# United States Patent

**McFarlane**

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## [54] MARINE LINE HOLDER


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[52] **U.S. Cl.** ..... **114/218**

[51] **Int. Cl.** ..... **B63b 21/04**

[58] **Field of Search** ..... 114/218, 219; 24/130, 129 B, 24/128



[56] **References Cited**

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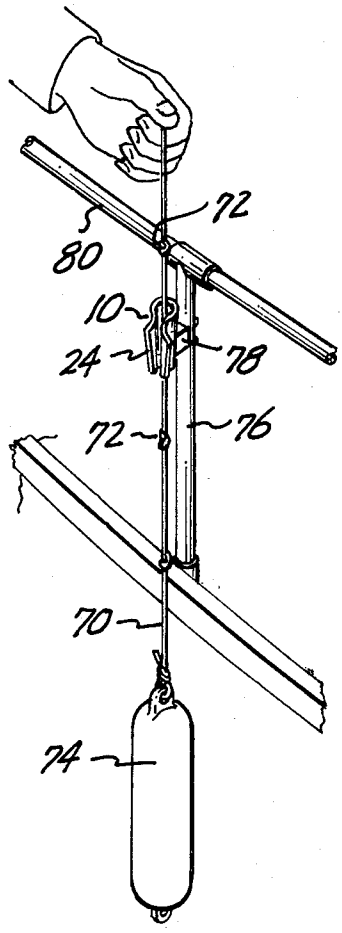
*Primary Examiner*—Milton Buchler
*Assistant Examiner*—Gregory W. O'Connor
*Attorney*—Graybeal, Cole & Barnard



[57] **ABSTRACT**

A unitary device for adjustably retaining or holding a knotted line to a marine craft or the like, having a shallowly tapered, generally cylindrical knot receiving and clamping channel which is provided with means for affixing the channel to the marine craft, having outwardly diverging ears to guide entry of the line therein.


**9 Claims, 8 Drawing Figures**



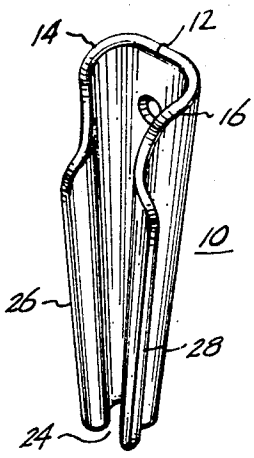



Fig. 1.

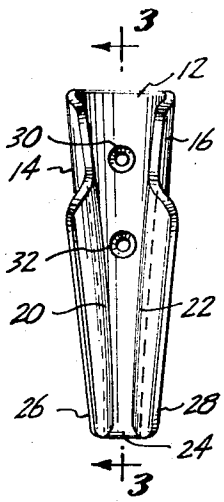



Fig. 2.

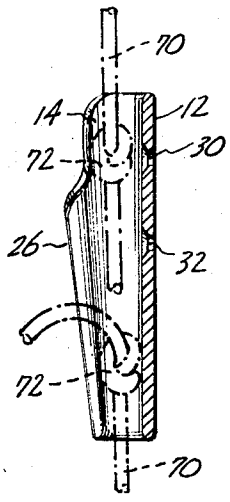



Fig. 3.

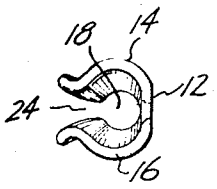



Fig. 4.

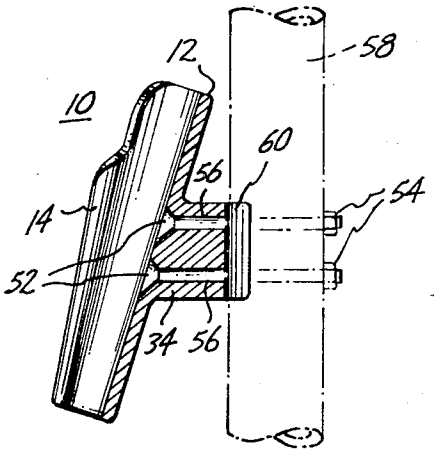



Fig. 5.

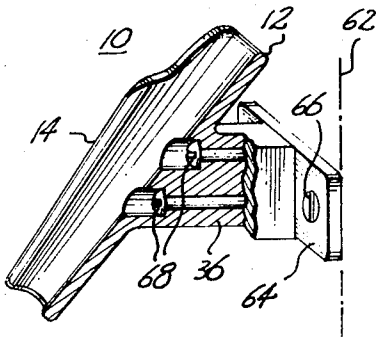



Fig. 6.

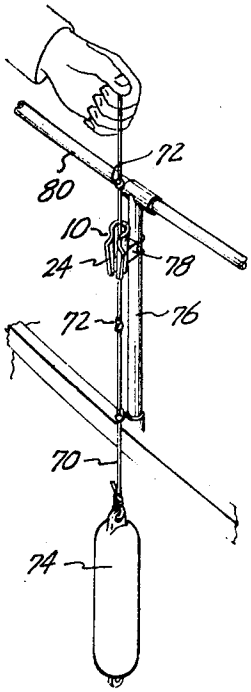



Fig. 7.

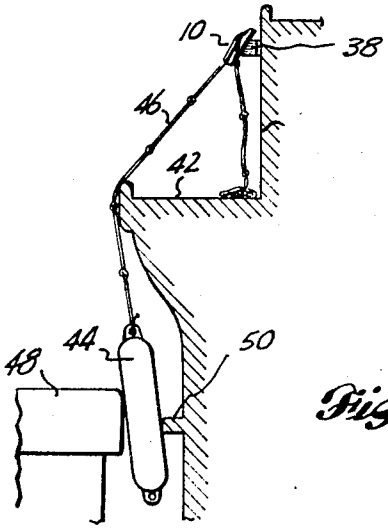



Fig. 8.

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# MARINE LINE HOLDER

## BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates in general to a device for fastening a knotted line to a marine craft, and in particular, to a device for detachably retaining or holding a knotted fender line in a manner so that the fender may be quickly and easily raised or lowered as a one-handed operation while the boat is being maneuvered alongside a potentially damaging structure, such as during docking.

2. Description of the Prior Art

In both fresh and salt water boating, the basic problem of protecting the hull of the craft from damaging contact with a pier or dock upon landing is encountered. The most popular solution to this problem is the positioning of generally cylindrical rubber or soft plastic fenders at the point of contact between the hull and the pier. These fenders are conventionally hung from the sides of the marine craft on lines which are attached to cleats fixed to the craft itself. The point of contact between the pier and the hull of the craft may be different for every pier, and for any one pier will vary with the rise or fall of the water level due to the tides or any other reason. The length of the fender line must, therefore, be frequently adjusted to keep the fender at the point of contact between the stationary structure and the hull.

Conventional horned cleats require tying of the fender line thereto, and thus adjustment of the length of this line requires untying and retying, a procedure which is both time consuming and troublesome particularly when the line is wet or taut. Additionally, in docking a small craft, a helmsman may have but one free hand to adjust a fender to prevent damage to the craft, a feat which is very difficult using the horned cleat.

One proposed solution to this problem is found in Winther, U.S. Pat. No. 2,870,733 which discloses a double recessed cleat body having a rotatable central post and locking plate for securing a looped line.

Cam cleats are also known in the art as will be seen from Hume, U.S. Pat. No. 3,265,032 which discloses a base having a pair of cam elements pivoted on the base on pins for movement toward or away from each other. Both the Winther and Hume cleats consist of a plurality of movable parts and thus are relatively difficult to manipulate, are relatively expensive to build and require a degree of maintenance to keep operable, particularly when used in salt water.

Cord holding devices such as those disclosed in Miller, U.S. Pat. No. 2,579,689 and Roussel, U.S. Pat. No. 879,591 are also known, but besides being of a construction significantly different from the present invention, they deal with the unrelated problem of packaging articles.

## SUMMARY OF THE INVENTION

It is an object of my invention to provide a line holder in fixed position on a marine craft whereby a line may be firmly fastened thereto and yet easily adjustable lengthwise therein.

It is another object of my invention to provide a line holder which does not require tying of the line thereto and which may be operated with one hand.

It is a further object of my invention to provide a line holder which has no moving parts and is thus inexpensive to manufacture.

Still another object of my invention is to provide a line holder for use with a fender line having a plurality of knots spaced along its length.

One more object of my invention is provided a line holder having a mounting means associated therewith whereby it may be mounted at an angle with respect to the mounting surface.

And another object of my invention is to provide a line holder for use with a line having a plurality of knots spaced thereon such that the line is fastened thereto by running the line therethrough in one direction until a knot is clamped therein, and unfastened by retracting the line until the knot is freed therefrom.



Other objects and advantages as well as the construction and operation of my invention in its various forms will be better understood by reference to the following description in connection with the accompanying drawings in which:

FIG. 1 is a perspective view of a line holder typifying the instant invention;

FIG. 2 is a front elevation view of the line holder of FIG. 1;

FIG. 3 is a view taken along line 3—3 of FIG. 2, including a knotted line entering and seated therein;

FIG. 4 is a plan view of the line holder of FIG. 1;

FIG. 5 is a sectional side elevation view of the line holder, together with an integral mounting means and conventional fasteners, shown mounted on a vertical railing support;

FIG. 6 is a sectional perspective view of the line holder showing a modified form of mounting means;

FIG. 7 illustrates typical use of the line holder in connection with the railing of a marine craft; and

FIG. 8 illustrates typical use of the line holder to hold a fender disposed between the hull of a marine craft and a pier.

## DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawings, and particularly to FIGS. 1–4, line holder 10 is shown comprising a unitary element curved to form a longitudinally tapered channel. Line holder 10 includes rear portion 12 and side portions 14 and 16. Rear portion 12 is slightly tapered along its length such that the top portion thereof is wider than the bottom portion. As shown in FIGS. 1–4, rear portion 12 is relatively flat, however, it is understood that the curvature of this portion could be increased, for example, to conform to the surface on which it is mounted.

Side portions 14 and 16, which extend integrally from the tapered rear portion 12 are curved first forwardly and outwardly and then forwardly and inwardly to define, in conjunction with rear portion 12, channel 18. In the disclosed embodiment, the curvature of the two side portions are related such that the side portions are mirror images of each other. As is best seen in FIGS. 3 and 4, curved sides 14 and 16 are also tapered along their length such that the top portion thereof is wider than the bottom portion. The forward and inward curvature of the tapered side portions is limited so that the corresponding inward extending edges 20 and 22 (FIG. 2) of the side portions are spaced apart at every point. The tapers of the rear and side portions additionally cause the spacing between the inward edges 20 and 22 of the side portions 14 and 16 to vary along their length thus defining slot 24. Thus it will be seen that the curved and tapered side portions and the tapered rear portion combine to form a hollow tapered cylinder having a tapered slot 24 extending the length thereof.

In the disclosed embodiments, outwardly diverging ears 26 and 28 are provided integrally connected to side portions 14 and 16 along a portion of inward edges 20 and 22 to assist in guiding a line into the channel 18. In other embodiments not disclosed in the accompanying drawings, outwardly diverging line guiding ears are not provided.

The disclosed line holder may be constructed of stainless steel, chrome brass or any other suitable material including plastic. It is also contemplated that the associated knotted line may be made of plastic.

The line holder of FIGS. 1–4 may be connected to a marine craft by conventional screws or bolts which may be inserted in holes 30 and 32 disposed in rear portion 12. If desired, a lug may be associated with rear portion 12 and extended normally therefrom, or at an angle thereto such as lugs 34 and 36 shown in FIGS. 5 and 6, to move holder 10 away from the surface of the marine craft on which it is to be mounted. Extension of the holder from the mounting surface may lead to easier adjustment of the fender line as will be discussed more completely below.

FIG. 5 discloses an additional embodiment typifying the present invention including lug 34 which is integrally connected to rear portion 12 of the line holder. The configuration of some marine craft may make it desirable to have the line

holder 10 connected thereto such that it is disposed at an angle with respect to the mounting surface. FIG. 8 illustrates such a situation. In FIG. 8, holder 10, having angular mounting lug 38 associated therewith, is shown mounted on the outside of cockpit wall 40. Side deck 42 extends normally from wall 40, and thus when a fender 44 having knotted line 46 connected thereto is desired to be interposed between pier 48 and hull rail 50, angular mounting bracket or lug 38 allows line 46 to extend from channel 18 of holder 10 at approximately the angle necessary for the line to extend over the side deck. Thus when the marine craft moves with respect to the pier thereby squeezing the fender therebetween and possibly placing line 46 in tension, the angular mount reduces the component of force which would otherwise act to pull line 46 outwardly through slot 24. The angular mount allows all of the tension force in the line to be borne substantially equally by the rear and side walls of channel 18, as desired.

Returning now to FIG. 5, lug 34 includes conventional fastening means comprising bolts 52 and nuts 54, disposed in slots 56 thereof. FIG. 5 illustrates holder 10 mounted on vertical rail support 58 of substantially circular cross section. To improve the stability of this mount, lug 34 is provided with saddle 60 which is curved to conform to the outer surface of rail support 58. Lugs having various curved surfaces may be provided to conform to other mounting surfaces.

In FIG. 6, line holder 10 is shown mounted at an angle different from that of FIG. 5 with respect to mounting surface 62. It is understood that the angular mounts disclosed are shown by way of example and not limitation, and that any other angles may be used if desired.

FIG. 6 further discloses adapter bracket 64 used in conjunction with lug 36. Bracket 64 is mounted by means of conventional fasteners such as screw 66, and lug 36 is in turn mounted thereon by means of the bolts 68. Adapter bracket 64 may thus be permanently mounted, while various fasteners of differing size or angle may be interchangeably mounted thereon.

Although not disclosed in the drawings, it is also recognized that a universal joint might be associated with a mounted bracket which would thereby allow a fixture mounted thereon to pivot in response to the pull of the fender line fastened therein.

As may be seen with reference to FIG. 3, in operation a line 70 (shown in dotted line) having a series of knots 72 spaced seriatim thereon, is disposed within channel 18, and then moved axially therethrough until a knot 72 is gripped by the tapering rear wall and sides of the channel. The relationship between the size of knot 72 and the cross section of channel 18 is such that the knot may easily enter the top portion of the channel but is too large to be pulled through the small opening at the bottom of the channel. It is recognized that, rather than knots, a plurality of suitably sized and shaped projections might be mounted at intervals along the fender line to accomplish the same function of pressing against the interior walls of channel 18 to prevent the line from passing therethrough. This alternate line construction may be particularly useful where a plastic line is used.

In FIG. 7, adjustment of fender 74 in line holder 10 is depicted. Line holder 10 is shown mounted on railing support 76. This mount may be any one of the means discussed above, or any other suitable means including circular metal bands, but as shown includes normally extending lug 78 to move holder 10 away from the support 76. This spacing allows line 70 and knots 72 to be easily raised or lowered without interference from railing 80. As illustrated, an unknotted portion of the fender line is inserted through slot 24, and the line is then allowed to be pulled by the weight of the fender through the holder until a knot is wedged therein. To raise or lower fender 74 in response, for example, to the changing tides, the fender line is retracted from the holder until the knot which had been wedged therein is completely freed from the holder. The unknotted portion of the line is then removed from the holder through slot 24, and the line is raised or lowered, as desired, until the unknotted portion of the line between a different pair of knots is adjacent slot 24. The unknotted line may then be inserted through slot 24 and the line allowed to be pulled by the fender through the holder until a different knot is wedged therein causing the fender to hang at a different level below the fixed holder. It is seen that the fineness of adjustment is directly related to the spacing of the knots on the line. The weight of the fender 74 constantly acts to pull the clamped knot through the bottom opening of channel 18, but the small cross section thereof prevents such movement, and thus the weight of the fender merely acts to seat the knot firmly in the fastener.

In one embodiment of the device for use with a line of one-eighth inch diameter, the length of the fastener was 2⅜ inches, and the diameter of the top of the line receiving channel was five-eighths inch, while the diameter of the bottom of said channel was one-fourth inch. The angle of taper of the rear and side walls of the channel was slight, and thus the angle of taper of the channel itself was slight to provide optimum gripping of the knotted line. It is preferred that the angle of taper of the channel be between 4° and 10°, but in some embodiments this angle may be somewhat smaller in order to better accomplish the unique squeezing and clamping of the knot provided by this invention. As has been discussed more completely above, it is this squeezing and clamping action which prevents undesirable disconnection of the knot from the holder during use.

It will thus be seen that line holders constructed for use with lines of larger diameter have cylindrical channels of proportionately larger diameter, but substantially the same slight taper.

From the foregoing, it is obvious that further variations in form, proportion and details of construction may be resorted to without departing from the spirit of my invention.

What is claimed is:

1. A marine line holder fixedly mountable on a marine craft for holding a hanging line having a plurality of serially spaced enlargements thereon, said holder comprising a longitudinally tapered rear portion, longitudinally tapered sides integrally connected thereto and extending forwardly and outwardly and then forwardly and inwardly to define a slotted, tapered clamping channel, and mounting means associated with said rear portion for rigidly connecting said marine line holder to said marine craft with said tapered sides converging, wherein said mounting means comprises a lug extending from said rear portion, said lug having an axial opening therein, and fastener means extending through said axial opening.

2. In combination with a marine craft, an assembly for adjustably retaining a hanging fender line or the like in position on the marine craft, comprising: a longitudinally slotted and tapered channel sized to receive unenlarged portions of said line; a line connectable to the fender or the like and having a plurality of enlargements spaced along its length, one of said enlargements being wedged and held in said longitudinally tapered channel; and mounting means rigidly attaching said tapered channel to said craft with said channel oriented small end down.

3. The combination comprising a marine craft, a hanging marine line with spaced enlarged portions, a marine line holder having a slotted, longitudinally tapered channel, and means rigidly attaching said marine line holder to said marine craft with the small end of said channel lower than the large end thereof, the size and taper of said channel being such that an unenlarged portion of said line passes freely therethrough while an enlarged portion thereof passes only partially therethrough.

4. The combination of claim 3 wherein the taper of the channel of the marine line holder is between 4 and 10°.

5. The combination of claim 3 wherein the integral side portions of the marine line holder include diverging ears for guiding said line into said channel.

6. The combination of claim 3 wherein the means attaching said marine line holder to said marine craft comprises bracket

means having an axial opening therein, extending outwardly from said channel, and fastener means extending through said axial opening.

7. A marine line holder for holding a knotted hanging line to a marine craft comprising an open ended tapered cylinder having a slot extending the length thereof to receive unknotted portions of said hanging line, said tapered cylinder having a large end opening sized to receive the line knots and a constricted portion sized to receive said line but too small for the line knots to pass therethrough, and mounting means rigidly attaching said marine line holder to the marine craft with the constricted portion of said cylinder below the large end thereof.

8. The marine line holder of claim 7 wherein the open ended tapered cylinder includes a relatively flat rear portion opposite said slot.

9. A marine line holder fixedly mountable on a marine craft for holding a hanging line having a plurality of serially spaced enlargements thereon, said holder comprising a longitudinally tapered rear portion, longitudinally tapered sides integrally connected thereto and extending forwardly and outwardly and then forwardly and inwardly to define a slotted, tapered clamping channel, and mounting means associated with said rear portion for rigidly connecting said marine line holder to said marine craft, wherein said mounting means attaches said holder to the marine craft in an attitude wherein the tapered sides converge downwardly.

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