Nov. 15, 1966 M. L. GILBERTSON ET AL 3,285,218

ANCHOR

Filed April 13, 1965 2 Sheets-Sheet 1

FIG. 1

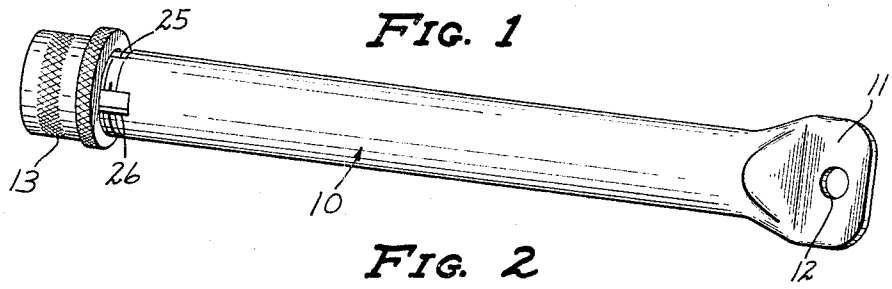


FIG. 2

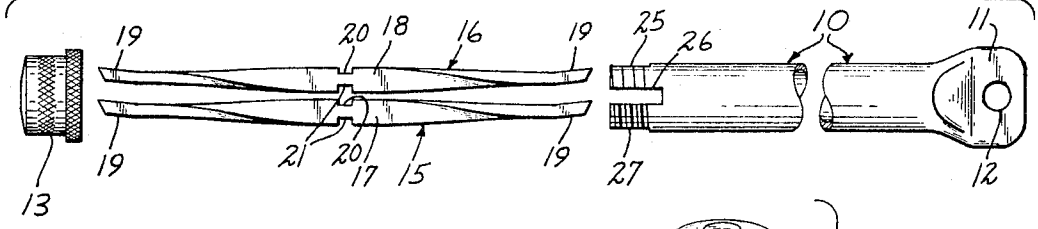


FIG. 3

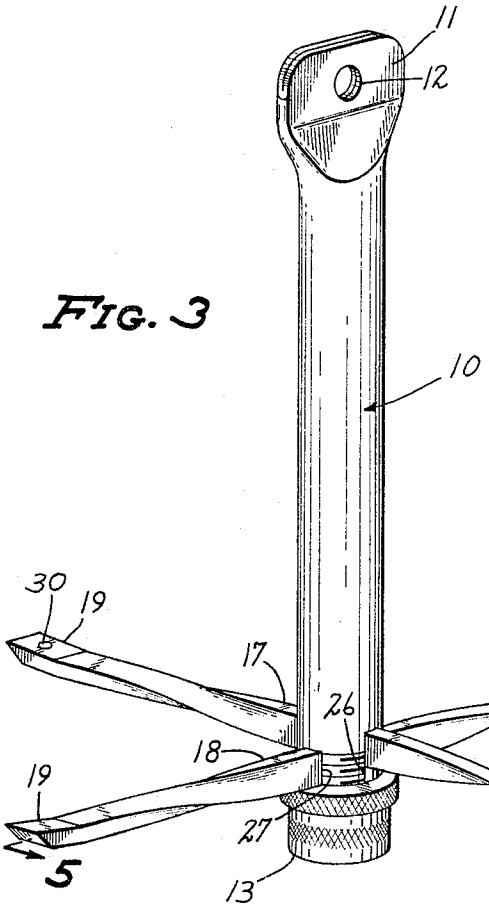
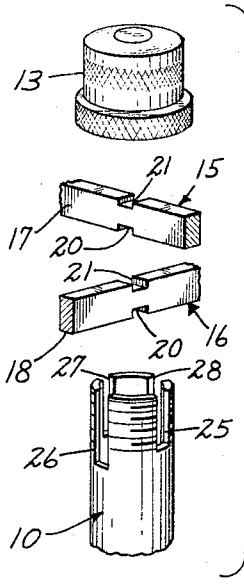


FIG. 4



INVENTORS
MARVIN L. GILBERTSON
GEORGE R. MAIDL
BY
Merchant, Merchant & Gould
ATTORNEYS

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ANCHOR

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FIG. 5

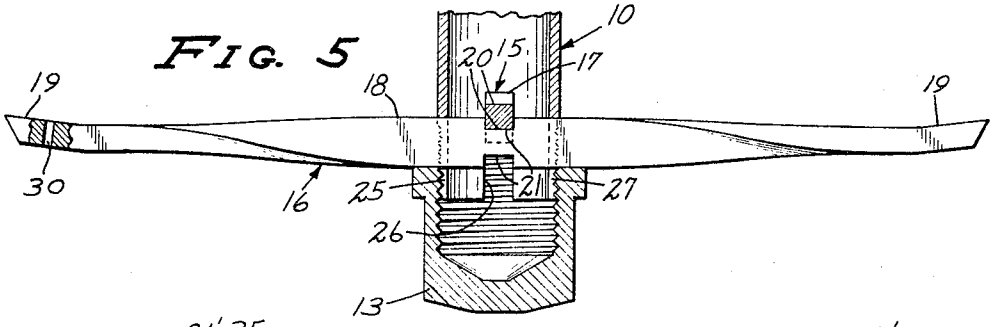


FIG. 6

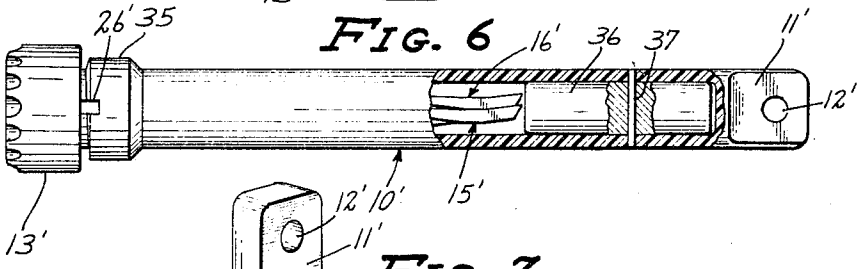
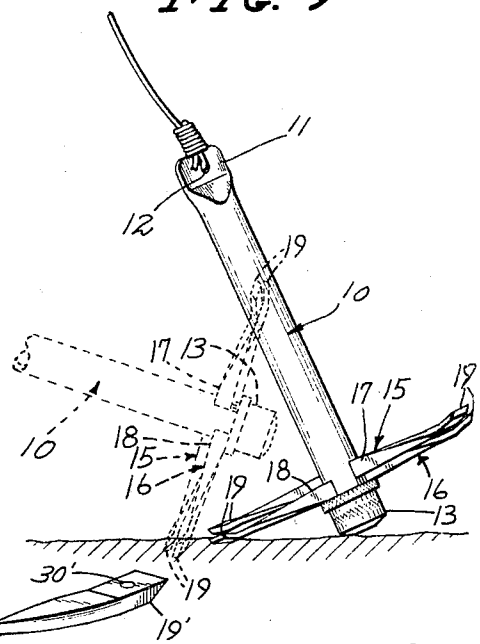


FIG. 7



FIG. 8

FIG. 9



INVENTORS
MARVIN L. GILBERTSON
GEORGE R. MAIDL
BY
Merchant, Merchant & Gould
ATTORNEYS

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3,285,218

ANCHOR

Marvin L. Gilbertson, 1709 3rd Ave. S., and George R. Maidl, 830 Adams St., both of Anoka, Minn.

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4 Claims. (Cl. 114—207)

This invention pertains to an anchor for boats and the like and more specifically to a small lightweight anchor in which the earth engaging fingers are stored within the shank while not in use.

In the field of anchors for small boats and the like a variety of sizes and shapes of objects which may be utilized as anchors have been developed. In all cases these prior art anchors are either extremely heavy and cumbersome or the portion thereof which engages the earth to provide the anchoring action protrudes at all times and becomes a hazard to the boat and its occupants during nonuse.

In the present invention a shank is provided having a hole or other means at one end thereof for attaching a rope or the like thereto. The other end of the shank has a cap or locking member threaded thereon. A pair of metal rods having a rectangular shaped cross section have mating grooves approximately centrally located therein so that the arms fit together, perpendicular to each other, in a cross. It should be understood, however, that more than two arms could be utilized in this invention and the present embodiment includes only a pair for simplicity of description.

The threaded end of the shank or body of the anchor has a plurality of openings therethrough which are approximately equally spaced radially about the circumference and which may be simply slots cut longitudinally into the shank along diameters thereof. The arms, which are fitted together so that the ends radiate spoke-like from a central axis, are fitted into the openings and held in place by the cap which is then threaded onto the end of the shank. Each of the arms is constructed so that the wider dimension of the rectangular shaped cross section is positioned parallel to the longitudinal axis of the shank in the intermediate portions thereof and the ends are twisted so that the wider dimension is perpendicular to the axis of the shank, or in a horizontal position when the anchor is upright. In this manner the arms are provided with a greater degree of mechanical strength while the ends are shovel-like to add a greater degree of holding power.

The shank or body of the anchor is hollow in the present embodiment so that the arms may be conveniently stored therein during nonuse. Thus, during nonuse the anchor forms a convenient lightweight, pipe-sized package with no dangerous projections extending therefrom. When ready for use the anchor is quickly and easily assembled into a handy lightweight anchor having a plurality of earth engaging fingers extending therefrom for maintaining a boat or the like at any desired position.

It is an object of the present invention to provide an improved anchor for boats or the like.

It is a further object of the present invention to provide an improved anchor which is lightweight and easy to use.

It is a further object of the present invention to provide an anchor which is easily disassembled and stored with no dangerous projections extending therefrom.

These and other objects of this invention will become apparent to those skilled in the art upon consideration of the accompanying specification, claims, and drawings.

Referring to the drawings wherein like characters indicate like parts throughout the figures:

FIG. 1 is a view in perspective of the anchor in stored position;

FIG. 2 is an exploded elevational view, slightly reduced in size, of the anchor in FIG. 1, portions thereof broken away and shown in section;

FIG. 3 is a perspective view of the anchor in the assembled position;

FIG. 4 is an exploded fragmentary view of the anchor in perspective illustrating the assembly thereof;

FIG. 5 is a sectional view as seen from the line 5—5 in FIG. 3;

FIG. 6 is an elevational view of a modified anchor in the stored position, parts thereof broken away and shown in section;

FIG. 7 is a view in perspective of the modified anchor in the assembled position;

FIG. 8 is a sectional view of the modified anchor as seen from the line 8—8 in FIG. 7; and

FIG. 9 is a view of the anchor in use.

In FIG. 1 the body or the shank of the anchor is designated numeral **10**. The right end is permanently closed by flattening a portion **11** thereof. It should be understood that the right end of the shank **10** might be closed in a variety of ways well known to those skilled in the art but the present method is utilized in this embodiment for simplicity. A hole **12** is drilled in the flat portion **11** to provide for the connecting of a rope or the like to the anchor. The left end of the shank **10** is threaded and a cap **13** is engaged therewith. The cap **13** may be knurled or may have some other design thereon which will facilitate gripping for easy engaging and disengaging of the cap **13** with the shank **10**.

A pair of arms **15** and **16** are formed from metal rods having a rectangular shaped cross section, which in this embodiment has one dimension substantially longer than the other. When the arms **15** and **16** are in a generally horizontal position an intermediate portion **17** and **18** of each respectively is positioned with the long dimension of the cross section substantially vertical and each of the ends **19** of the arms **15** and **16** are twisted 90° with respect to the intermediate portions **17** and **18** so that the long dimension of the cross section is positioned horizontal.

An upper and a lower groove **20** and **21** are formed approximately centrally in each of the arms **15** and **16** and extend horizontally across the arms **15** and **16** perpendicular to the longitudinal axis thereof. The grooves **20** and **21** are substantially rectangular shaped and have a width approximately equal to the narrow dimension of the cross section of either of the arms **15** or **16**. Thus, by positioning the arm **16** perpendicular to the arm **15** and vertically above it the lower groove **21** of the arm **16** fits into the upper groove **20** of the arm **15** to form a cross in which the ends **19** of the arms **15** and **16** radiate spoke-like from a central axis perpendicular thereto. The grooves **20** and **21** interlock in this position and substantially prevent horizontal movement of either of the arms relative to the other arm. It should be noted that since there is an upper groove **20** and a lower groove **21** in each of the arms **15** and **16** they could also be fitted together with the arm **15** vertically above the arm **16**. Also, in the event that more than two arms are to be utilized in an anchor the grooves **20** and **21** would be cut at an angle other than 90° with the longitudinal axis of each of the arms, which angle would depend upon the number of arms being utilized.

The shank **10** has four rectangular shaped openings **25–28** adjacent the threaded end thereof. In the present embodiment the openings **25–28** extend from the end of the shank **10** longitudinally along the shank **10** and are equally spaced radially about the circumference thereof. Openings **25** and **27** are opposite each other on the circumference and have an approximately equal depth while

openings 26 and 28 are opposite each other on the circumference and have an equal depth but slightly greater than the depth of the openings 25 and 27. The openings 25–28 are positioned so that the crossed arms 15 and 16 slide easily therein with the upper arm 16 in the openings 26 and 28 while the lower arm 15 is in the openings 25 and 27. Once the arms 15 and 16 are positioned in the openings 25–28 as explained the cap 13 is engaged with the threaded end of the shank 10 and butts against the lower arm 15 to maintain the entire assembly securely in position. It should be noted that in the event more than two arms are utilized in an anchor two extra openings for each extra arm would have to be cut in the end of the shank 10 and all of the openings would have to be equally spaced radially about the circumference of the shank 10. Thus, the ends 19 of the arms 15 and 16 radiate spoke-like from the threaded end of the shank 10 to form earth engaging fingers.

The intermediate portions 17 and 18 of the arms 15 and 16 have the longest dimension of the cross section lying parallel with the longitudinal axis of the shank 10 so that the arms 15 and 16 have the greatest strength along axes parallel to the longitudinal axis of the shank 10, which is in general the direction of forces produced on an anchor. Also, the ends 19 of the arms 15 and 16 are twisted 90° so that the longest dimension of the cross section is perpendicular to the longitudinal axis of the shank 10 and, thus, the ends 19 of the arms 15 and 16 are shovel-like to add to the holding ability of the anchor. In addition to these structural features the shank 10 of the anchor is hollow and has a sufficient length to receive the arms 15 and 16 therein for storage purposes. In the event that it is preferred to have a solid shank 10, the arms 15 and 16 are each provided with a hole 30 in one end thereof so that the entire assembly may be dismantled and conveniently connected together for storage by a wire or the like to prevent loss of any of the components. Also, one of the arms 15 or 16 may be attached to a string by the hole 30 and utilized as a depth gauge. Further, the locking member or cap 13 may take the form of a locking sleeve, not shown, which may be threadedly received on the other end of the shank 10 so as to securely lock the arms 15 and 16 in operative position.

In FIGS. 6–8 wherein like parts are indicated with like numerals with prime marks added a modified embodiment of an anchor is illustrated which is similar to the previously described embodiment except the shank 10′ and the cap 13′ are composed of some material other than metal, such as plastic or the like. The cap 13′ has a slightly different design thereon for gripping purposes since a knurled effect is very difficult to obtain in plastic and has a tendency to wear off very quickly. The shank 10′ has a collar 35 imediately above the threaded portion thereof to add strength thereto. The collar 35 extends radially outwardly from the shank 10′ and extends longitudinally along the shaft a substantial distance so that the cross sectional area of the shank 10′ is substantially increased immediately above the arms 15′ and 16′, where the forces on the shank 10′ would be the greatest.

A cylindrical piece of heavy material 36 such as lead or the like is contained within the hollow shank 10′ at the closed end 11′ thereof by means of a pin 37 passing through the walls of the shank 10′ and through the center of the weight 36. In general the length of the shank 10′ is such that the arms 15′ and 16′ fit therein when the weight 36 is in position. Te weight 36 in the nonmetallic shank 10′ makes the assembled anchor top-heavy which causes the shank 10′ to fall into a substantially horizontal position rather than maintaining a vertical position when the assembled anchor is dropped from a small boat or the like.

Thus, an anchor has been described which is lightweight and easy to handle and which has good earth gripping qualities when in the assembled position. Also, the anchor may be quickly and easily disassembled and presents a pipe-like package in the stored condition. Because the earth engaging fingers are disassembled from the shank and stored therein the anchor is extremely safe to boat and occupant alike in the stored condition.

While we have shown and described a specific embodiment of this invention further modifications and improvements will occur to those skilled in the art. We desire it to be understood, therefore, that this invention is not limited to the particular form shown and we intend in the appended claims to cover all modifications which do not depart from the spirit and scope of this invention.

We claim:

1. A boat anchor comprising:
   (a) a cylindrical shank one end having means for securing a boat thereto and the other end threaded with a locking member threadedly received thereon;
   (b) a plurality of arms having matching grooves substantially centrally located for fitting said arms together with the ends radiating from a central axis substantially perpendicular to said arms; and
   (c) openings in said shank adjacent the threaded end approximately equally spaced radially about the circumference for receiving said arms therethrough in the fitted together position said locking member maintaining said arms in said openings when threaded on said other end and the radially protruding ends of said arms forming earth engaging fingers.

2. A boat anchor substantially as set forth in claim 1 wherein the arms are composed of metal rods having a rectangular shaped cross section with the wider dimension positioned parallel to the longitudinal axis of the shank in the intermediate portions of said arms and perpendicular to said axis at the ends of said arms.

3. A boat anchor comprising:
   (a) a hollow cylindrical body having one end thereof permanently closed and including means for securing a boat thereto and the other end threaded with a matching cap adapted to be received thereon;
   (b) a plurality of arms adapted to be contained within said hollow body in a nonoperative position and having matching grooves substantially centrally located for fitting said arms together with the ends radiating from a central axis substantially perpendicular to said arms; and
   (c) openings in said hollow body adjacent the threaded end approximately equally spaced radially about the circumference for receiving said arms therethrough in the fitted together position, said cap locking said arms in said openings when threaded on said other end and the radially protruding ends of said arms forming earth engaging fingers.

4. A boat anchor substantially as set forth in claim 3 wherein the hollow cylindrical body is composed of a plastic material and contains a lead weight therein adjacent the permanently closed end.

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MILTON BUCHLER, *Primary Examiner.*

T. M. BLIX, *Assistant Examiner.*