United States Patent [19]

Young

[11] **3,861,731**

[45] **Jan. 21, 1975**

[54] **BOAT HANDLER**

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[22] Filed: **Aug. 27, 1973**

[21] Appl. No.: **391,674**

[52] **U.S. Cl.** ..... **294/19 R,** 24/241 PL, 114/221 R, 294/26

[51] **Int. Cl.** **B63b 21/54**

[58] **Field of Search** ..... 294/19 R, 26, 78 R, 82 R, 294/83 R, 84; 24/230.5 SA, 241 R, 241 PL, 241 P, 241 PP, 241 SL; 114/221 R, 230

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[57] **ABSTRACT**

A boat handler having a hook element which can be turned to close a hook portion on an anvil piece so that it captures a boat. The handle may be tubular and extendable or solid as with wood and the hook, anvil, sleeve and stop block may be formed from resin materials having excellent stability and resistance to corrosion and deterioration under adverse weather conditions.

5 Claims, 6 Drawing Figures

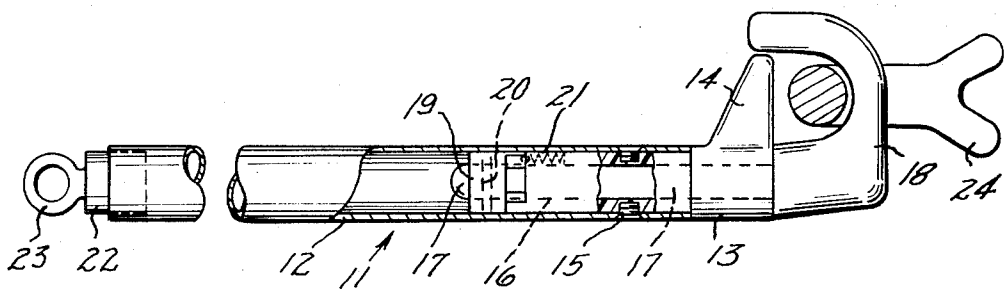


FIG. 1

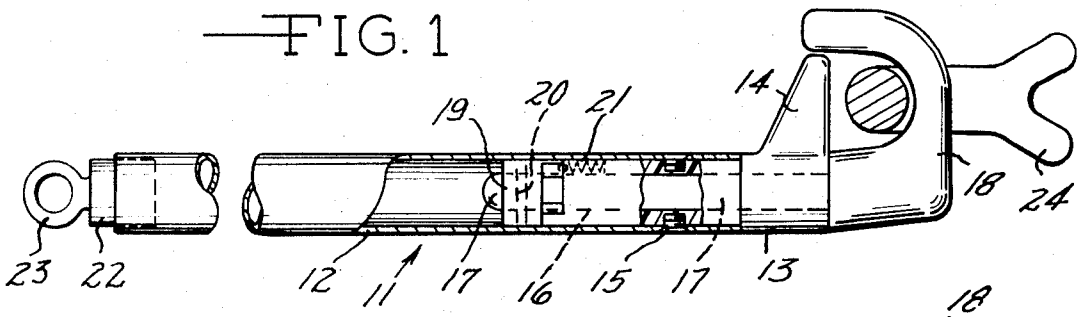
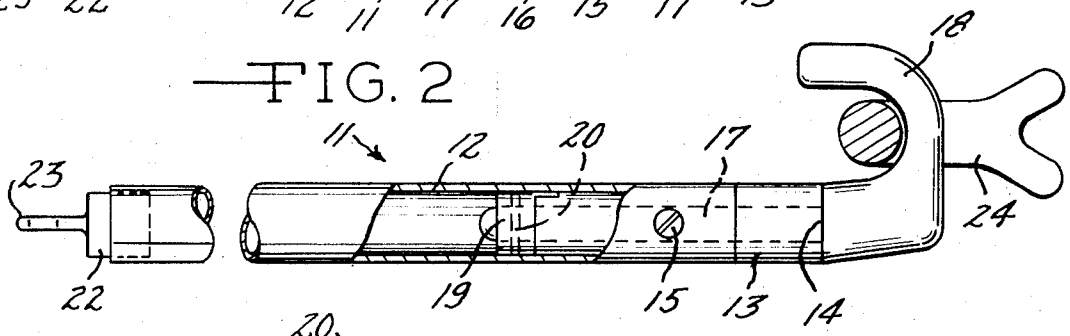


FIG. 2



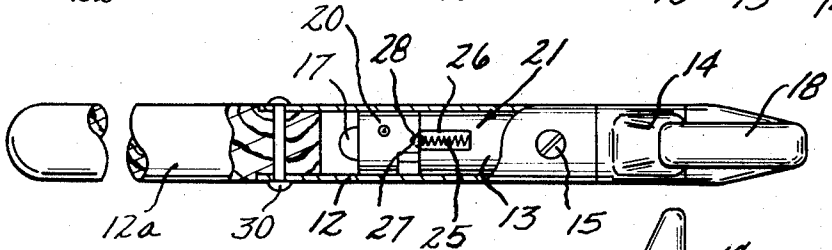


FIG. 3

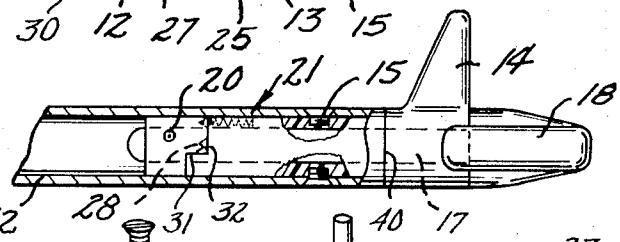


FIG. 4

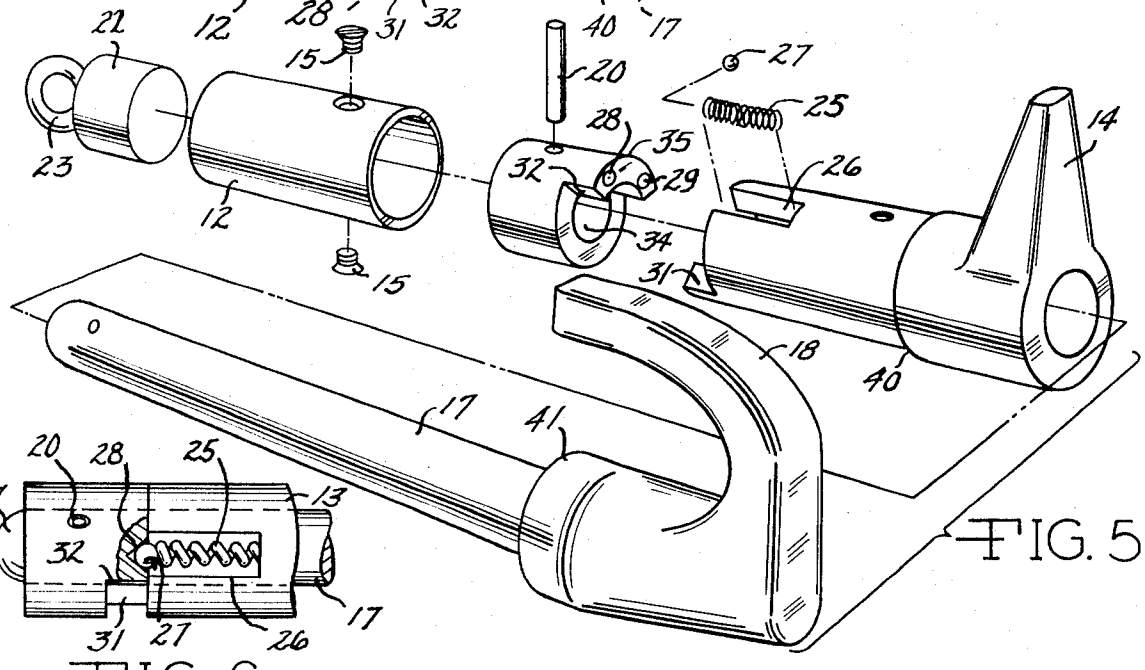


FIG. 5

FIG. 6

BOAT HANDLER

The present invention is a boat handler structure somewhat in the nature of a boat hook but having the advantage of being capable of capturing a small boat by a towing ring, a ring cleat, a rail, or the like so that the boat can be easily manipulated by pushing or pulling the boat because the boat is positively held until selectively released.

With the increase of small boats up to pleasure cruising vessels and in particular the increase in berthing at marinas and launching of small boats the problem of guiding the boat in docking and launching has enlarged by reason of the desire to have control over the boat at all times so that the boat is not damaged by impacting obstructions and so that the boat does not damage adjacent boats and property or merely to guide a craft to a sunken trailer at a launch site. To achieve manual control a rope is good only in tension and a boat hook is intended as a compression structure principally used for fending off and for occasional use under tension as for salvaging items from the water. The present invention seeks to provide a handler which selectively grips the boat or releases it and which is capable of handling in both tension and compression under capture by selective twisting of the handle.

BACKGROUND OF THE INVENTION

The prior art is reasonably well represented in the U.S. Pat. Nos. 1,536,701 to Buckingham, 1,852,629 to Sturges, 2,983,243 to Bowers, 3,273,928 to Wisniewski and 2,550,770 to Calemmo, all comprising boat hooks having a variety of forms but relying for release on a separate pull on a trip line or trip latch element. By contrast, the structure of the present invention requires no separate release and closure is easily accomplished by relative rotation of the handle. The handling device of the present invention is also useful as a hook or a fender. The materials of the present invention provide maximum durability at lowest cost while being resistant to deterioration from weather and atmosphere.

Accordingly, the principal object is to provide a boat handler having improved characteristics extending its use beyond the conventional boat hooks.

Still another object is to provide a relatively lightweight and durable construction.

Another object is to provide an economical boat handler which is of low cost and may be extended as desired.

Other objects including convenience, rugged serviceability, and lightness without sacrifice of strength will be appreciated as the description proceeds.

IN THE DRAWING

FIG. 1 is a side elevation view of a boat handler in accord with the present invention and shown in the capture position.

FIG. 2 is a side elevation view of the structure shown in the FIG. 1 with the handle and anvil turned 90° while the hook is shown still grasping the eye element.

FIG. 3 is a top plan view of the structure shown in FIG. 1 and partially cut away to show the detent between stop block and sleeve and indicating a solid wood handle secured to the tubular encasement.

FIG. 4 is the structure seen in FIG. 3 but with the anvil element turned 90° to open the hook.

FIG. 5 is an exploded perspective view of the structure of the boat handler and indicating the component relationship thereof.

FIG. 6 is a side elevation view of the stop block and anvil element with detent element exposed.

GENERAL DESCRIPTION

In general, the present invention comprises a boat handler having a tubular handle which, at the hook end, encases a concentric sleeve element. The handle is secured to the sleeve element so that rotational movement of the handle results in corresponding movement of the sleeve. Integral with the sleeve is an anvil portion which projects outwardly and radially from the end of the sleeve and supporting handle. A hook element extends through the sleeve and the shaft portion of the hook is journalled in a concentric opening in the sleeve element. The hook portion can thus be rotated in relation to the sleeve to close on the anvil or to open as by rotation away from the anvil. The shaft portion of the hook is terminally attached to a stop block which is notched to allow limited rotation of the hook. Detent means are interposed between the stop block and the sleeve where they interface so that selected stop positions are provided for the movement of the hook element in respect to the anvil element. One position, for example, is at closure where the hook contacts the anvil. Another position is the position at, say, 90° from closure where the hook is open. With this structure, a boat operator can extend the hook into or over a ring, eye, rail or cleat, turn the handle, and thus secure the craft for manipulation to docking or launching or guidance to a towing trailer hoist or to a mooring position without releasing control as between push-pull motion. Release is simply accomplished by rotation of the hook by rotation of the anvil away from closure on the hook. The reach to the boat is adjustable allowing the user easy access and movement without stepping into the water or off of dockside. The boat is a captive vessel during such manipulation and cannot get away with tides or current. The principal mechanical parts are preferably molded or formed from resin material having good strength, good dimensional stability and resistance to weathering. These elements may be made from metal, but the lighter metals are likely to deteriorate under marine usage and more easily mar boat hulls and surfaces. Accordingly, the resins having equal or better properties to ABS (acrylonitrile butadiene styrene polymers) are preferred.

SPECIFIC DESCRIPTION

Referring to the drawing and with particularity to the FIG. 1 thereof, the boat handler **11** comprises an elongate tubular handle **12**, a sleeve element **13** secured inside one end of the tubular handle and the sleeve element **13** includes a radially extending anvil portion **14**. The sleeve portion **13** is fixed to the handle as by screws or other fasteners **15** or by staking or crimping so that rotation of the handle **12** will cause corresponding rotation of the sleeve **13** and the anvil portion **14**. Further, it will be appreciated that the sleeve **13** may be integral with the handle **12**. The sleeve **13** has a coaxial elongate base **15** therethrough and the bore **16** will be seen to journal the shaft extension **17** of the hook **18**. The shaft **17** is preferably integral with the hook **18** but the shaft **17** may be a separate piece keyed to or pinned to the hook **18** so as to turn with the hook

18. The shaft 17 extends through the sleeve 13 and is connected to a stop block 19 as by the roll pin 20 so that the stop block 19 rotates with rotation of the hook 18. As will be seen, the stop block 19 is concentric within the handle 12 and concentric about the shaft 17 and provides a buttress limit stop for relative rotation of the hook 18 to the sleeve 13 and anvil 14. The stop block 19 also secures the hook 18 to the sleeve 13 against axial withdrawal therefrom and provides a detent receiving surface at the interface as between the stop block 19 and sleeve 13. Detent means 21 acting between the handle-fixed sleeve 13 and the relatively movable stop block 19 provides selected detent stop positions at, for example, closed position of hook 18 to anvil 14 and open position when, as will be seen, the hook 18 is moved 90° or more from closure on the anvil 14. At the end of the handle 12 opposite the sleeve end, a plug 22 is provided which includes an integral eye or ring 23. This permits the attachment of a tether rope or provides a convenient racking means for hanging up the handle 11 when not in use. The plug 22 is firmly secured by pinning, cementing or other fastening means to the handle 12 and assists in providing buoyancy to the tubular handle 12. As shown in FIG. 1, the hook 18 has captured the eye or cleat element 24 on a boat (not shown). This may be an eye 24 at the bow of the boat.

In FIG. 2 the handler structure 11 of FIG. 1 has been opened by rotation of the handle 12 through 90° so that the handle attached anvil 14 is correspondingly rotated to the extent of travel allowed by the stop block 19 and away from closure against the hook 18 and the hook 18 can then be withdrawn from the bow ring, eye, rail or cleat 24. The detent means 21 retains the hook 18 in the position shown in FIG. 2 subject to the detent being overcome by turning or twisting the handle 12.

In FIG. 3 the detent assembly 21 is seen to comprise a spring 25 in a pocket 26 located in the sleeve element 13. The spring 25 acts against a ball or spherical headed plunger 27 so that it nestably seats in the female spherical impression 28 provided in the upper surface of the stop block 19. Plural of such detent locations may be provided but ideally there should be a detent as shown at the open extreme and the closed extreme of movement between hook 18 and anvil 14. In the FIG. 3 the tubular outer sheath or handle 12 is shown connected to a solid elongate wooden extension handle 12a and connected in the tubular handle 12 as by the fastener element 30 shown as a rivet. Swaging, crimping or other fastening means may be employed. The handle extension 12*a* may be removable as desired and telescopic extension handles may also be used provided that upon extension the connections are secured against rotation and collapse or withdrawal as by the fastener 30.

FIG. 4 is a partial showing of the structure described in FIG. 3 but with the sleeve 13 and integral anvil 14 turned to the open position and the stop shoulder 31 on the sleeve 13 abuts the fixed stop block shoulder 32 and, as can be seen, the detent 21 has moved out of engagement in the dimple or impression 28. The pin 20 or other fastener secures the stop block 19 to the shaft 17 of the hook 18 for movement therewith. The fasteners 15 secure the handle 12 firmly to the sleeve 13 so that the sleeve 13 turns with the turning of the handle 12 on its axis.

In FIG. 5 the boat handler 11 is shown in exploded relation to indicate the simplicity of construction. The hook 18 may be secured to the shaft 17 as by integral molding, by connection in which the hook is molded to and around a headed upset on the shaft 17 or in other manner as by pins, rivets, or fasteners. By casting the hook 18 and shaft 17 in resin material in one piece the strength is satisfactory and a lighter weight is achieved than using brass, iron, or die cast metal. The shaft 17 is extended axially through the central cavity 33 running through the sleeve 13 of the anvil piece 14 and also through the cavity 34 in the stop block 19 and the pin 20 is driven through the shaft 17 locking the stop block 19 to the shaft 17 and preventing withdrawal of the shaft 17 from the cavity 33 in the sleeve 13. Since the stop block includes the stop shoulder 32 on the extension 35 which limits relative movement between the sleeve 13 and stop block 19, the limit of movement is 90 degrees to engagement with the corresponding stop shoulder 31 on the depending edge of the sleeve 13. The detent elements of spring 25 and ball 27 are inserted in the spring recess 26 for engagement with the depressions 28 and 29 in the stop block 19. These are secured against removal when the tubular handle element 12 is slipped over the described assemblage. Then the tubular handle 12 is staked, fastened or crimped securely to the sleeve 13 in abutting relation against the exterior shoulder 40. The shoulder 41 at the connection of shaft 17 to hook 18 provides a bearing shoulder relationship of anvil 14 to hook 18. The plug 22 is inserted in the handle 12 so that the ring 23 extends therefrom.

In the FIG. 6 the relation between stop block 19 and sleeve 13 is best appreciated at the detent 21, the ball 27 biased by the spring 25 into the depression 28 until displaced by rotational forces on the hook 18, shaft 17, and stop block 19 countering the manually applied rotational forces transmitted through the handle to the sleeve 13 and anvil 14. Then the detent is reestablished at 29 as seen in FIG. 5 in the full open position. The pin 20 fixes the relationship of the shaft 17 to the stop block 19 as indicated.

OPERATION

In operation, the user of the boat handler 11 can open the hook 18 from closure against the anvil 14 and then slip the hook 18 over a cleat, bow ring, or rail, for example, and then turn the handle to close the hook 18 on the anvil 14 to provide a secure and constant grip on the boat. Then the boat can be pushed or pulled without repositioning of the handler 11 and easily guided to berth or launch or retrieval on a boat trailer or merely guided safely and gently to a well. With handle extensions the structure can be elongated to meet different handling situations and the plastic or resin parts in anvil 14 and hook 18 avoid extreme weight at the working end and are easily kept free of corrosion in fresh or salt water environments. Suitable resins are polyvinyl, filled resins, high density polyesters, polypropylene and various compoundings of Teflon or Nylon, the latter being the proprietary named resins belonging to the E. I. du Pont deNemours Company. Another low cost resin material giving excellent results is ABS (acrylonitrile butadiene styrene polymer) which provides excellent mechanical and strength properties for the indicated parts.

Having thus described my invention and in particular one operative embodiment thereof, others skilled in the art will appreciate various improvements, changes and

modifications and such improvements, changes and modifications are intended to be included herein limited only by the scope of my hereinafter appended claims.

I claim:

1. A boat handler device comprising:

a tubular handle;

a sleeve element fixedly and coaxially secured in one end of said tubular handle and having a radially extending anvil portion;

a hook element having a shaft extension running coaxially through said sleeve element and rotationally movable in said sleeve to selectively close on said anvil portion of said sleeve;

a stop block secured to the end of said shaft extension for rotation therewith and bearing against said sleeve in prevention of withdrawal of said hook element from said sleeve and limiting rotation of said hook in relation to said sleeve element; and

detent means intermediate said sleeve and said stop block parallel to the axis of said sleeve and providing one or more selected stop positions for said hook rotation.

2. In the boat handler of claim **1** including an eye provided on the end of the handle remote from said hook.

3. In the boat handler of claim **1** wherein said tubular handle is locked drivably for rotation of said sleeve to a handle extension inserted in said tubular handle and drivably secured thereto for transmitting rotational and axial force.

4. A boat handler device comprising:

an elongate handle;

a tubular sleeve extending from said handle;

an anvil piece coaxially supported in said tubular sleeve and the anvil portion thereof extending radially therefrom;

a hook element having a shaft portion extension passing axially through said anvil piece whereby said hook portion is rotatable toward and away from closure against said anvil;

a stop block element secured to the end of said shaft portion of said hook in prevention of withdrawal of said shaft portion of said hook from said anvil piece and said stop block in contact with said anvil piece at the end next adjacent said handle; and

detent means parallel to the axis of said sleeve including a spring located intermediate said stop block and said handle end of said anvil piece whereby rotation of said hook is detentably oriented at an open and a closed position.

5. In the boat handler device of claim **4** wherein said detent means includes a spring pocket in said anvil piece into which said spring is located and pockets in said stop block at one or more extremes of rotation; and

a ball faced element biased by said spring toward said stop block.

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