April 23, 1957 A. M. GOLLNER 2,789,526

SNAG PROOF ANCHOR

Filed July 29, 1955

Fig.1

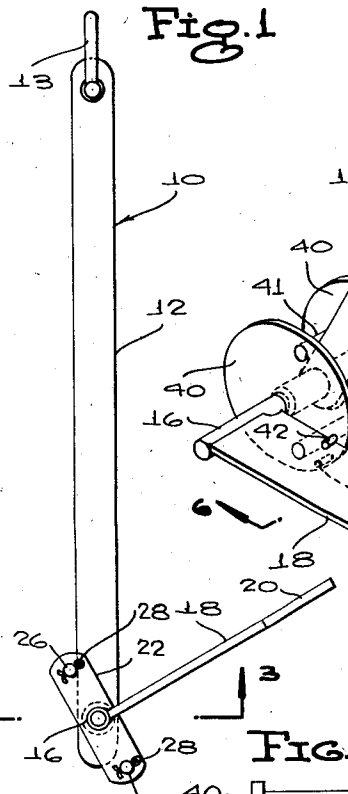


Fig.2

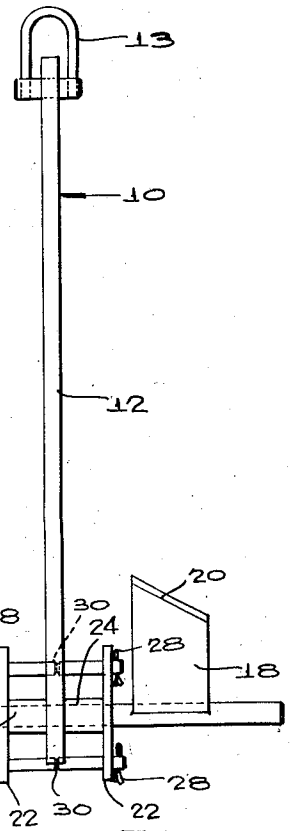


Fig.5

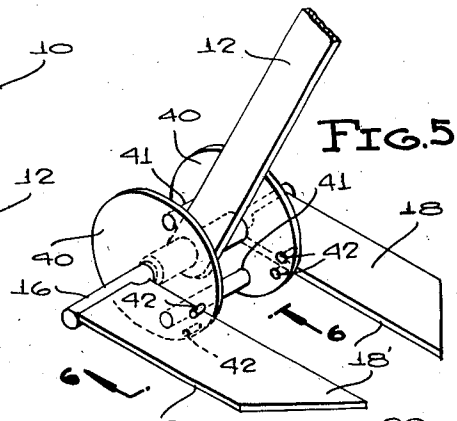


Fig.6

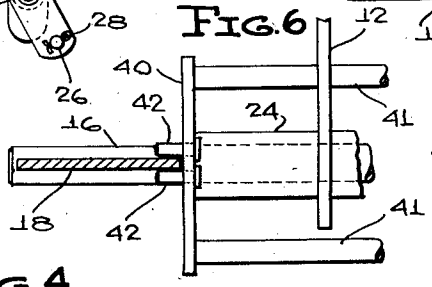


Fig.3

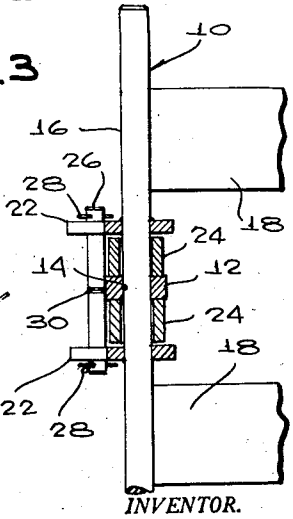
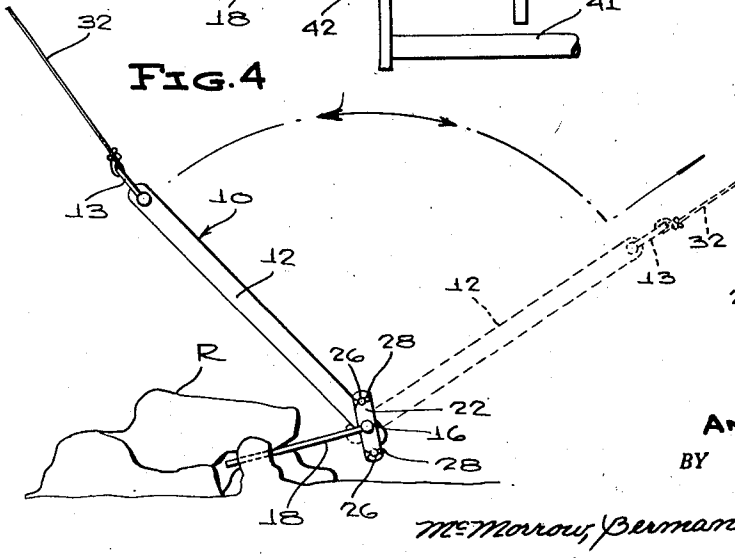


Fig.4



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SNAG PROOF ANCHOR

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1 Claim. (Cl. 114—208)

This invention relates to anchors, particularly anchors used on small boats, such as skiffs equipped with outboard motors, small motor boats, cabin cruisers, etc.

Difficulty is continually encountered by the operators of small boats, by reason of the fact that conventionally designed anchors tend, on numerous occasions, to snag on underwater obstructions, such as rocks, etc. Under these circumstances, it is very difficult to extract the anchor from the obstruction, and as a result, it is sometimes required that the anchor be cut away and lost.

The main object of the present invention is to provide a snag-proof anchor, which, when caught upon an underwater obstruction, can be disengaged from said obstruction with comparative ease and in a minimum amount of time.

Another object is to provide an anchor as described which, when disengaged from the obstruction, can be prepared for reuse with a high degree of ease and speed.

Still another object is to provide an anchor as described which, despite the highly desirable, snag proof characteristics thereof, will still be capable of manufacture at a low cost, will be rugged, and will be wholly efficient during normal use thereof.

Other objects will appear from the following description, the claim appended thereto, and from the annexed drawing, in which like reference characters designate like parts throughout the several views, and wherein:

Figure 1 is a side elevational view of an anchor formed according to the present invention;

Figure 2 is a front elevational view of the anchor as seen from the right of Figure 1;

Figure 3 is an enlarged sectional view on line 3—3 of Figure 1;

Figure 4 is a side elevational view illustrating the anchor in use, the anchor being shown in full lines as it appears when caught upon an underwater obstruction, and in dotted lines as it appears when being disengaged from said obstruction;

Figure 5 is a fragmentary perspective view of a modified form of the anchor; and

Figure 6 is an enlarged cross sectional view taken on line 6—6 of Figure 5.

My anchor has been generally designated **10** in the several figures of the drawing, and includes an elongated, straight shank **12** provided at one end with a pivoted eye **13** for attachment of an anchor rope.

At its other end, the shank **12** has an opening **14** (Figure 3) in which is rockably mounted an elongated rock shaft **16**, to the opposite end portions of which are welded or otherwise fixedly secured coplanar, elongated, flat flukes or blades **18** the free ends of which are oppositely beveled as at **20**.

At opposite sides of the shank **12**, there are welded or otherwise fixedly secured to the rock shaft **16** parallel, elongated shear pin support plates **22**, these lying in planes normal to the axis of rotation of the rock shaft

16. Between the respective plates **22** and shanks **12** spacer sleeves **24** are circumposed about the rock shaft, to properly center the shank between the plates **22**.

Carried by the opposite ends of the respective plates **22**, and extending between the plates, are shear pins **26**, said shear pins being parallel to one another and to the rock shaft **16**. The shear pins, at their opposite ends, are loosely engaged in end openings formed in the plates **22**, the ends of the respective shear pins projecting outwardly from the plates **22** and being provided with cotter keys **28** to prevent the pins from becoming detached from the plates **22**.

Medially between their opposite ends, the pins **26** are formed with circumferential weakening grooves **30**, defining shear lines along which the pins will rupture, under circumstances to be described immediately hereinafter.

The anchor rope has been designated at **32**, and in Figure 4 is illustrated as connected to the eye **13**.

In use, the flukes **18** will normally be disposed at an acute angle to the length of the shank **12**, as shown in Figure 1 and in full lines in Figure 4. Ordinarily, the anchor will engage in the bottom of the lake or other body of water in which the anchor is used. Sometimes, however, the anchor will snag upon an underwater obstruction, such as, for example, the illustrated pile of rocks R in Figure 4.

When this happens, the user pulls his boat toward the anchor, passing directly over it to the right in Figure 4. After the boat has passed over the anchor, power is applied to the boat, and the boat continues movement in the same direction, to the right in Figure 4, under heavy power. As a result, considerable force is exerted against that shear pin **26** disposed in engagement with the shank **12** in Figure 4, and almost immediately, this shear pin will break along the weakened line **30**. Since the shear pin is loosely fitted in the plates **22**, the respective, now separated ends of the shear pin will move apart from one another a distance sufficient to permit passage of the shank **12** between the two end portions of the pin, the shank thus being free to swing to the dotted line position in Figure 4, in which position it is at a wide obtuse angle to the flukes or blades **18**.

With the boat still under power, the anchor will now pull clear of the underwater obstruction R, as will be readily apparent from a study of Figure 4, since the pulling force is now applied almost directly in line with the blades **18**, in a direction to extract the blades from the obstruction on which they may have become snagged.

When the anchor has been disengaged from the obstruction, it is pulled up, and the broken shear pin is readily replaced, thus fitting the anchor for reuse immediately.

It will be noted that the shear pins serve as abutments limiting swinging movement of the blades **18** in opposite directions, the blades being free to swing from the position thereof shown in Figure 1, to an opposite position in which they are disposed to the left of the shank **12** in Figure 1, but at the same angle to the post as the angle between the blades **18** and shank **12** illustrated in Figure 1. The shear pins thus permit free rocking movement of the rock shaft and the associated flukes or blades, during normal use of the anchor to position the blades at one or the other side of the shank, depending upon the needs of the particular situation. The shear pins will be of a strength to normally prevent rupturing thereof during regular use of the anchor, so that the anchor will always hold during said normal use. However, when an underwater obstruction is encountered, the pins will shear when power is applied to the boat in a direction such that a heavy lateral pressure is applied against the weakened mid-

length portion of the shear pin in the manner shown in Figure 4.

In the form of the invention shown in Figures 5 and 6, there is a pair of spaced, circular shear pin supporting plates rotatably mounted on the rock shaft **16** adjacent to the inner longitudinal edges **18'** of the anchor flukes or plates **18** at opposite sides of the shank **12**, with the spacer sleeves interposed between the confronting faces of the plates **40** and the adjacent sides of the shank **12**. A pair of diametrically opposed abutment pins **41** extend in parallel relation between the plates **40** and said pins are secured to the plates at their opposite ends. The pins **41** are parallel to the axis of the rock shaft **16** about which the shank **12** moves in an arcuate path perpendicular to the axis of the shaft.

The respective shear pin support plates **40** carry on their outer faces, that is the faces remote from the shank **12**, pairs of circumferentially spaced shear pins, the shear pins of each pair overlying the opposite faces of the adjacent anchor fluke so that the inner longitudinal edge **18'** thereof is disposed in the space between the shear pins **42**.

Hence, with the anchor of Figures 5 and 6 snagged on an underground obstacle in the manner of the anchor **10** shown in Figure 4, the shank **12** will bear against the uppermost one of the abutment pins **41**. As pressure is applied to the shank **12**, in the manner hereinbefore described, the pressure will be transmitted by the abutment pin **41** to the rotatable discs **40** so that the lowermost ones of each pair of shear pins **42** will have pressure transmitted thereto to bear upon the adjacent face of the anchor fluke. As the pressure is increased beyond the predetermined value, these shear pins will break to permit the movement of the post in a manner similar to that shown in Figure 4, whereby the anchor blades or flukes may be extracted from the obstruction upon which they had become snagged.

As the anchor is retrieved, the broken shear pins are readily replaced, and the anchor is available for immediate reuse.

It will be noted that upon breaking of the shear pins by the pressure thereon against the associated shear flukes, the discs **40** will be freely rotatable in parallel paths perpendicular to the axis of the shaft **16** and will thus permit the free movement of the shank **12** in its arcuate path about the axis of the rock shaft **16**.

It is believed apparent that the invention is not necessarily confined to the specific use or uses thereof described above, since it may be utilized for any purpose to which it may be suited. Nor is the invention to be necessarily limited to the specific construction illustrated and described, since such construction is only intended to be illustrative of the principles, it being considered that the invention comprehends any minor change in construction that may be permitted within the scope of the appended claim.

What is claimed is:

In an anchor of the type including a shank, a shaft at right angles to and pivotally supporting the shank, and twin, coplanar flukes normally extending at an acute angle to the shank, said flukes being rigid with and extending radially from the shaft at opposite sides of and symmetrically with respect to the shank, the improvement comprising: a pair of plates carried by the shaft at opposite sides of the shank between the shank and the respective flukes; and shearable means carried by the plates arranged to normally restrain the shank against pivotal movement in a direction away from the flukes out of its acute-angular relationship to the flukes, said shank being freely swingable in said direction, on shearing of said means, from its normal position at an acute angle to the flukes to and beyond a position in which it lies in the plane of the flukes and extends in a direction from the shaft opposite that in which the flukes extend therefrom, said plates being mounted on the shaft for rotation relative to the shaft, said means including abutment pins connected between the plates outwardly from the shaft and aligned diametrically of the shaft, the abutment pins extending across the plane of pivotal movement of the shank and constituting the sole connections between the plates outwardly from the shaft, said shearable means including a pair of shear pins on each plate, the pins of each pair projecting outwardly from the plate carrying the same and embracing between them the fluke adjacent thereto.

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