Feb. 8, 1966 R. E. OSBORN ETAL 3,233,934

ROPE ANCHOR

Filed Feb. 13, 1964 2 Sheets-Sheet 1

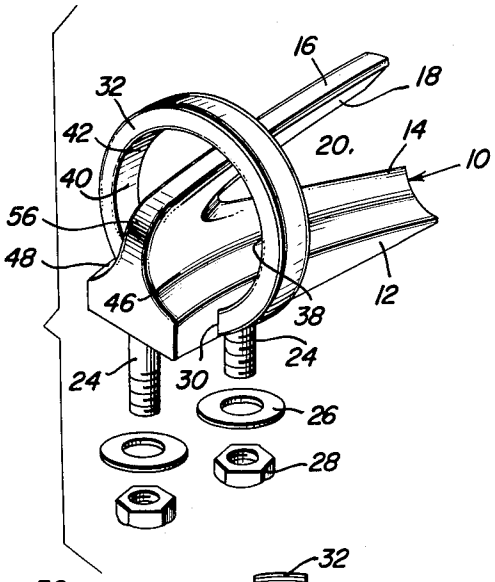


Fig. 1

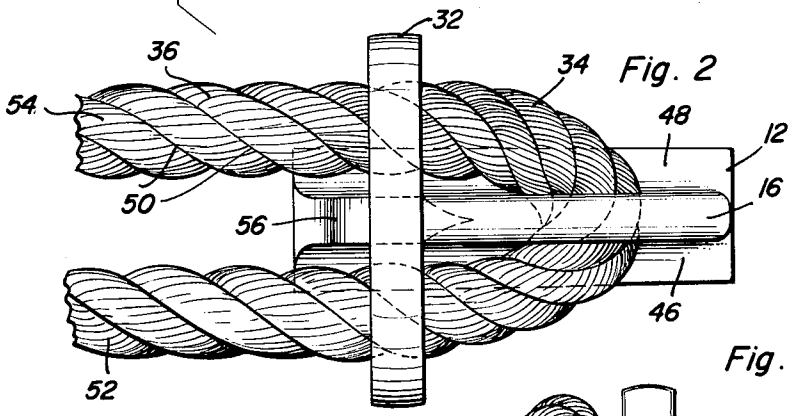


Fig. 2

Fig. 3

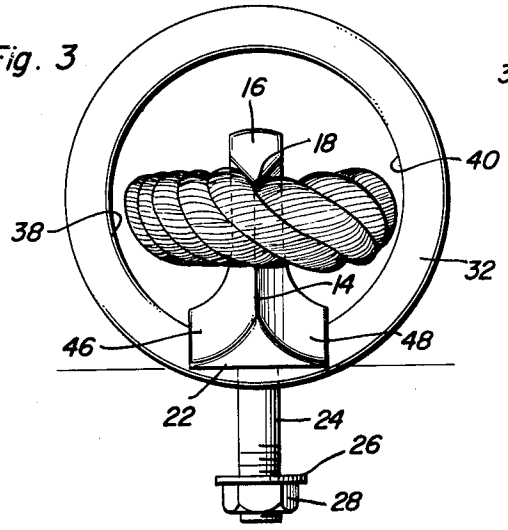
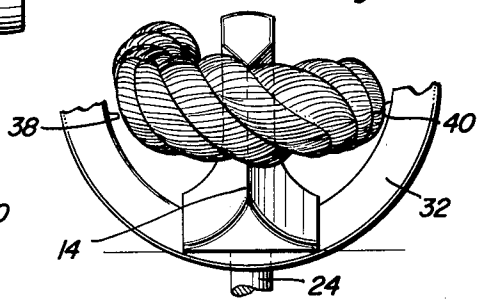


Fig. 4



Robert E. Osborn
Albert K. Reque
INVENTORS

BY Clarence A. O'Brien and Harvey B. Jacobson
Attorneys

Feb. 8, 1966 R. E. OSBORN ETAL 3,233,934

ROPE ANCHOR

Filed Feb. 13, 1964 2 Sheets-Sheet 2

Fig. 5

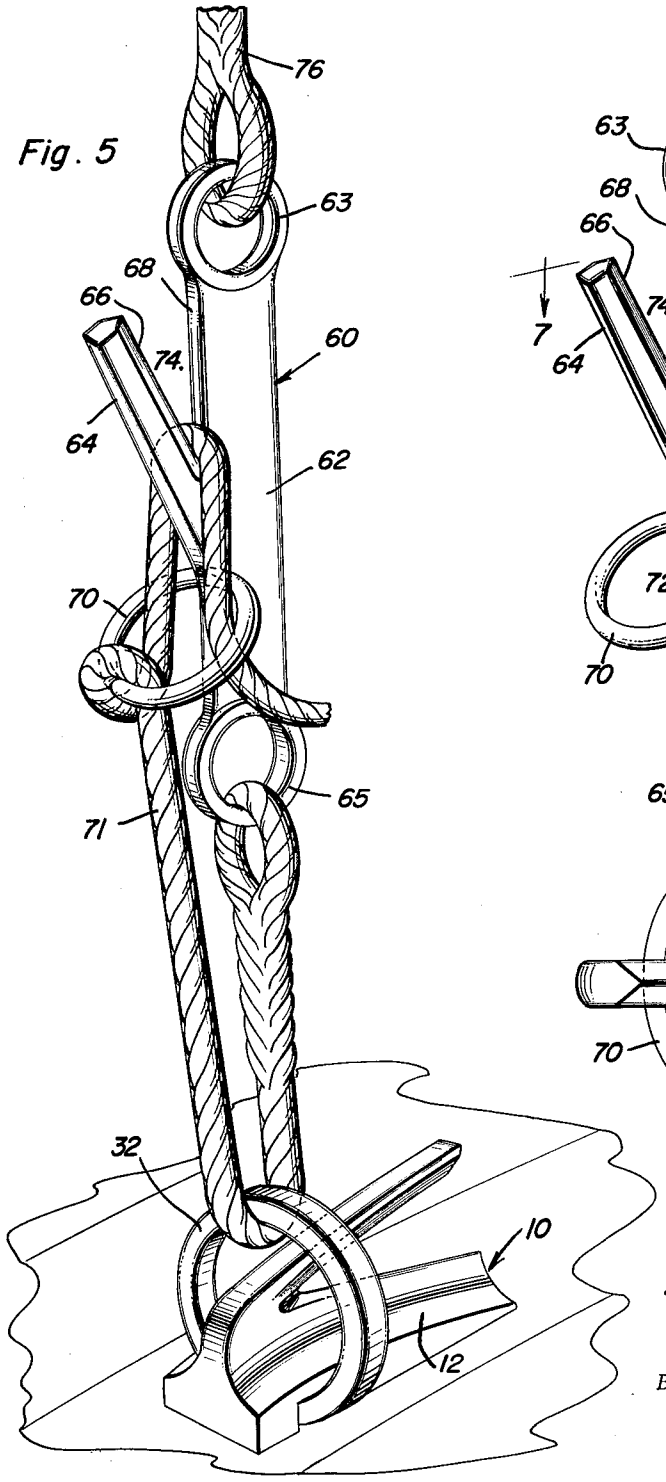


Fig. 6

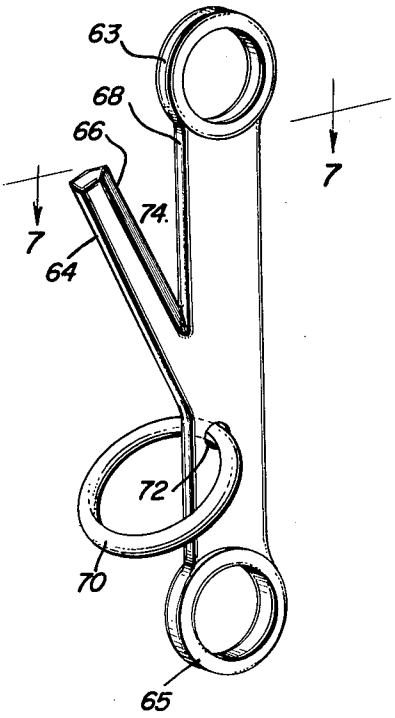
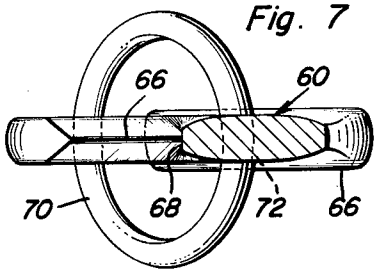


Fig. 7



Robert E. Osborn
Albert K. Reque
INVENTORS

BY Clarence A. O'Brien and Harvey B. Jacobson
Attorneys

United States Patent Office

3,233,934

Patented Feb. 8, 1966

3,233,934

ROPE ANCHOR

Robert E. Osborn, 2002 N. Bay Drive, and Albert K. Reque, 110 N. Tamarack St., both of Warsaw, Ind.

Filed Feb. 13, 1964, Ser. No. 344,592

15 Claims. (Cl. 294—74)

This invention relates to a novel and useful rope anchor or cleat designed in a manner enabling the free end of a length of line or rope to be readily secured thereto and removed therefrom. The boat anchor of the instant invention is adapted to be utilized as a bow or stern cleat and lifting ring, as a ski tow rope anchor, as an anchor for the free end of a line secured to a boat fender and as an anchor for cargo handling lines. In addition, the rope anchor also has many uses in the industrial field as an anchor for various types of ropes and lines.

The rope anchor of the instant invention is formed of a body including a V-shaped notch for receiving a length of line therethrough and guide means for forming and maintaining the portion of the line engaged with the rope anchor in the form of a loop. The opposing surfaces of the rope anchor defining the V-shaped notch are generally V-shaped in cross-section with their apices projecting toward each other. In this manner, a pull on either end of the loop will tend to tightly wedge the line or rope into the apex of the notch, the frictional engagement between the rope or line and the portions of the rope anchor defining the notch being sufficient to prevent the rope from sliding longitudinally through the notch.

The main object of this invention is to provide a novel and useful rope anchor to which the free end of a length of rope or line may be quickly secured in a manner firmly securing the line to the rope anchor.

Another object of this invention, in accordance with the immediately preceding object, is to provide a rope anchor from which a length of rope or line secured thereto may be readily removed.

Yet another object of this invention is to provide a rope anchor which will also function as a lifting eye.

Another object of this invention is to provide a rope anchor whose construction renders it particularly well adapted to be utilized as a component of a cargo sling.

A final object of this invention to be specifically enumerated herein is to provide a rope anchor in accordance with the preceding objects which will conform to conventional forms of manufacture, be of simple construction and easy to use so as to provide a device that will be economically feasible, long-lasting and relatively trouble-free in operation.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is an exploded perspective view of the rope anchor of the instant invention;

FIGURE 2 is a top plan view of the rope anchor showing the manner in which a looped portion of a rope or line may be operatively engaged therewith;

FIGURE 3 is an end elevational view of the rope anchor as seen from the right side of FIGURE 2 illustrating the manner in which the rope anchor is specifically adapted to tightly frictionally engage the twisted rope illustrated in FIGURE 2 when a pull is applied to the lowermost free end of the looped portion of the rope illustrated in FIGURE 2;

FIGURE 4 is a fragmentary elevational view similar to that of FIGURE 3 but showing the manner in which

the rope anchor is specifically adapted to frictionally engage the looped portion of the rope when a pull is exerted on the free end of the upper portion of the loop illustrated in FIGURE 2;

FIGURE 5 is a perspective view of a modified form of rope anchor showing the manner in which it may be utilized as a lifting hitch when utilizing that form of the invention illustrated in FIGURES 1–4 as a lifting eye;

FIGURE 6 is a perspective view of the modified form of rope anchor; and

FIGURE 7 is an enlarged horizontal sectional view taken substantially upon the plane indicated by the section line 7—7 of FIGURE 6.

Referring now more specifically to the drawings the numeral 10 generally designates the rope anchor of the instant invention which includes a body 12 defining a first elongated guide member including a guide surface 14 and including an arm member 16 which projects laterally outwardly therefrom and defines a second elongated guide surface 18 opposing the first guide surface 14 and coacting with the latter to form a V-shaped notch 20. The undersurface 22 of the body 12 is substantially planar and is adapted to be abutted against a surface to which the anchor 10 is to be secured.

A pair of depending threaded studs 24 project downwardly from the lower surface 22 and each has a washer 26 disposed thereon and a threaded fastener 28 threadedly engaged therewith for securing the anchor 10 to a suitable surface.

The body 12 also defines a transversely extending and downwardly opening groove 30 in which the lowermost portion of a ring 32 is secured in any convenient manner. The ring 32 encircles the body 12 and is adapted to have the looped portion 34 of a length of rope 36 passed therethrough with the closed end of the loop extending transversely through the notch 20 and frictionally engaged with the guide surfaces 14 and 18.

It will be noted that the diametrically opposite portions 38 and 40 of the inner surface 42 of the ring 32 also define guide surfaces between which the loop portion 34 of the length of rope 36 is received. Still further, it may be seen that the opposite sides 46 and 48 of the body 12 are transversely curved to seatingly receive the end portions of the loop portion 34 of the rope 36.

It may be seen from FIGURES 2–4 of the drawings that the rope 36 is constructed of three twisted strands of rope and that the rope 36 defines a plurality of outwardly opening spiraled grooves 50.

From FIGURES 3 and 4 of the drawings it may be seen that a pull on the end portion 52 forces the guide surface 18 into seating engagement with one of the grooves 50 and that when a pull is exerted on the free end portion 54 of the rope 36 the guide surface 14 is forced into seating engagement with the rope 54 in one of the grooves 50.

While the rope anchor 10 will obviously, in view of the spiraled grooves defined by conventional twisted rope sections, operate more efficiently with twisted rope sections, the acute angle defined by the surfaces 14 and 18 is sufficiently small to enable the anchor 10 to be utilized in combination with other types of rope such as braided rope which do not include spiraled grooves such as the grooves 50.

When the anchor 10 is secured to a portion of the decking of a boat the ring 32 thereof may readily be utilized as a lifting eye to which a hook secured to the end of a lifting line may be secured. Further, it may be seen that the surface 56 of the arm member 16 is rounded so as to enable it to function as a cam surface when inserting the loop portion 34 through the ring 38, the cam surface 56 camming the closed end of the loop portion

34 upwardly when the latter is engaged therewith so that it will slide along the upper surface of the arm member 16 and over the free end of the latter.

Referring now more specifically to FIGURES 5–7 of the drawings there will be seen a modified form of lifting anchor generally referred to by the reference numeral 60 and which is similar to the anchor 10 in many respects. The anchor 60 includes an elongated body 62 from which an arm member 64 corresponding to the arm members 16 projects. The arm member 64 defines a guide surface 66 corresponding to the guide surface 18 and the body 62 defines a guide surface 68 corresponding to the guide surface 14. A ring 70 corresponding to the ring 32 is provided but is slidably and rotatably received through a bore 72 formed in the body 62. In addition, the opposite ends of the body 62 are provided with eye portions 63 and 65.

From FIGURE 5 of the drawings it will be seen that the anchor 60 may be used in the same manner in which the anchor 10 is used. In addition, it may be seen that the free end of the length of rope 71 may be looped and passed through the ring 70 and engaged with the rope 74 corresponding to the notch 20 with one end of the loop portion of the rope turned once about the portion of the ring 70 diametrically opposite the portion thereof rotatably journaled and slidably received through the bore 72.

In addition, when the anchor 60 is to be utilized as a lifting fixture in cargo handling operations, the end of the length of the rope 71 remote from the end thereof secured in the notch 74 may be passed through a lifting eye such as the ring 32 on the anchor 10 secured to the boat 12 which is to be lifted and secured to the lower eye member 65 while the upper eye member 63 has the free end of the lifting rope 76 secured thereto.

Further, the anchor 10 may be used as an industrial lifting anchor by engaging the free end portion of a lifting rope therewith in the manner illustrated in FIGURE 2 and then looping the free end of the rope about and through the ring in the manner in which the rope 71 is looped about and through the ring 70.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. In combination, a length of flexible but somewhat stiff and deformable rope of a predetermined diameter, rope anchor comprising a body including a first pair of opposing elongated guide members disposed generally in the same plane and including a pair of elongated longitudinally extending and substantially straight opposing guide surfaces inclined relative to each other and forming a generally V-shaped notch, said body also including a second pair of opposing guide surfaces disposed on opposite sides of said plane and including at least portions thereof extending in a second plane extending transversely of the direction in which said notch opens, a loop formed in said rope including a closed end portion interconnecting a pair of adjacent free leg portions, said closed end portion of said loop being disposed in said notch and said free leg portions being disposed on opposite sides of the first-mentioned plane and between said second pair of opposing guide surfaces, the included angle defined by said first pair of guide surfaces being sufficiently acute relative to the diameter of said rope, to prevent said closed end portion from fully seating in said notch, said second plane being spaced from said notch in the direction opposite to the direction in which said notch opens, the spacing between said second pair of opposing surfaces and between said second plane and said notch being such that the leg portions of said loop adjacent the closed end portion thereof are maintained in closely spaced generally parallel relation by said second pair of guide surfaces.

2. The combination of claim 1 wherein at least one of said first-mentioned surfaces is generally V-shaped in cross-section and the apex thereof projects toward the other of said first-mentioned surfaces.

3. The combination of claim 1 wherein said first-mentioned surfaces are generally V-shaped in cross-section and the apices thereof project toward each other.

4. The combination of claim 1 wherein said second pair of guide surfaces comprise generally diametrically opposite side portions of at least a partial ring carried by said base and disposed in said second plane.

5. The combination of claim 4 wherein said ring is closed.

6. The combination of claim 1 wherein said body defines one of said elongated guide members and the other elongated guide member is defined by an arm member projecting outwardly to one side of said body.

7. The combination of claim 6 wherein said second pair of guide surfaces comprise generally diametrically opposite side portions of at least a partial ring carried by said base and disposed in said second plane, the longitudinal centerline of said arm member passing through the approximate center of said ring.

8. The combination of claim 6 wherein said second pair of guide surfaces comprise generally diametrically opposite side portions of at least a partial ring carried by said base and disposed in said second plane, said ring having a segment thereof rotatably journaled in said body.

9. The combination of claim 8 wherein said ring is closed.

10. The combination of claim 6 wherein said second pair of guide surfaces comprise generally diametrically opposite side portions of at least a partial ring carried by said base and disposed in said second plane, said ring having a segment thereof rotatably journaled in said base, said body being elongated and generally paralleling said one elongated guide surface and being provided with an eye member on its opposite ends.

11. The combination of claim 6 wherein said second pair of guide surfaces comprise generally diametrically opposite side portions of at least a partial ring carried by said base and disposed in said second plane, said ring having a segment thereof rotatably journaled in said body, the axis of rotation of said ring substantially intersecting and being disposed at generally right angles relative to the longitudinal centerline of said arm member.

12. The combination of claim 1 wherein said second pair of guide surfaces comprise generally diametrically opposite side portions of at least a partial ring carried by said base and disposed in said second plane, said ring being fixedly supported from said body.

13. The combination of claim 12 wherein said ring is closed.

14. The combination of claim 1 wherein said second pair of guide surfaces comprise generally diametrically opposite side portions of at least a partial ring carried by said base and disposed in said second plane, said ring being fixedly supported from said body said first-mentioned surfaces being generally V-shaped in cross-section and the apices thereof projecting toward each other.

15. In combination, a length of flexible but somewhat stiff rope constructed of a plurality of individual strands of rope twisted about each other, a rope anchor comprising a body including a first pair of opposing elongated guide members disposed generally in the same plane and including a pair of elongated longitudinally extending and substantially straight opposing guide surfaces inclined relative to each other and forming a generally V-shaped notch, said body also including a second pair of opposing guide surfaces disposed on opposite sides of said plane and including at least portions thereof extending in said second plane extending transversely of the direction in

which said notch opens, said second plane being spaced in the opposite direction from the apex of said notch, said length of rope having a loop formed therein with the closed end of said loop passed between said second pair of guide surfaces and seatingly engaged with said first pair of guide surfaces, the included angle defined by said first pair of guide surfaces being sufficiently acute to prevent said closed end of said loop from being fully seated in said notch, the spacing between said second pair of opposing surfaces being sufficiently small to cause the portions of said section of rope immediately adjacent the closed end of the loop to be substantially parallel and disposed in closely spaced side-by-side relation, said first-mentioned guide surfaces being generally V-shaped in cross-section and disposed with the apices thereof projecting toward each other.

References Cited by the Examiner

UNITED STATES PATENTS

810,826	1/1906	Vaughan	294—82
1,361,249	12/1920	Giffin	294—82
1,517,019	11/1924	Serl	294—82 X
1,758,744	5/1930	Haubert	294—82 X
2,962,998	12/1960	Long	114—218

GERALD M. FORLENZA, *Primary Examiner.*