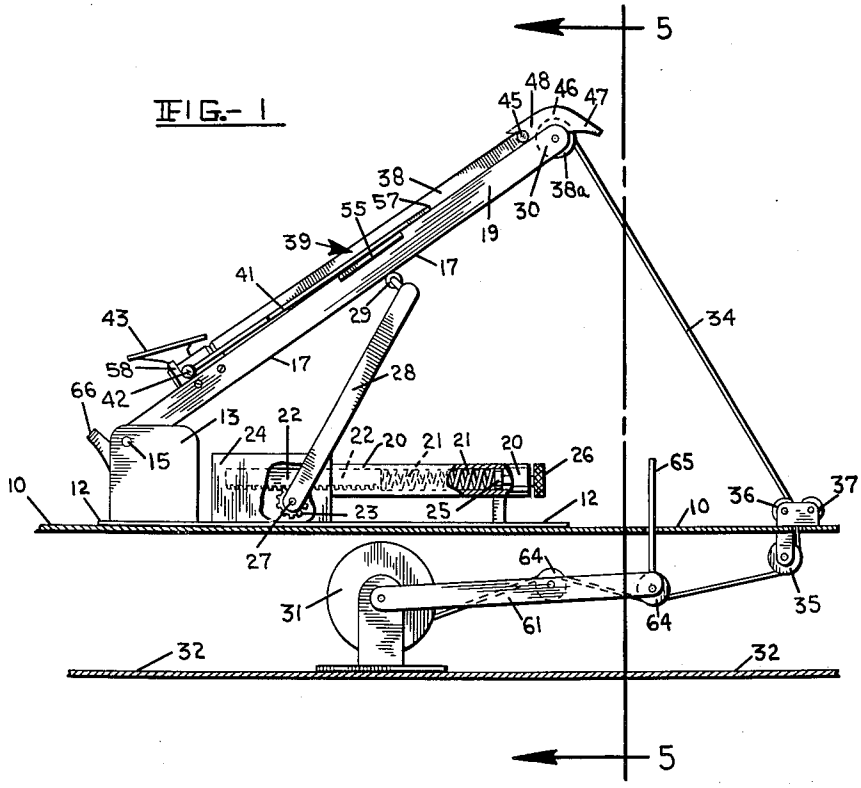
Jan. 22, 1963 F. A. SEIGER 3,074,370

ANCHOR THROW

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FIG.- 1



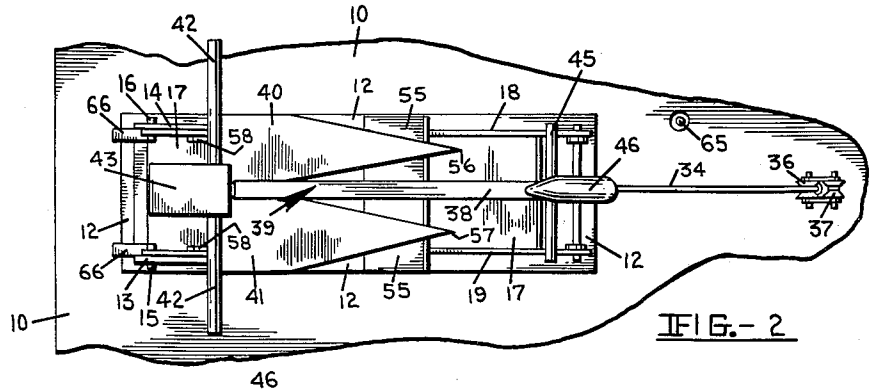


FIG.- 2

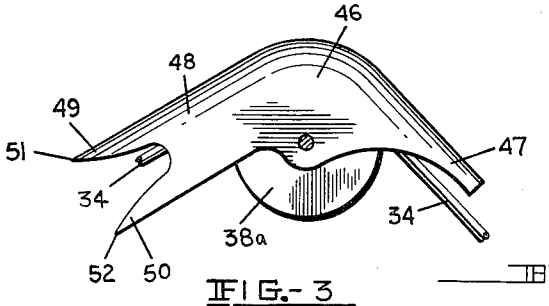


FIG.- 3

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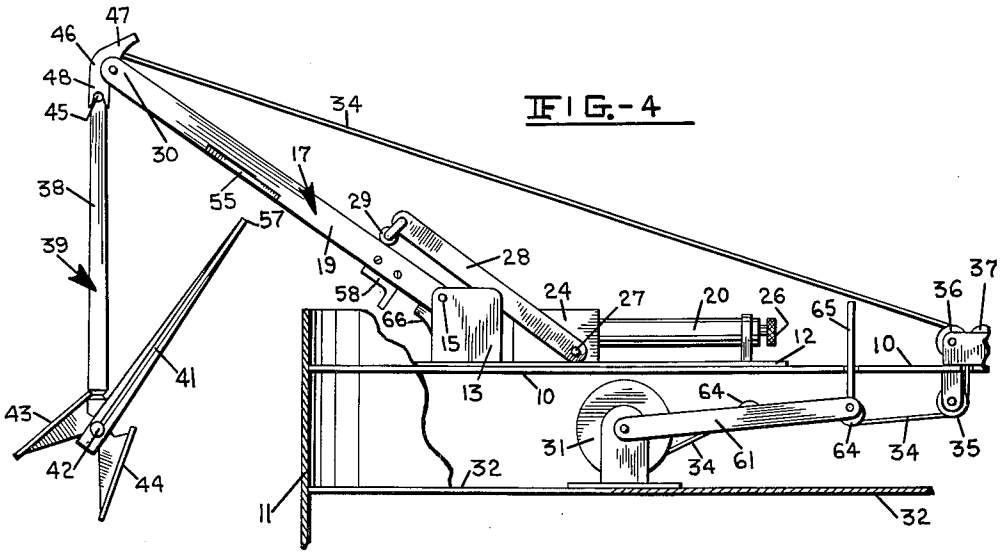
ATTORNEY

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ANCHOR THROW

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FIG.- 4



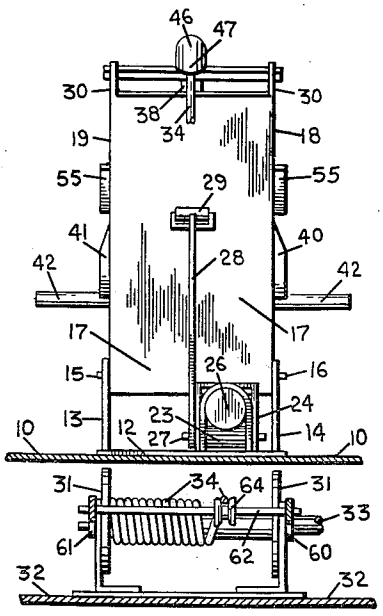


FIG.- 5

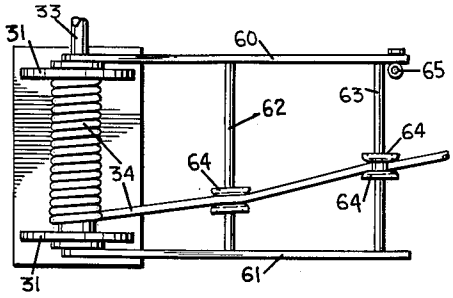


FIG.- 6

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3,074,370

ANCHOR THROW

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Filed Mar. 13, 1961, Ser. No. 95,353
2 Claims. (Cl. 114—210)

This invention relates to an anchor throw construction particularly adapted for use in boats plying inland waters, although of course it may be employed in salt water going boats. One particular use of the inventive structure is for pleasure boats where an anchor may be required at times, and the anchor is of that size and construction which is not readily handled by hand and requires some degree of power operation for not only throwing the anchor from the boat, but for retrieving it.

A primary purpose of the invention is, as above indicated, to provide a simplified mechanism which may be power manipulated to both throw an anchor and to retrieve it and put it in a storage position in the absence of hand manipulations. The invention is particularly adapted for use of cables rather than of chains, setting up the further advantage that mud and slime is not pulled in with the anchor cable as it would be with chains which require washing down as they are pulled in.

A further important object of the invention resides in the provision of an indicator as to the fact that the anchor is reposed on the bottom bed of the water so that an undue amount of cable is not payed out.

With these and many other objects and advantages of the invention as may become aparent to those versed in the art, the invention is described in the one particular form as illustrated in the accompanying drawings, in which:

FIG. 1 is a view in side elevation and partial section of a structure embodying the invention, wherein the anchor is in its intermediate position between stowing and having been thrown;

FIG. 2 is a view in top plan;

FIG. 3 is a detail in side elevation of an anchor turning device employed preliminary to stowing the anchor;

FIG. 4 is a view in side elevation and partial section of the structure shown in FIG. 1 with the anchor ready to be lowered into the water;

FIG. 5 is a view in vertical section on the line 5—5 in FIG. 1; and

FIG. 6 is a top plan view of the drum and pay out mechanism of a winch.

There is mounted on the bow end of the top deck 10 of a boat generally designated by the numeral 11, a mounting plate on which is fixed the throwing and retrieving mechanism. At the forward end of this plate designated by the numeral 12, there is mounted a pair of brackets 13 and 14 which rockably receive therebetween on pivot bolts 15 and 16 a length of a channel member 17. The channel 17 has upturned side flanges through which the pins 15 and 16 respectively extend.

A channel iron 17 lift member is provided, either to be hydraulically operated or mechanically operated depending upon the availability of hydraulic pressurizing means and the weight of the anchor employed. In the present showing, a cylinder 20 is mounted on the base 12 to extend horizontally therealong, and in the present structure, slightly thereabove. In this cylinder 20 there is a spring 21 to extend forwardly thereof against a rack bar 22 which is in constant mesh with a pinion gear 23 carried transversely of the rack bar 22 in a suitable housing 24 also fixed to the base 12. The pinion gear 23 is located under the bar 22 so that the spring 21 which is initially placed under compression between the end of the bar 22 and a head 25 adjacent the rear end of the cylinder 20, and shiftably moved to tend to compress the spring 21 by means of an outside adjusting member 26.

The pinion gear 23 is mounted on a pin 27, to which is fixed an arm 28 tending to rock upwardly and forwardly by reason of the compression spring 21 and the rack bar 22 connection with the pinion gear 23. The outer free end of this arm 28 carries an anti-friction member preferably, herein shown as a roller 29 which is positioned to bear substantially centrally against the under side of the channel bar 17. The spring 21 is of that design whereby it will normally hold the channel bar 17 in the outwardly extending position, FIG. 4, to have the upper end designated by the numeral 30 extending well out ahead of the bow end of the boat 11.

A cable drum 31 is mounted below the upper deck 10 in any suitable manner, herein shown as on a platform 32. The power driving means of the drum 31 is omitted since the invention does not reside in that power means per se, and may consist either of an electric motor or a gas engine. Of course a hand crank may be applied to the shaft 33 of the drum 31 if desired, although it is intended that the indicated power means be employed. Cable 34 is wound about the drum 31 and payed off therefrom to pass around the pulley 35 below the deck 10, thence upwardly through the deck freely to an upper pulley 36, between it and a retaining pulley 37, and thence forwardly around a pulley 38*a* rotatively carried in the outer or upper free end 30 of the channel bar 17, and thence is fixed to the shank 38 of an anchor generally designated by the numeral 39.

The anchor 39 of the design herein shown (other designs of course may be employed) comprises a pair of flukes 40 and 41 of a generally, elongated triangular flat or planar shape in each instance. These flukes 40 and 41 are fixed to what may be termed a stock or bar 42 rockably carried by the lower end of the shank 38 of the anchor 39. These flukes 40 and 41 are spaced apart sufficiently in their common plane to permit them to rock from one side to the other of the shank 38. A pair of shoes 43 and 44 are likewise fixed to the bar 42 as means for dragging on the water bed tending to rock the flukes 40 and 41 to those positions which cause points to dig into the bed for holding purposes.

The upper end of the shank 38 carries a short stock 45 in fixed position. Rockably mounted over and around the pulley 38*a* is a hood 46 which carries a tail piece 47 under which the cable 34 feeds freely to over the pulley 38*a*. The other or relatively forward portion of the hood 46 extends substantially at right angles to the tail piece 47 and is generally cylindrical in shape, and designated by the numeral 48. This portion 48 is bifurcated horizontally to provide upper and lower tongues 49 and 50. These tongues 49 and 50 taper to points 51 and 52 located in a vertical plane including the cable 34 passing therebetween.

Assuming that the anchor 39 is in the position as indicated in FIG. 4, in a lifted position, the cable 34 has been wound around the drum 31 a sufficient amount to bring the upper end of the shank 38 up to the points 51 and 52 of the hood 46, and as the cable 34 is continued in its "pulling in" travel, the stock 45, upon contacting the hood 46 will, by reason of the taper thereof to these points receive the stock 45 within the bifurcation, either directly in case the anchor is already turned to the position shown in FIG. 4, or if it happens to be rotatively disposed angularly therefrom, this stock 45 will in entering the bifurcation turn with the sloping surfaces therein and be brought to that position as shown in FIG. 4.

This position of the stock 45 being fully entered crosswise of the hood 46 limits any further travel of the shank 38 in relation thereto, so that, as the cable 34 continues to be pulled in, the pull then is on the channel bar 17 tending to rock that bar around upwardly and over against the pressure of the back roller 29 induced by the spring 21, overcoming that spring pressure until the channel bar

17 is brought around to a horizontally disposed position, wherein the arm 28 rests on the plate 12. The flanges 18 and 19 of the channel bar 17 are each cut away substantially back to the web, FIG. 1, to provide an elongated opening in each instance through which opening a fluke receiving plate 55 is fixed. As the channel bar 17 is rocked from the fore to aft positions, the flukes 40 and 41 will normally have rocked to the position shown in FIG. 4 whereby they are directed toward the open side of the channel bar 17. Since these flukes 40 and 41 have tapered outer edges, they would tend to come in contact with the edges of the flanges 18 and 19, tending to bear against those flanges, roughening them to such extent that the flukes may tend to stick and jerk as they travel therealong. The plate 55 is provided to avoid that difficulty, and is so positioned at the points 56 and 57 of the flukes 40 and 41 respectively will initially strike this plate 55 and slide through thereover as the channel bar 17 rocks rearwardly to cause the flukes 40 and 41 to rock around into substantial parallelism with the shank 38. At least the plate 55 will so take the initial contact of the points 56 and 57 and the shank will only leave that contact when the thicker portions, or rather wider portions, of the flukes may then ride along over the flanges 18 and 19 without any fluke edges tending to cut them.

As the channel bar 17 rocks from the overhang position in FIG. 4, toward the vertical position, the anchor 39 will rock to bring the stock bar 42 into juxtaposition with the flanges 18 and 19. Slightly below the bar 42 in that position, there is attached to the flanges 18 and 19 in each instance a support 58 herein shown as being a short length of angle bar, FIGS. 1 and 4, against which the bar 42 may bear upon any slacking of the cable 34, and thus prevent accidental sliding of the anchor from its stowed position on the channel bar 17.

In order to provide some indicating means, to show when the cable 34 becomes slack due to the resting of the anchor 39 on the water bed, a simple mechanism is provided. A pair of arms 60 and 61, FIG. 6, are rockably supported, on the shaft 33, one at each end of the drum 31. These arms 60 and 61 are tied together by two bars 62 and 63 one parallel with the other, and each parallel with the axis of the shaft 33. The shaft 33 is the one which may be interengaged with the power driving source (not shown). On each of the bars 62 and 63 is a pulley 64 rotatively mounted thereon, and also longitudinally slidable of the bars.

The cable 34 is carried over the top side of the pulley 64, and thence under the pulley 64 on the bar 63, the cable 34 thus going over the top of the bar 62 and under the bar 63. A rod 65 is fixed to one of the arms, herein shown as the arms 60, and extends upwardly and freely through the deck 10 to a distance thereabove. When the cable 34 is slack, the weight of the combined arms 60, 61, and pulley 64 will cause those members to drop under the influence of gravity, and thus lower the post 65. As long as the post 65 is extending above the deck 10, the normal position when the cable 34 is taut, then it is made known to the operator of the boat that the cable is still under load, and not slack until the anchor flukes 41 start to dig into the water bed. Of course as the boat pulls on the anchor 39 when it is set, the cable 34 will from time to time be under tension to raise the post 65, and that of course can be observed by the boat operator.

One additional feature needs to be mentioned and that is the fact that at the lower end of the channel bar 17, there is a pair of stops 66 fixed to the base 12, one each in the path of the flanges 18 and 19. These stops are provided to prevent the channel bar 17 from rocking beyond a position indicated in FIG. 4, where the bar 17 is shown as resting on the stops. It is of course desirable that the channel bar 17 only rock to that forwardly and downwardly inclined position as indicated in FIG. 4, which will permit the anchor 39 to be lowered without the flukes 40 and 41 in striking the boat, but it is also desirable to keep the upper end 30 of the channel bar 17 as low as possible and yet permit it to be pulled around aft by the cable 34 so that there will not be an undue leverage tending to rock the boat by reason of the cable 34 extending from the anchor 39 in its set position to a distance above the deck 10, beyond that position which is necessary as above indicated.

While I have herein shown and described the mechanism embodying the invention in the one particular form, it is obvious that structural changes may be employed without departing from the spirit of the invention, and I therefore do not desire to be limited to that precise form beyond the limitations which may be imposed by the following claims.

I claim:

1. A boat anchor throw mechanism comprising a base member; a lift member rockably carried by one end portion of said base member; an anchor; a pulley revolubly carried by the other end of said lift member; an anchor cable trained over said pulley and secured to said anchor; a compression spring; means carrying said spring and restraining it to axial linear travel under compression and release thereof; a rack bar in axial alignment with and subject to pressure of said spring theretoward; a pinion gear meshed with the rack bar and rotating with travel thereof; an arm rocked by said pinion gear; the outer end of said arm being in the path of said lift member; and means lifting said anchor by pulling in said cable over said pulley and rocking said lift member on said base member thereby rocking said arm and compressing said spring, storing sufficient energy in the spring to cause said arm to lift and rock said lift member upon release of said cable by said means and push the lift member around past a vertical position and toward a horizontal position and there retain it while said means pays out the cable to drop the anchor, the arm exerting a continuing pressure from said spring throughout said rocking.

2 The structure of claim 1, in which said spring carrying means comprises a cylinder fixed to said base member and said rack bar is guided in said axial alignment at an end portion of said cylinder into abutment with said spring.

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