May 4, 1948. A. H. PELTIER 2,440,972

MOORING DEVICE

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Fig. 1.

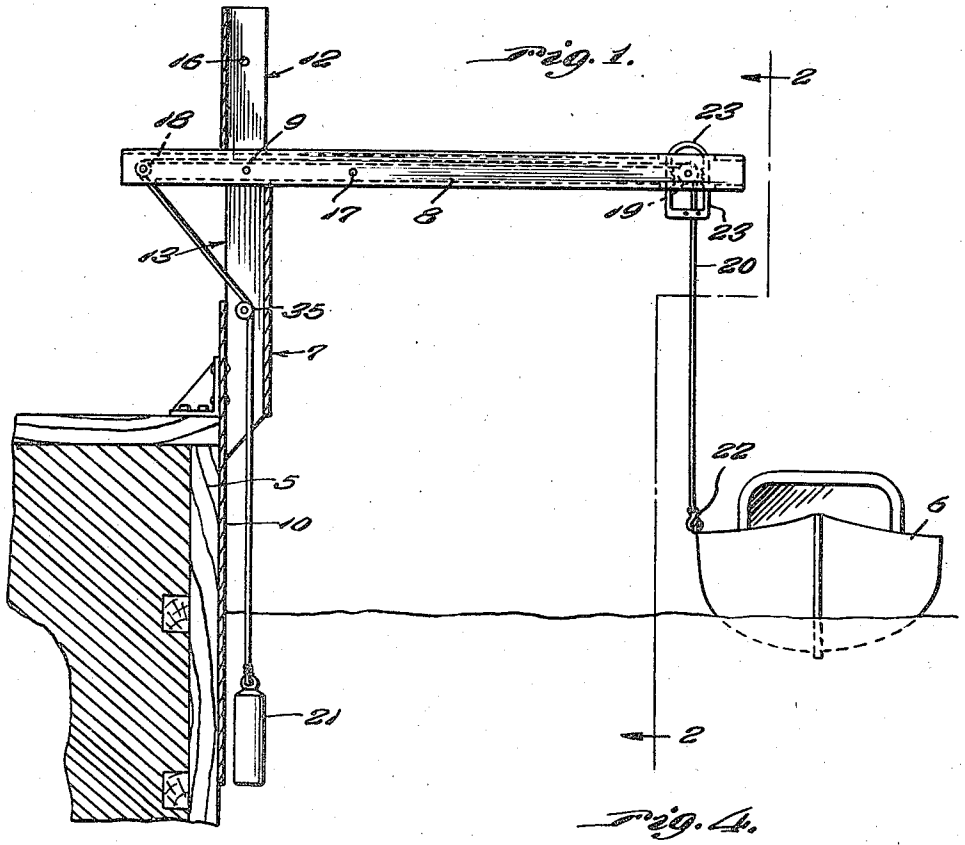


Fig. 4.

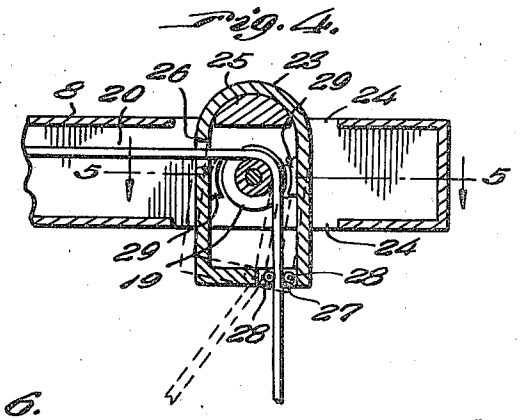


Fig. 5.

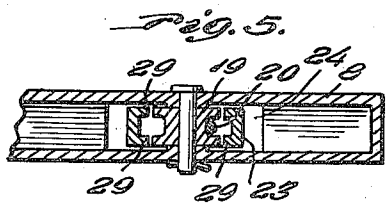
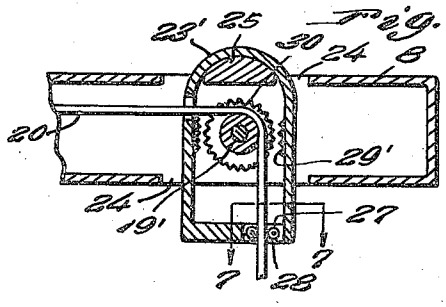


Fig. 6.



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MOORING DEVICE

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Fig. 2.

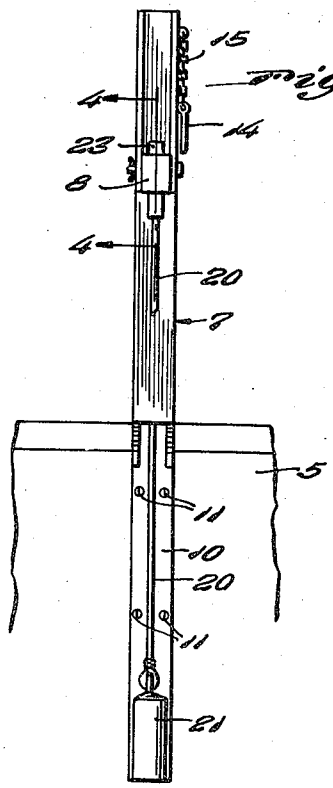


Fig. 3.

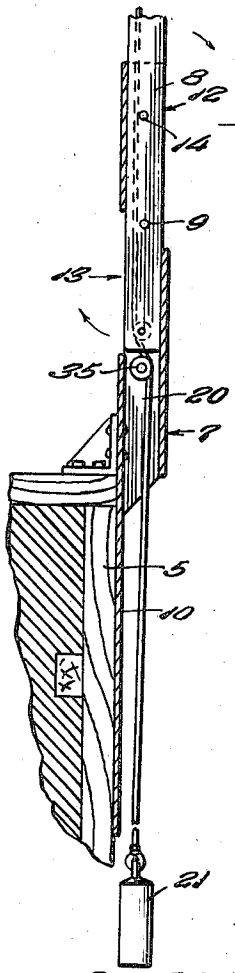


Fig. 7.

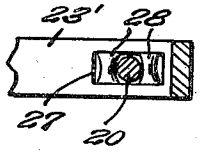


Fig. 8.

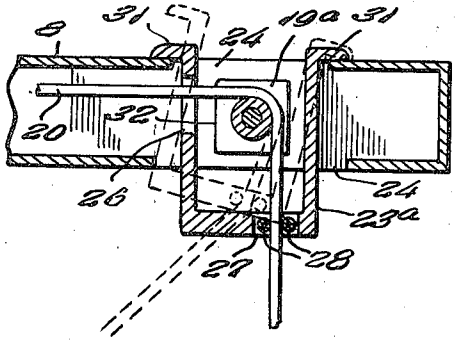
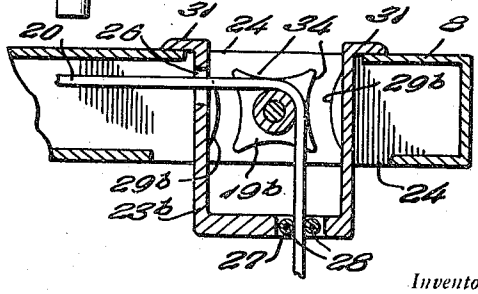


Fig. 9.



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Patented May 4, 1948

2,440,972

UNITED STATES PATENT OFFICE

2,440,972

MOORING DEVICE

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Application June 28, 1946, Serial No. 680,044

6 Claims. (Cl. 114—230)

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This invention relates to a device for mooring a small boat to a bulkhead so as to keep the boat away from the latter and thereby prevent waves from bumping the boat against the bulkhead with consequent scraping of and damage to the boat hull.

The present invention contemplates a device of the above kind embodying a post fixed to the face of and projecting above the bulkhead, an arm pivoted between its ends to the upper portion of the post to swing between a vertical inoperative position and a horizontal operative position, pulleys respectively journalled substantially on the inner and outer ends of the arm, a mooring line having a weight at one end suspended for vertical movement in front of the bulkhead and having means to connect its other end to the boat to be moored, said line extending between and over said pulleys, and a brake loop mounted on the outer end of said arm for tilting laterally in a plane parallel with the arm, said brake loop embracing the adjacent outer pulley and having the line extended through the bottom thereof so that movement of the boat toward or from the bulkhead from a predetermined position will cause the line to tilt the brake loop into braking relation to said outer pulley.

A further object of the present invention is to provide a mooring device of the above kind which is comparatively simple in construction, easy to install and use, and efficient in operation.

A still further object of the invention is to provide a mooring device of the above kind wherein the weight acts to swing the arm to the inoperative position upon disconnection of the line from the boat.

More specific objects and features of the invention will become apparent from the following description when considered in connection with the accompanying drawings, in which—

Figure 1 is a view of a mooring device constructed in accordance with the present invention and as it appears in use, the device being partly in side elevation and partly in vertical section.

Figure 2 is a sectional view taken on line 2—2 of Figure 1.

Figure 3 is a fragmentary view of the device as shown in Figure 1 with the arm raised to inoperative position and the boat omitted.

Figure 4 is an enlarged fragmentary longitudinal section through the outer end portion of the arm, taken on line 4—4 of Figure 2.

Figure 5 is a fragmentary horizontal section taken on line 5—5 of Figure 4,

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Figure 6 is a view similar to Figure 4 showing a modification.

Figure 7 is an enlarged fragmentary section taken on line 7—7 of Figure 6.

Figure 8 is a view similar to Figure 4 showing another modification, and

Figure 9 is a view similar to Figure 4 showing still another modification.

Referring in detail to the drawings, 5 indicates a bulkhead to which the small boat 6 is adapted to be moored by means of the mooring device constituting the present invention.

The mooring device shown in Figures 1 to 5 inclusive embodies a post 7 fixed to the face of and projecting above the bulkhead 5. An arm 8 is pivoted between its ends at 9 to the upper portion of the post 7 so as to swing between a vertical inoperative position as shown in Figure 3 and a horizontal operative position as shown in Figures 1 and 2. The pivot 9 is located nearer the inner end of arm 8 than the outer end thereof as shown.

The post 7 embodies means to limit swinging of the arm 8 to the inoperative and operative positions. Preferably, the post 7 consists of a tubular member having all but one wall removed at its lower end, said one wall 10 being flatly secured to the bulkhead 5 by means of screws 11 or the like. Also, the front wall of the tubular member is removed above the pivot 9, while the rear wall thereof is removed for a distance below said pivot 9. This provides clearance at 12 and 13 so that the inner portion of arm 8 may swing downwardly and outwardly against the front wall of post 7 while the outer portion of said arm 8 swings upwardly and inwardly against the inner or rear wall of said post to limit swinging movement of the latter to its vertical inoperative position. Also, the adjacent edges of the outer or front and inner or rear walls of post 7 are engaged by the arm 8 to limit swinging movement of the latter to its operative horizontal position. Means is provided to releasably secure the arm 8 in its inoperative position, which means may consist of a pin 14 suspended on one side of the upper portion of post 7 by a chain 15 or the like and adapted to be removably inserted through openings provided at 16 in the post 7 and at 17 in the arm 8, the opening 17 being adapted to align with the openings 16 when the arm 8 is vertically positioned. Pulleys 18 and 19 are respectively journalled substantially on the inner and outer ends of the arm 8, and a mooring line 20, which has a weight 21 at one end thereof and means 22 to connect its other end to the boat 6, is extended

between and over the pulleys 18 and 19 so that the weight 21 is suspended for vertical movement in front of the bulkhead 5 and the end portion of said line 20 which is connected to the boat 6 depends from the outer end portion of arm 8. A brake loop 23 is mounted on the outer end of arm 8 for tilting laterally in a plane parallel with said arm, and this brake loop embraces the adjacent outer pulley 19 and has the line 20 extended through the bottom thereof so that movement of the boat 6 toward or from the bulkhead 5 from a predetermined position shown in Figure 1, will cause the line 20 to tilt the brake loop 23 into braking relation to said outer pulley 19 as illustrated by dotted lines in Figure 4. As the means 22 cannot pass upwardly through the bottom of the brake loop 23, it will be apparent that weight 21 will act to swing the arm 8 to the inoperative vertical position thereof upon disconnection of the line 20 from the boat 6.

As shown, the arm 8 is preferably of tubular form and has the pulleys 18 and 19 journalled therein, the line 20 being extended through said arm. Also, opposed walls of arm 8 are slotted at 24 to receive the brake loop 23, a cross-piece 25 being centrally secured in one of the slots 24 to tiltably retain and suspend the brake loop 23 in place. The brake loop 23 has a side opening 26 and a bottom opening at 27 through which the line 20 is extended, anti-friction rollers 28 being preferably provided within the opening 27 for the passage of the line 20 therebetween. In Figures 1 to 6 inclusive, the brake loop 23 is in the form of a closed loop having a rounded end engaging a correspondingly rounded surface of the cross-piece 25. Also, the side members of brake loop 23 have brake shoes 29 which are brought into engagement with the peripheries of the side flanges of pulley 19 when said brake loop 23 is tilted. More specifically, the brake shoes 29 on one side of loop 23 are engaged with the flanges of pulley 19 when the loop 23 is tilted in one direction, and those at the other side of loop 23 are engaged with said pulley 19 when the loop 23 is tilted in the other direction. In the embodiments of Figures 1 to 5 inclusive, the flanges of pulley 19 are smooth, as are also the arcuate faces of the brake shoes 29 which engage the same.

In the embodiment of Figure 6, the flanges of pulley 19' are toothed as at 30, and the brake shoes 29' are in the form of a series of teeth provided on opposite sides of the brake loop 23' for engagement with the teeth of the pulley 19'. Otherwise, the construction of Figure 6 is similar to that of Figure 4, and remaining parts are indicated by similar reference characters in both views.

In the embodiments of Figures 8 and 9, the brake loops 23a and 23b, respectively, are of U-shape and have outwardly directed extensions 31 on the ends thereof arranged to rest upon the wall of arm 8 at opposite sides of one of the slots 24. Also, in Figure 8, the loop 23a has flat side members engageable with flat faces 32 provided on the flanges of pulley 19a. In Figure 9, the convex brake shoes 29b provided on opposite sides of the brake loop 23b are engageable in concave faces 34 provided on the flanges of pulley 19b. It will be apparent that the brake loops 23a and 23b are tiltable in the manner described with respect to the brake loop 23, one or the other of the extensions 31 rising from the adjacent wall of arm 8 as indicated by dotted lines in Figure 8.

In using the mooring device, the arm 8 is simply released and swung to its horizontal operative position, whereupon the line 20 is pulled downwardly and connected at one end to the boat 6 by the connecting element 22. The weight 21 keeps the line 20 taut at all times, and so long as the boat 6 remains in the position of Figure 1 with the outer end portion of the line 20 vertical, said boat may freely rise and fall, the weight 20 moving correspondingly to maintain the line in its taut condition. However, should the boat 6 move toward or from the bulkhead 5 from the position of Figure 1, the outer end portion of line 20 will cause the brake loop to be correspondingly tilted, thereby engaging the pulley 19 to prevent rotation of the latter. Due to the noticeable frictional engagement of line 20 in the groove of pulley 19, longitudinal movement of line 20 is resisted to the desired extent and the boat 6 is kept away from the bulkhead 5 so that it will not bump against the latter and have its hull scraped or damaged. When the line 20 is disconnected from the boat 6, the weight 21 acts to swing the arm 8 to its inoperative position, the element 22 moving upwardly into engagement with the bottom of the brake loop.

From the above, it will be seen that I have provided a mooring device which may be economically manufactured, readily installed and conveniently used. The form of brake loops shown in Figures 8 and 9 has the advantage of eliminating the cross-piece 25 so that it is only necessary to install the outer pulley after the brake loop has been inserted to its proper position in the slots at 24. To properly guide the line 20 after it passes downwardly from the inner end of arm 8, a further guide pulley 35 is journalled in the post 7 at a point where it will be directly below the inner end of arm 8 when the latter is raised. Further modifications and changes in detail are contemplated, such as fall within the scope of the invention as claimed.

What I claim is:

1. A device for mooring a small boat to a bulkhead, comprising a post fixed to and projecting above the bulkhead, an arm pivoted between its ends to the upper portion of said post to swing between a vertical inoperative position and a horizontal operative position, pulleys respectively journalled substantially on the inner and outer ends of said arm, a mooring line having a weight at one end suspended for vertical movement in front of the bulkhead and having means to connect its other end to the boat to be moored, said line extending between and over said pulleys, and a brake loop mounted on the outer end of said arm for tilting laterally in a plane parallel with the arm, said brake loop embracing the adjacent outer pulley and having the line extended through the bottom thereof so that movement of the boat toward or from the bulkhead from a predetermined position will cause the line to tilt the brake loop into braking relation to said outer pulley.

2. The construction defined in claim 1, wherein said post embodies means to limit swinging of the arm to such operative and inoperative positions.

3. The construction defined in claim 1, together with means to releasably secure the arm in said inoperative position.

4. The construction defined in claim 1, in combination with means to guide the inner portion of said line in a direction to extend downwardly

directly below the inner end of said arm when the latter is in its inoperative position, whereby said weight acts to swing the arm to the inoperative position upon disconnection of the line from the boat.

5. The construction defined in claim 1, wherein said arm is of tubular form and has the pulleys journalled therein, said line extending through said arm, said arm having transverse slots in its outer end, said brake loop being extended through said slots and retained therein by the outer pulley and engagement of the same with a part of the arm.

6. The construction defined in claim 1, wherein said brake loop extends transversely through the arm and comprises a U-shaped member having out-turned extensions on the ends thereof engageable with the arm.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,186,606	Hutchinson	Jan. 9, 1940