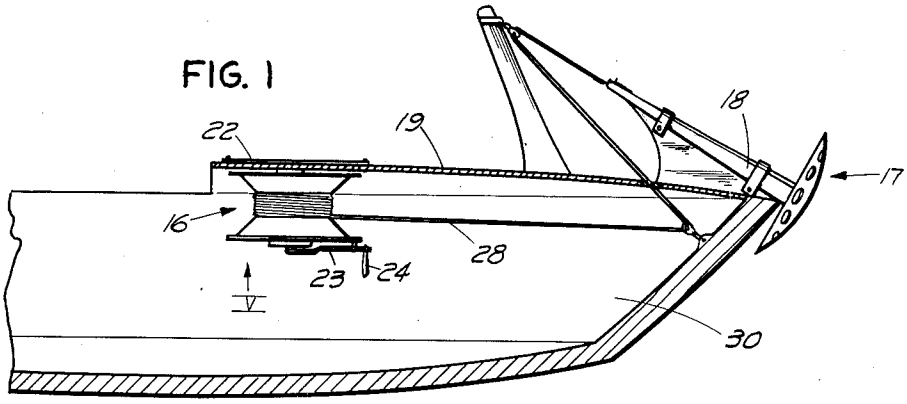
March 7, 1961 J. E. HANCOCK 2,973,918

COMBINATION ANCHOR, REEL, AND HOUSING FOR SMALL BOATS

Filed Dec. 24, 1956

FIG. 1



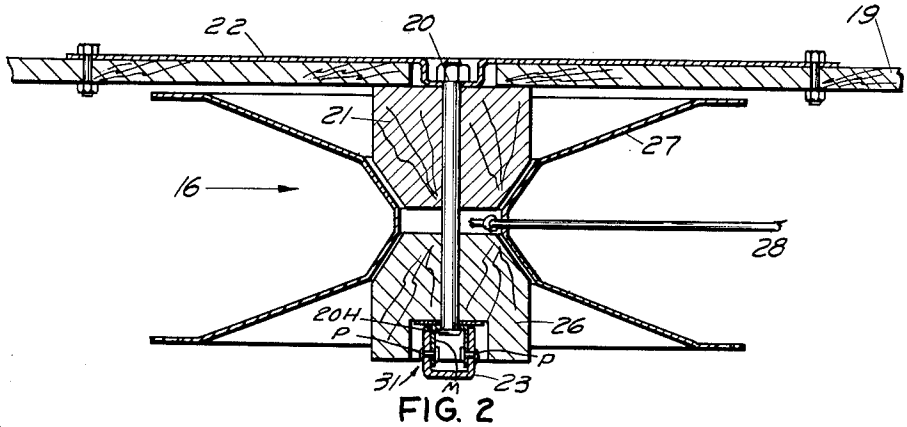


FIG. 2

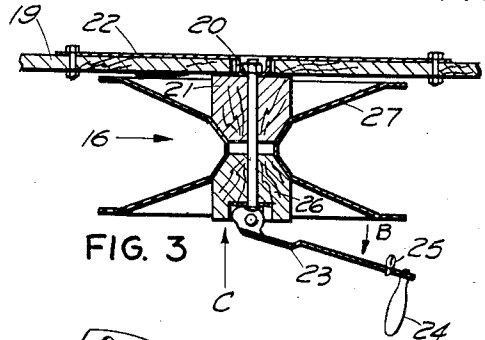


FIG. 3

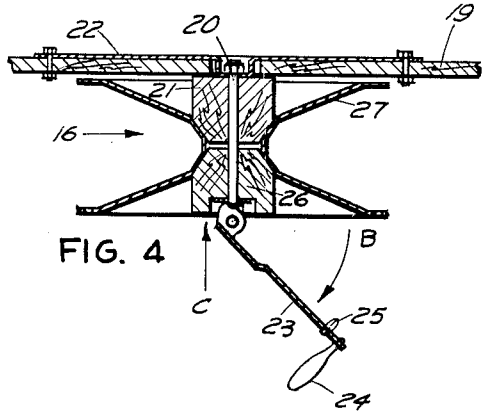


FIG. 4

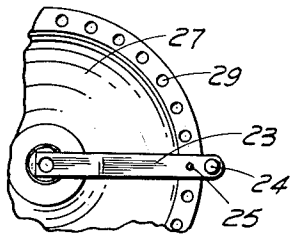


FIG. 5

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COMBINATION ANCHOR, REEL, AND HOUSING FOR SMALL BOATS

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3 Claims. (Cl. 242—99)

Generally speaking, the present invention relates to the anchor and reel art and, more particularly, relates to an improved combination anchor, reel, and housing for effectively securing small boats.

Prior art arrangements for securing small boats are mostly manually operable and have been rather casual and as a result many disadvantages are present. One of the biggest drawbacks of prior art devices is the necessity of the user having to touch the wet rope or anchor, thereby causing cold, wet, aching hands and sometimes resulting in rope burns and cuts from handling the anchor. In addition, the anchor, if not properly secured or housed, will mar and disfigure the deck or hull. The rope also will frequently entangle and prolong the anchoring process and perhaps, sweep something overboard. There is also a safety hazard present if the rope is left lying around on the deck to tangle up with somebody's feet. A large amount of water enters the boat through use of prior art devices which contributes to maintenance problems. De-anchoring is sometimes a problem with present anchors if the anchor is in a hooked or a fouled position on the ocean floor. It should also be noted that anchoring and de-anchoring with present state of the art devices is time consuming and fatiguing.

The present combination anchor, reel, and housing was developed primarily to overcome the above-mentioned problems and, generally speaking, can be said to consist of a bi-directional reel having a handle cooperable for actuating the reel into a locked and unlocked position and being cooperable, when in the unlocked position, for actuation into a winding and a free spinning position, with the handle usually having gripping means and capstan retaining means thereon. A capstan, on which the rope or cable is stored for paying out, is rotatably mounted with respect to a plurality of bearings, and with the bearings being rotatably disposed on an axle and being cooperable for actuation into a braking position upon actuation of said handle into said locked position. One of the bearings is generally axially slidable for actuation into a braking position and with full braking action taking effect when both bearings are in frictional contact with the capstan. A housing is used to receive, release, and eject an anchor, although in some instances it is not needed. Retaining and selectively operable releasing means cooperable for retaining and selectively releasing the anchor are usually attached to the housing along with propelling means for ejecting the anchor upon release from the housing. The retaining and selectively operable releasing means as well as the propelling means may be attached with respect to the anchor in some versions.

The anchor, which is mounted in the housing, is characterized by having a slidable link which is cooperable for movement along the shank of the anchor in order to selectively control the direction of force applied to the anchor. In some versions of the present invention the anchor has a curved, disc-shaped fluke at the anchor end to minimize the danger of damage to the hull.

From the above description of basic and generic forms of the present invention, it will be apparent to those skilled in the art that virtually all of the hereinbefore prior art problems and/or disadvantages are substantially entirely eliminated, met and/or overcome in and through use of the present invention.

For example, it is obvious that the combination anchor, reel and housing of the present invention is instantaneously launchable and retrievable in such a way that virtually eliminates fatiguing manual effort in connection with anchoring and de-anchoring.

With the above points in mind, it is an object of the present invention to provide an improved anchor having a de-fouling mechanism which virtually completely eliminates fouled and hooked anchors.

A further object of the present invention is to provide a housing which is cooperable for receiving, releasing, and ejecting an anchor in such a way which virtually eliminates the possibility of the anchor marring the boat and which will secure the anchor therein, thus acting as a double safety feature (the reel also secures the anchor), and will swing the anchor, upon release, out and away from the hull to prevent scratching of the boat upon entering and leaving the water.

It is a still further object of the present invention of the character set forth in the preceding objects, which is of relatively cheap, simple, easy to operate and of virtually foolproof construction.

Other and allied objects will be apparent to those skilled in the art after a careful perusal, examination, and study of the accompanying illustrations, the present specification, and the appended claims.

To facilitate understanding, reference will be made to the hereinbelow described figures, in which:

Fig. 1 is an elevational view, shown partially in section, of an illustrative reel, housing, and anchor mounted with respect to a boat;

Fig. 2 is a central cross-sectional view of the reel in a winding position with the handle in cross-section;

Fig. 3 is a cross-sectional view, at right angles to Fig. 2, of the reel actuated from a winding position and into a substantially free spinning position;

Fig. 4 is a cross-sectional view of the reel in a locked position;

Fig. 5 is a fragmentary bottom plan view of the reel as indicated by the direction of the arrow V in Fig. 1.

Generally speaking, the reel, indicated generally at **16**, the anchor **17**, and the housing **18** are mounted to the boat **30** in a manner best shown in Fig. 1. The reel **16** is mounted to the deck **19** by bolting the axle onto a mounting plate **22**. A handle **23** having gripping means **24** and resilient split locking pin means **25** is rotatably and pivotally journalled with respect to the axle **20** by means of a universal coupling **31**, best shown in Fig. 2 with part of the handle **23** not shown since it is in cross-section, and is cooperable with the reel **16** for actuation into an unlocked position, Figs. 1–3, and 5, and into a

locked position, Fig. 4, and is cooperable, when in the unlocked position, for actuation into a winding position for reeling in, Figs. 1, 2, and 5, and into a free spinning position for paying out, Fig 3. It should be noted that the coupling **31** is definitely a coupling of the "universal" type and includes the aligned pins P which connect the handle **23** with respect to an inner member M of the universal coupling **31**, which inner member M is in turn rotatively mounted on the lower end of the axle **20** and retained thereby an enlarged head **20H**, thus making it possible to both rotate the handle **23** with respect to the axle **20** and to pivot the handle **23** with respect to the aligned pins P. Selective pivotal movement of the handle **23** from the winding position, best shown in Figs. 1 and 5, downward in the direction indicated by the arrow B in Figs. 3 and 4, actuates the reel **16** into a free spinning position, as shown in Fig. 3, and the subsequent release of the anchor **17** initiates the free spinning of the capstan **27**. The axially slidable bearing **26** is actuated upward, by the cam-like pivotal movement of the handle **23**, in the direction indicated by the arrow C in Figs. 3 and 4, in order to move into braking contact with the capstan **27**. Partial braking action to prevent the rope means **28** from paying out too fast and becoming entangled with the anchor **17** is possible through selective pivotal movement of the handle **23** and the axial bearing **26**. Further pivotal movement of the handle **23** downward from the free spinning position, as indicated by the relative angle the handle **23** forms with the capstan **27** in Fig. 3, downward, in the direction indicated at B in Figs. 3 and 4, actuates the axially slidable bearing **26** upward until the rotatable bearing **26** is frictionally braking the capstan **27** into full braking contact with the symmetrically dispose bearing **21**, thereby actuating the reel **16** into the locked position, as shown in Fig. 4. The capstan **27**, on which the rope means **28** is wound, is rotatably mounted with respect to the axially slidable bearing **26** and the upwardly disposed bearing **21** and is cooperable to be frictionally braked upon actuation of the handle **23** into the locked position thereby forcing the capstan **27** into mutual contact with the symmetrically disposed bearings **21** and **26**, which are rotatably disposed on the axle **20**. The capstan **27** has handle retaining means on the rim thereof, which in the specific example illustrated takes the form of apertures **29**, shown in Fig. 5, for selective engagement with the capstan retaining means **25** in order to retain the crank **23** in the winding position. The anchor **17**, which in the particular example illustrated has a curved, disc-shaped fluke at the anchor end, as shown in Figure 1, is mounted within the housing **18**, for instantaneous release and ejection therefrom.

It should be understood that the term capstan is meant to be merely a storage drum or cylinder on which the rope is wound and is used in the same sense as a flanged reel.

In addition, the anchor is not to be limited to the one specifically described and illustrated herein and may include conventional anchors; however, the sliding link de-fouling device is cooperable with all conventional anchors.

It should be pointed out that this patent application is directed to "A Combination Anchor, Reel, and Housing for Small Boats," and that my co-pending patent application, entitled "A De-Fouling Anchor," Serial No. 630,177, filed December 24, 1956, now Patent No. 2,873,711 is directed to the anchor per se.

Numerous modifications and variations of the present invention will occur to those skilled in the art after a careful study hereof. All such properly within the basic spirit, scope and/or teachings of the present invention are intended to be included and comprehended herein as fully as if specifically described, illustrated and claimed.

For example, it is obvious that the handle and the bearings on the reel may be modified substantially and

may assume different locations and relative positionings. The reel may be modified to work through a geared arrangement. The housing may simply comprise a guide-rail arrangement.

The exact compositions, configurations, constructions, relative positionings, and cooperative relationships of the various component parts of the present invention are not critical, and can be modified substantially within the spirit of the present invention.

The embodiments of the present invention specifically described and illustrated herein are exemplary only, and are not intended to limit the scope of the present invention, which is to be interpreted in the light of the prior art and the appended claims only, with due consideration for the doctrine of equivalents.

I claim:

1. Reeling and unreeling apparatus, comprising: a bi-directional reel provided with an axle and a handle rotatably and pivotally mounted by said axle with respect to said reel, for actuating said reel into a locked and unlocked position, and for actuating said reel, when in said unlocked position, between a reel-winding position and a reel-free-spinning position; said reel including two longitudinally spaced bearings rotatably disposed on said axle and having opposed spaced inner ends, with at least one of said inner ends having a braking surface; said reel including a capstan rotatably mounted around said bearings and having a braking portion extending inwardly into a position adjacent to said braking surface; at least one of said bearings being longitudinally slidable on said axle and being positioned for forcible abutment and longitudinal slidable movement toward the other of said bearings in response to movement of said handle into said locked position, thereby forcing said braking surface into frictional braking engagement with said braking portion of said capstan; said handle having capstan retaining means controllably retainingly engageable with said capstan for retaining said handle in said reel-winding position with respect to said capstan.

2. Reeling and unreeling apparatus adapted for winding and unwinding a flexible longitudinal tensile member with respect thereto, comprising: a bi-directional reel provided with an axle and a handle rotatably and pivotally mounted by said axle with respect to said reel, for actuating said reel into a locked and unlocked position, and for actuating said reel, when in said unlocked position, between a reel-winding position and a reel-free-spinning position; said reel including two longitudinally spaced bearings rotatably disposed on said axle and having opposed spaced inner ends, with at least one of said inner ends having a braking surface; said reel including a capstan having handle retaining means adjacent one rim portion thereof controllably engageable with said handle for retaining said handle in said reel winding position, said capstan being rotatably mounted around said bearings and having a braking portion extending inwardly into a position between said opposed spaced inner ends of said two bearings; at least one of said bearings being longitudinally slidable on said axle and being positioned for forcible abutment and longitudinal slidable movement toward the other of said bearings in response to movement of said handle into said locked position, thereby forcing said braking surface into frictional braking engagement with said braking portion of said capstan.

3. Reeling and unreeling apparatus adapted for winding and unwinding an anchor line with respect thereto, comprising: a bi-directional reel provided with an axle and a handle rotatably and pivotally mounted by said axle with respect to said reel, for actuating said reel into a locked and unlocked position, and for actuating said reel, when in said unlocked position, between a reel-winding position and a reel-free-spinning position; said reel including two longitudinally spaced symmetrical bearings rotatably disposed on said axle and having opposed frusto-conical braking surfaces; said reel includ-

ing a capstan having aperture means adjacent one rim portion thereof, said capstan being rotatably mounted around said beraings and having a braking portion extending angularly inwardly into a position between said opposed frusto-conical braking surfaces of said two bearings; at least one of said bearings being longitudinally slidable on said axle and being positioned for forcible abutment and longitudinal slidable movement toward the other of said bearings in response to movement of said handle into said locked position, thereby forcing said braking surfaces into frictional braking engagement with said braking portion

of said capstan; said handle having capstan retaining locking pin means controllably removably insertable in said aperture means of said capstan for retaining said handle in said reel-winding position with respect to said capstan.

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