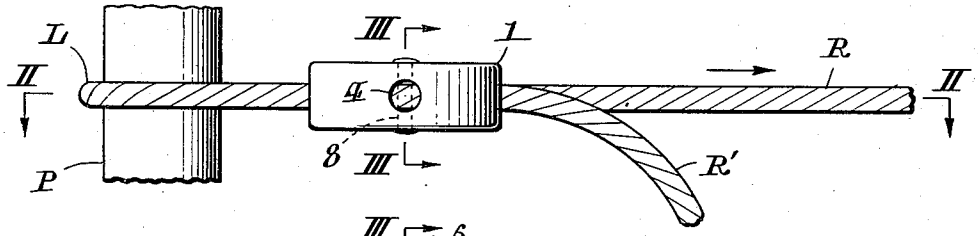


FIG. II.

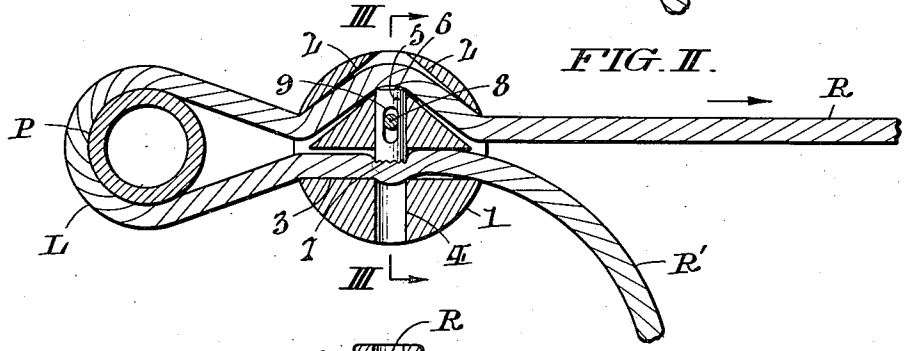


FIG. III.

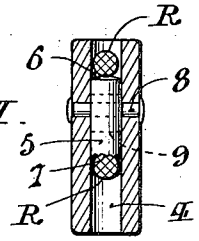


FIG. IV.

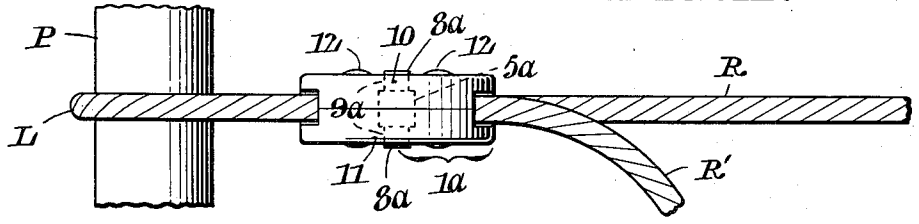
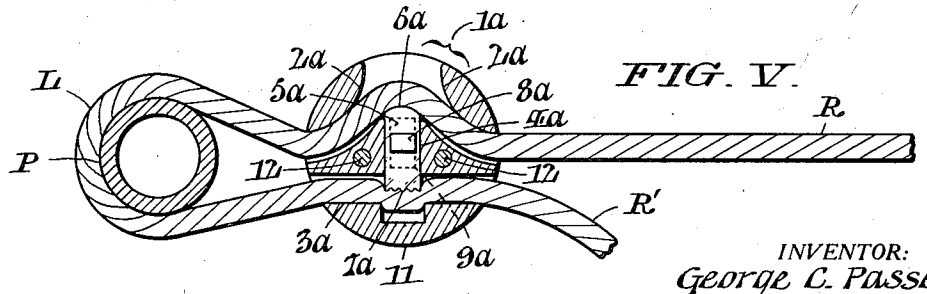


FIG. V.



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FIG. VI.

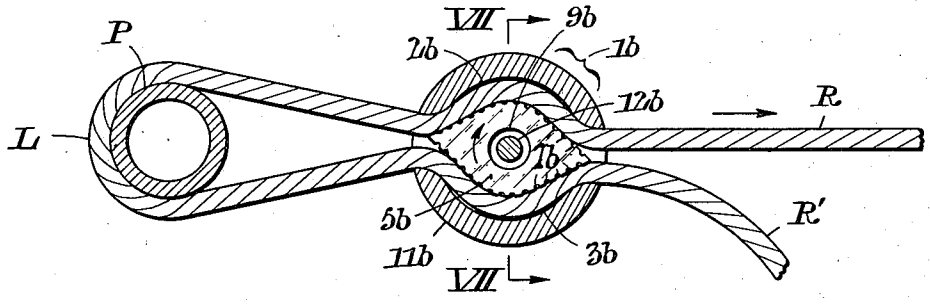


FIG. VIII.

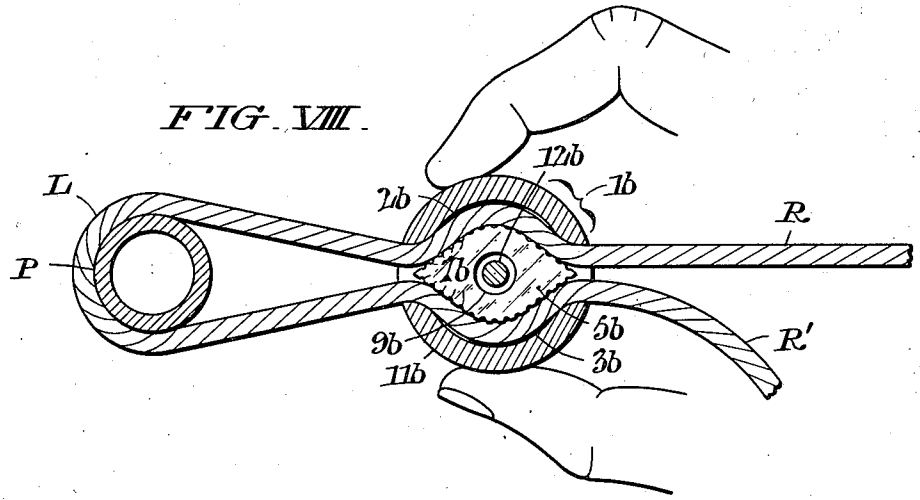
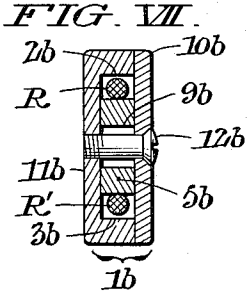


FIG. VII.



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UNITED STATES PATENT OFFICE

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ADJUSTABLE CLAMP DEVICE FOR ROPE AND THE LIKE

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Application December 12, 1935, Serial No. 54,030

11 Claims. (Cl. 24—136)

This invention relates to clamp devices designed for taking up slack in ropes, cords, cables, wires and the like used as wash lines, sail lines on boats or ships, guys, radio antennae, etc.

My invention is directed toward the provision of a clamp device of the kind referred to which is simple and inexpensive in construction; which is easy to adjust; and which resists displacement in adjusted positions when the rope, cord or cable is subjected to tension or strain.

In the drawings, Fig. I is a view showing my improved adjustable clamp device in association with a rope which is to be maintained taut.

Fig. II is a longitudinal sectional view taken as indicated by the arrows II—II in Fig. I.

Fig. III is a cross sectional view taken as indicated by the arrows III—III in Figs. I and II.

Figs. IV and V are views corresponding respectively to Figs. I and II showing an alternative embodiment of my invention.

Figs. VI and VII are views corresponding to Figs. II and III showing another alternative embodiment of my invention; and

Fig. VIII is a view like Fig. VI showing how adjustments are made to take up the slack in the rope.

Referring in greater detail first to Figs. I–III of these illustrations, the form of clamp device there shown comprises an integral block 1 which is of flat circular configuration with spaced unidirectional passages 2 and 3 through it, one of these passages serving for a strand exemplified as a rope R and the other for a loop retroversion R′ of said rope. The passage 2, it will be noted, is angularly offset outwardly relative to the center of the block 1; while the passage 3 is straight.

Extending crosswise of the passages 2 and 3 in the same plane with the latter is another passage or bore 4 which extends diametrically through the block 1 and which contains a floating clamp element in the form of a pin 5 whereof the end 6 is rounded and projects into the passage 2 to engage the rope or cable R, and whereof the other end is roughened as at 7 for capacity to effectively grip the retroversion R′ of said rope in the passage 3. A transverse rivet 8 fixed in the block 1 and extending through a longitudinal slot 9 in the clamp pin 5 constitutes a retaining means to prevent the loss of said pin when the device is removed from the rope.

In the use of the device, the loop L in the rope R is engaged about a fixture, here indicated as a post P. As the rope R is tensioned or stressed in the direction of the arrow in Figs. I and II, the outwardly-deflected portion of the rope within the passage 2 tends to straighten, and thereby urges the pin 5 endwise in its guideway 4 toward the retroverted portion R′ of the rope in the passage 3 as shown in Fig. II to clamp it and thereby prevent displacement of the block 1. The block 1 may be slid in either direction along the rope R, this being permitted through slacking of the diverted portion of the rope in the passage 2 and consequent easement of the pressure of the pin 5 upon the retroversion of the rope R′ in the passage 3. Taking up of the slack in the rope merely entails pulling on the loose end R′ when the pin 5 will yield to upward displacement in the block 1 to allow reeving of the rope through the passage 2 with the post P acting as a directional guide. The operation of the device is thus quick and sure with avoidance of annoying entanglements as when complicated knots are employed as ordinarily in securing ropes. With the device once adjusted it is immune against disturbance under pull or strain upon the rope by the effective clamping action of the pin 5.

In the alternative embodiment of my invention shown in Figs. IV and V, the block 1*a* is centrally split, i. e. formed with two counterpart sections respectively designated 10 and 11 which are rigidly connected by a pair of screws 12. Jointly, the two block sections 10 and 11 afford substantially uni-directional spaced passages 2*a* and 3*a* for the rope R and the loop retroversion R′ thereof. As in the first embodiment, a floating member in the form of a pin 5*a* capable of free movement in a conformative receiving guideway 4*a* at the center of the block 1*a*, constitutes the clamp member, the rounded end 6*a* of said pin projecting into the outwardly-offset passage 2*a* and the roughened end 7*a* thereof into the passage 3*a*. In this instance, the retaining pin 5*a* is formed with lateral projections 8*a* which engage retaining slots 9*a* respectively in the block components 10 and 11.

The alternative embodiment of my invention illustrated in Figs. VI, VII and VIII comprises a block 1*b* with an internal circular hollow which is open to the exterior at diametrically opposite points. Disposed within the hollow of the block 1*b* is a rotatively floating clamp or wedge element 5*b* which serves to set apart the passages 2*b* and 3*b* respectively for the rope R and the loop retroversion R′ thereof and which is provided with toothed or otherwise roughened edges 7*b* for gripping both the rope and its retroversion. As shown, the block 1*b* is made in two parts 10*b*, 11*b* which are secured together by an axial screw 12*b*, the floating clamp element 5*b* being provided

with a relatively large clearance opening 9b so as not to be restrained in its floating action by said screw.

As tension or strain is placed on the rope R in the direction indicated in Fig. VI, clockwise movement is induced in the clamp element 5b with the result that both said rope and its retroversion R' are effectively engaged by the roughened edges 7b and clamped against the inner surfaces of the block 1b to hold the latter against displacement on the rope.

To adjust the rope, the block 1b may be slid in either direction along the rope R as suggested in Fig. VIII incident to which said rope tends to turn the clamp element 5b in one direction while the retroversion R' tends to rotate it in the opposite direction. The clamp element thus assumes a neutral position without inducing any restraint to the movement of the block 1b along the rope.

If desired, or found convenient in practice, the components or sections 10b and 11b of the block 1b may be made as counterparts like the block components 10 and 11 of Figs. IV and V.

Having thus described my invention, I claim:

1. An adjusting device for rope and the like operative in the manner described, comprising an integrally-formed block with spaced uni-directional passages therethrough respectively for the rope and a loop retroversion thereof; and a clamp element in the form of a pin free to slide endwise in a crosswise guideway within the block, said pin having a rounded end projecting into the rope passage so as to be engaged by the rope, and a roughened end adapted to penetrate the retroversion of the rope in the other passage.

2. An adjusting device for rope and the like operative after the manner described, comprising a block with spaced uni-directional passages therethrough respectively for the rope and a loop retroversion thereof, the rope passage being centrally offset outwardly; and a clamp element in the form of a pin free to slide endwise in a crosswise guideway within the block, said pin having a rounded end projecting into the outward offset of the rope passage for engagement by the rope, and a roughened end adapted to penetrate the retroverted portion of the rope in the other passage.

3. An adjusting device for rope and the like operative in the manner described, comprising a block with spaced uni-directional passages therethrough respectively for a rope and a loop retroversion thereof; a clamp element in the form of a pin free to slide endwise in a guideway extending crosswise of said passage in the same plane therewith and open at the exterior of the block, said pin having a rounded end projecting into the rope passage so as to be engaged by the rope, and a roughened end adapted to penetrate the retroversion of the rope in the other passage; and means for retaining the clamp pin in the block.

4. An adjusting device for rope and the like operative in the manner described, comprising a block with spaced uni-directional passages therethrough respectively for a rope and a loop retroversion thereof; a clamp element in the form of a pin free to slide endwise in a guideway extending crosswise of said passage in the same plane therewith and open at the exterior of the block, said pin having a rounded end projecting into the rope passage so as to be engaged by the rope, and a roughened end adapted to penetrate the retroversion of the rope in the other passage; and a lateral projection on the clamp pin engaging a retaining slot in the block.

5. An adjusting device for rope and the like operative in the manner described, comprising a block with spaced uni-directional passages therethrough respectively for a rope and a loop retroversion thereof; a clamp element in the form of a pin free to slide endwise in a guideway extending crosswise of said passage in the same plane therewith and open at the exterior of the block, said pin having a rounded end projecting into the rope passage so as to be engaged by the rope, and a roughened end adapted to penetrate the retroversion of the rope in the other passage; and a retaining member fixed in the block and passing through a longitudinal slot in said clamp pin.

6. An adjusting device for rope and the like operative in the manner described, comprising a centrally-split block with counterpart components jointly affording uni-directional passages through said block for a rope and a loop retroversion thereof; and a floating clamp element in the form of a pin free to slide endwise in a crosswise guideway within the block, said pin having a rounded end projecting into the rope passage so as to be engaged by the rope, and a roughened end adapted to penetrate the retroversion of the rope in the other passage.

7. An adjusting device for rope and the like operative in the manner described, comprising a split block with spaced uni-directional passages therethrough respectively for the rope and a loop retroversion thereof; a floating clamp element in the form of a pin free to slide endwise in a guideway extending crosswise of said passages in the same plane therewith and open at the exterior of the block, said pin having a rounded end projecting into the rope passage so as to be engaged by the rope, and a roughened end adapted to penetrate the retroversion of the rope in the other passage; means for securing together the components of the block; and a retaining member anchored in the block and extending transversely through a clearance slot in the clamp pin.

8. An adjusting device for rope and the like comprising a block with spaced uni-directional passages therethrough for the rope and a loop retroversion thereof; a floating clamp element internally of the block between the passages; and means to determine a directional component of movement of the floating clamp element transversely of the passages incident to tensioning of the rope.

9. An adjusting device for rope and the like comprising a block with an open hollow extending through it; and a clamp element of elliptic configuration with rope-engaging edges, said element setting apart within the hollow of the block, spaced passages for the rope and a loop retroversion thereof, and having the capacity to rotatively float so that its position may be controlled by the rope passing through the block.

10. An adjusting device for rope and the like comprising a block with a circular hollow open to the exterior at diametrically-opposite points; and a clamp element of elliptic configuration with roughened rope-engaging edges, said element setting apart spaced channels respectively for the rope and a loop retroversion thereof and having the capacity to rotatively float with its major axis in line with the open ends of said hollow so that its position may be controlled by the rope passing through the block.

11. An adjusting device for rope and the like

comprising a split block with an open hollow extending through it; a clamp element of elliptic configuration with roughened rope engaging edges, said element setting apart spaced channels respectively for the rope and a loop retroversion thereof and having the capacity to rotatively float with its major axis in line with said hollow so that its position may be controlled by the rope passing through said block; and a securing means for the block components extending through a clearance opening in said clamp element.

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