The mooring buoy fending system is a pole with guide rings attached thereto. When used to moor a boat, the pole extends substantially horizontally from the deck of the boat and supports a mooring line that is secured to a mooring buoy at one end and to the boat at the other end. The length of the pole is greater than half the length of the mooring line and therefore prevents the boat from bumping against the mooring buoy. In an alternative embodiment, the system includes a buoy-mounted storage receptacle and, in another alternative embodiment, the system includes a buoy having a storage receptacle protruding from the top of the buoy. Additionally, a storage receptacle may be defined within the buoy. In the alternative embodiments, the pole is stored in the storage receptacle to facilitate easy grasping by a person in an approaching boat.
MOORING BUOY FENDING SYSTEM

CROSS-REFERENCE TO RELATED APPLICATION


1. FIELD OF THE INVENTION

[0002] The present invention relates to boat mooring devices, and more particularly, to a mooring buoy fending system that prevents contact between a mooring buoy and a boat moored thereto, and thereby prevents a condition known as “buoy rash.”

2. DESCRIPTION OF THE RELATED ART

[0003] Typically, a mooring buoy is comprised of an anchoring base that rests on the seabed, a floating spherical buoy, and a length of chain that is fixed at one end to the anchoring base and at the other end to the buoy. A mooring line is typically attached, either to an eyebolt protruding vertically from the top or bottom of the spherical buoy, or to the chain that anchors the buoy to the base. A boat is moored to the mooring buoy either by securing the buoy’s mooring line to the boat or by securing a mooring line from the boat to the eyebolt of the buoy.

[0004] A well-known problem associated with mooring a boat to a mooring buoy is that the boat continually bumps up against the buoy as the direction of wind or water currents change. Because mooring buoys are typically constructed of metal, plastic, or other suitable hard material, and most boats using a mooring buoy are constructed of either wood or fiberglass, this continual bumping of the boat against the buoy often results in a condition known as “buoy rash.” Buoy rash is a condition where the surface of a boat that has been in continual contact with a buoy has become scraped, splintered, chipped or dented.

[0005] Although the related art includes patents teaching a buoy with an elongated structure, it does not teach a mooring buoy and pole configured to prevent buoy rash.

[0006] U.S. Pat. Nos. 4,534,740 and 4,568,295, issued Aug. 13, 1985 and Feb. 4, 1986, respectively, to L. Poldervaart, disclose a buoy having two rigid arms extending horizontally from the buoy with the arms sufficiently spaced apart to receive and secure one end of a boat and to thereby hold the boat in a fixed position relative to the buoy. The device, however, has at least two drawbacks. First, the rigid arms of the device can bump the moored boat thereby resulting in scraping or denting of the boat. And second, the buoy must be of sufficient size and weight to support the torque of the two arms.

[0007] Likewise, U.S. Pat. No. 4,735,472, issued Apr. 5, 1988 to P. Balleraud, discloses a device for avoiding resonance associated with wave movement. The device includes a buoy attached in a triangular relationship with an anchoring column and a moored ship. However, one joint of the rigid arms comprising the triangular structure is capable of bumping the moored boat and thereby causing scraping or denting.

[0008] The related art also includes patents, such as U.S. Pat. No. 3,077,614, issued Jul. 16, 1965 to R. L. Lloyd, U.S. Pat. No. 4,529,388 issued Jul. 16, 1985 to Jones et al., U.S. Pat. No. 6,488,554 issued Dec. 3, 2002 to R. G. Walker as well as U.S. Patent Publication No. 2002/0117099, published Aug. 29, 2002, all of which disclose a buoy having an elongated rod extending upward vertically from the buoy for the purpose of holding the mooring line in a position where it is easily grasped by a person in an approaching boat. However, while these devices enable a person in a boat to more easily grasp the mooring line attached to a mooring buoy, none of the devices uses a rod in a horizontal orientation to maintain space between a boat and the buoy.

[0009] Additionally, U.S. Pat. No. 6,273,017, issued Aug. 14, 2001 to G. E. Griffin, discloses an elongated handle having two ends with an eyelet on each of the ends. The device is used to facilitate the securing of a mooring line to a stationary object. Although, the handle remains in a substantially horizontal position when used to moor a boat, the handle does not prevent contact of the boat with the stationary object. To the contrary, because one end of the handle is secured directly to the object, the other end of the handle can bump and damaged the boat.

[0010] Consequently, none of the above inventions and patents, taken either singly or in combination, is seen to describe the instant invention as claimed. Thus, a mooring buoy fending system solving the aforementioned problem is desired.

SUMMARY OF THE INVENTION

[0011] The mooring buoy fending system is a pole with guide rings attached thereto. When used to moor a boat, the pole extends substantially horizontally from the deck of the boat and supports a mooring line that is secured to a mooring buoy at one end and to the boat at the other end. The length of the pole is greater than half the length of the mooring line and therefore prevents the boat from bumping against the mooring buoy. In an alternative embodiment, the system includes a buoy-mounted storage receptacle and, in another alternative embodiment, the system includes a buoy having a storage receptacle protruding from the top of the buoy. In the alternative embodiments, the pole is stored in the storage receptacle to facilitate easy grasping by a person in an approaching boat.

[0012] Accordingly, it is a principal object of the invention to provide a system for preventing a boat moored to a mooring buoy from bumping into the mooring buoy and to thereby prevent boat damage known as “buoy rash.”

[0013] It is also an object of the invention to provide improved elements and arrangements thereof for the purposes described which is inexpensive, dependable and fully effective in accomplishing its intended purposes.

[0014] These and other objects of the present invention will become readily apparent upon further review of the following specification and drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] FIG. 1 is an environmental, perspective view of a mooring buoy fending system according to the present invention shown secured to both a boat and a mooring buoy with the mooring buoy shown in two positions.

[0016] FIG. 2 is an environmental, perspective view of a mooring buoy fending system according to the present
The invention shown is secured to both a boat and a mooring buoy with the pole flexing downward.

FIG. 3 is an environmental, perspective view of a mooring buoy fending system designed to prevent the hull of a boat from bumping against the buoy when the boat shifts its position in the water. Referring first to FIGS. 1-3, the invention includes a pole 11, the pole 11 having a first end 22 and a second end 24, that supports a mooring line 16 in a manner to hold the boat away from a mooring buoy B. At least one, and in the illustrated embodiment two, rings 12 are disposed along the pole 11, extending from the pole 11 in planes that are substantially perpendicular to the axis of the pole 11. Rings 12 are located toward the second end 24 of the pole 11. The rings 12 are preferably small enough that a braided or knotted loop formed in the line 16 will not pass through the rings 12. Alternatively, a stopping device (not shown) such as a block of wood or plastic or other material may be attached to the line 16 to prevent a loose end of the line 16 from slipping free of the rings 12. One of the rings 12 is located at the second end 24 of the pole 11, a second ring 12 being located approximately a third of the length of the pole 11 from the second end 24. A single ring 12 located at the second end 24 of the pole 11, or a pair of rings 12 located as described above, is sufficient to support the mooring line 16, although additional rings 12 may be distributed along the length of the pole 11. The first end 22 of the pole 11 is secured to the deck of a boat by any of several means, such that the pole 11 extends substantially from the boat.

FIG. 4A is a partially fragmented exploded view of a pole comprising an end socket for mounting the pole to a boat cleat. FIG. 4B is a partially fragmented view of a pole comprising an end socket for mounting the pole to a boat cleat, showing the pole attached to the cleat. FIG. 5 is an exploded perspective view of an alternative embodiment of a mooring buoy fending system according to the present invention shown including a storage receptacle disposed on a buoy. FIG. 6 is an environmental, perspective view of an alternative embodiment of a mooring buoy fending system according to the present invention shown including a storage receptacle disposed on a buoy. FIG. 7A is an exploded side view of a hollow storage receptacle for an alternative embodiment of a mooring buoy fending system according to the present invention shown in relation to a mooring buoy. FIG. 7B is an exploded front view of a hollow storage receptacle for an alternative embodiment of a mooring buoy fending system according to the present invention shown in relation to a mooring buoy. FIG. 8A is a fragmented side view of a pole and pivoting pole handle for a mooring buoy fending system according to the present invention shown attached to an anchor roller. FIG. 8B is a side elevational view of a pivoting pole handle for a mooring buoy fending system according to the present invention.

FIG. 9 is a fragmented perspective view of a pole and mooring line for a mooring buoy fending system according to the present invention, illustrating an alternate method for mounting the pole to a boat. FIG. 10 is a perspective view of an alternative embodiment according to the present invention wherein a mooring line extends through a hollow cavity within the pole. FIG. 11 is a perspective view of an alternative embodiment of a mooring buoy fending system according to the present invention wherein a buoy has an integral storage receptacle.

Similar reference characters denote corresponding features consistently throughout the attached drawings.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention is a mooring buoy fending system designed to prevent the hull of a boat that is moored to a buoy from bumping against the buoy when the boat shifts its position in the water. Referring first to FIGS. 1-3, the invention includes a pole 11, the pole 11 having a first end 22 and a second end 24, that supports a mooring line 16 in a manner to hold the boat away from a mooring buoy B. At least one, and in the illustrated embodiment two, rings 12 are disposed along the pole 11, extending from the pole 11 in planes that are substantially perpendicular to the axis of the pole 11. Rings 12 are located toward the second end 24 of the pole 11. The rings 12 are preferably small enough that a braided or knotted loop formed in the line 16 will not pass through the rings 12. Alternatively, a stopping device (not shown) such as a block of wood or plastic or other material may be attached to the line 16 to prevent a loose end of the line 16 from slipping free of the rings 12. One of the rings 12 is located at the second end 24 of the pole 11, a second ring 12 being located approximately a third of the length of the pole 11 from the second end 24. A single ring 12 located at the second end 24 of the pole 11, or a pair of rings 12 located as described above, is sufficient to support the mooring line 16, although additional rings 12 may be distributed along the length of the pole 11. The first end 22 of the pole 11 is secured to the deck of a boat by any of several means, such that the pole 11 extends substantially from the boat.

The pole rings 12 serve as supports and line guides for a mooring line 16 that is secured to a mooring buoy B at one end and to a boat cleat C at the other end. A portion 18 of the pole 11 extending beyond the edge of the boat is longer than half the length of the portion of the mooring line 16 between the edge of the boat and the buoy B. Thus, when the boat drifts toward the mooring buoy B, the invention prevents the boat from coming in contact with the buoy B, as depicted by the buoy shown in phantom lines in FIG. 1.

Cushions 13 are disposed about the pole 11, the cushions being located generally toward the first end 22 of the pole 11. The cushions 13 are formed of a resilient, and preferably buoyant material. The cushions 13 provide protection to the boat from abrasions or damage caused by the pole 11, and similarly protect the pole from contact with parts of the boat. Additionally, the cushions 13 help the pole 11 to float if the pole 11 is left in the water, as seen in FIG. 3, it being desirable that the pole 11 float at the water’s surface if dropped overboard.

The pole 11 is shown in FIG. 1 secured to a boat via a tubular holder 14 and 15 adapted to receive one end of the pole 11. The tubular holder 14 and 15 comprises a hollow cylinder 14, and a mounting bracket 15 extending laterally from the side of the hollow cylinder 14. The mounting bracket 15 is bolted to the deck of the boat. The inside diameter of the hollow cylinder 14 is substantially equal to the outside diameter of the pole 11, and the pole 11 is coupled with the hollow cylinder 14 by means of push-fit engagement.

Referring to FIG. 2, an alternate method of attaching the pole 11 to a boat is illustrated, wherein a fitting 30 is attached to the first end 22 of the pole 11, the fitting 30 being adapted to fit onto an end of a cleat C. This method of attachment is seen in greater detail in FIGS. 4A and 4B.

The fitting 30 has two opposing boxes 36 and 38. Bore 38 is dimensioned to receive the first end 22 of the pole 11 in a push-fit engagement. The fitting 30 may be further
affixed to the first end 22 of the pole 11 by an adhesive, a securing pin or bolt, or other means. Bore 36 is adapted to fit over a prong P of a cleat C. A short elastic loop 32 is attached to the pole 11 near the first end 22. With the pole first end 22 of the pole 11 engaged with the bore 36 of the fitting 30, and the bore 36 of the fitting 30 fitted to the prong P of the cleat C, securing the elastic loop 32 around the cleat C secures the pole 11 in place. Alternatively, bore 36 may be formed integrally with the first end 22 of the pole 11, thereby adapting the pole 11 to similarly fit over a prong P of a cleat C without the need for an additional fitting.

A storage receptacle 71 is shown in FIG. 3 attached to the top of the buoy B. The storage receptacle 71 provides a holder for the pole 11 when the pole 11 is not in use. Turning now to FIGS. 5, 6, 7A, and 7B, the storage receptacle 71 is shown in greater detail. A hollow storage receptacle 71, may be affixed to a mooring buoy B to provide means for holding the pole 11 when it is not in use. The storage receptacle 71 attaches to the eyebolt E of a standard mooring buoy B, and has an upper portion 72, a middle portion 73, and a lower portion 74. The upper portion 72 of the hollow storage receptacle 71 is funnel shaped, the middle portion 73 is cylindrical, and the lower portion 74 is a sleeve adapted to fit snugly over the eyebolt E of a mooring buoy B. The lower portion 74 has a front side 75 and a back side 76 each of which have an aperture 77 disposed to align with the eyelet of the eyebolt E. The storage receptacle 71 is secured to the buoy eyebolt E by a plurality of nut and bolt assemblies 78. When the pole 11 is not attached to a boat, the pole 11 is stored vertically in the storage receptacle 71 by inserting one end of the pole 11 into the receptacle 71. The storage receptacle 71 can either be constructed of glow in the dark material or include at least one solar powered light (not shown) for better night visibility.

Turning now to FIGS. 8A-8D, the pole 11 can also be attached to a boat via an anchor roller A and a pivoting pole handle 41 that is adapted to fit in the front portion of the anchor roller A. The pivoting pole handle 41 consists of a bored cylinder 42 having a pair of contoured tongs 44 extending therefrom substantially in a plane parallel to the axis of the bored cylinder 42, and a handle 43 having a contoured upper portion 47 with a pair of contoured tongs 48 extending downward from the upper portion 47. The contoured tongs 44 of the bored cylinder 42 mate with the upper portion 47 of the handle 43 and are connected to each other in a pivoting relationship by a bolt and wing nut assembly 46 such that when the handle 43 is positioned with the contoured tongs 48 engaged in the anchor roller A, the bored cylinder 42 can pivot in a vertical plane. The contoured tongs 48 of the handle 43 are oriented and dimensioned to fit in the front end of an anchor roller A with a mooring line 16 passing between them 48. The pole 11 is attached to the bored cylinder 42 in a push-fit engagement by inserting one end of the pole 11 into the bore (not shown). A setscrew (not shown) can be used to more securely attach the pole 11 to the bored cylinder 42.

Turning now to FIG. 9, an additional method for attachment of the pole 11 is shown, this method particularly suited to attaching the pole 11 to a boat raking R or similar boat fixture. In place of attachment fitting 30 described above, a pivot arm connector-92 is disposed on the first end 22 of the pole 11, the pivot arm connector 92 having an aperture 94 defined therein for receiving a fastening pin or bolt. A mounting bracket 96 is fastened to a section of the boat’s railing R, or a similar structure, by means of a collar or clamp 98 or other suitable means. The pivot arm connector 92 is secured to the mounting bracket 96 to hold the pole 11 in place.

The configuration of the pole itself can vary. The pole can be segmented (not shown) to allow breaking down and easy storage. In one embodiment of the invention, a pole 11 is substantially hollowed to support the mooring line 16 without guide rings as shown in FIG. 10. When hollowed, a cavity 126 runs lengthwise through the pole 11. A lateral opening 52 is defined near the first end 122 of the pole 11 to allow access to the mooring line 16 for securing the pole 11 to a boat. The mooring line 16 exits the pole at the second end 124.

Turning now to FIG. 11, a storage receptacle 82 may be defined within a mooring buoy 81 itself. The storage receptacle 82 comprises an aperture 83 defined in the surface of the buoy 81, the aperture 83 being in communication with a walled recess 84 defined within the body of the buoy 81.

It is to be understood that the present invention is not limited to the embodiments described above, but encompasses any and all embodiments within the scope of the following claims.

I claim:
1. A mooring buoy fendering system, comprising:
   a pole having a first end and a second end;
   means for attaching said first end of said pole to a boat; and
   means for coupling a mooring line to said pole in a slidable relationship;
   whereby when a first end of the mooring line is tied to a buoy, and a second end of the mooring line is tied to the boat, and said pole is attached to the boat, said pole prevents the boat from bumping the buoy.
2. The mooring buoy fendering system according to claim 1, wherein said means for coupling the mooring line to said pole comprises at least one ring extending substantially perpendicular from said pole.
3. The mooring buoy fendering system according to claim 1, wherein said means for coupling the mooring line to said pole is a hollow cavity defined in said pole, said pole having a first opening into said cavity and a second opening into said cavity, the first opening into said cavity being disposed on top of the first end of said pole and the second opening into said cavity being disposed on a side of said pole.
4. The mooring buoy fendering system according to claim 1, further comprising at least one buoyant body attached to said pole, whereby said pole floats in water.
5. The mooring buoy fendering system according to claim 1, further comprising at least one cushion disposed on said pole adjacent the first end of said pole.
6. The mooring buoy fendering system according to claim 1, wherein said at least one cushion is buoyant, whereby said pole floats in water.
7. A mooring buoy fendering system, comprising:
   a pole having a first end and a second end, the first end being adapted for attachment to a boat;
at least one cushion disposed on said pole adjacent the first end of said pole.

at least one ring extending substantially perpendicular to said pole, the at least one ring being located adjacent the second end of said pole;

a mooring line having a first end and a second end, the mooring line being slidably supported through said at least one ring;

whereby when said first end of said mooring line is tied to a mooring buoy, the second end of said mooring line is tied to the boat, and said pole is attached to the boat, said pole prevents the boat from bumping the mooring buoy.

8. The mooring buoy fending system according to claim 7, further comprising a hollow storage receptacle adapted for attachment to a top of a mooring buoy, the first end of said pole being inserted into said hollow storage receptacle.

9. The mooring buoy fending system according to claim 8, wherein said hollow storage receptacle has a funnel-shaped upper portion, a cylindrical middle portion and a lower portion, the lower portion being a sleeve adapted to fit snugly over the eyelet bolt of a mooring buoy, the lower portion having a front side and a back side each having an aperture adapted for alignment with an eyelet defined by the eyelet bolt of the mooring buoy.

10. The mooring buoy fending system according to claim 7, further comprising a mooring buoy, the mooring buoy including a buoyant body having a hollow storage receptacle defined therein, the first end of said pole being removably inserted into said hollow storage receptacle.

11. The mooring buoy fending system according to claim 7, further comprising means for attaching said pole to a boat.

12. The mooring buoy fending system according to claim 7, wherein the first end of said mooring line has a loop formed therein.

13. The mooring buoy fending system according to claim 7, wherein the second end of said mooring line is adapted for being anchored to the mooring buoy.

14. The mooring buoy fending system according to claim 7, wherein said at least one cushion is buoyant, whereby said pole floats in water.

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