United States Patent [19]

Jones

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[54] **BOAT ANCHOR MOVEMENT SIGNAL DEVICE**

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[52] **U.S. Cl.** **340/282,** 33/126.5, 340/29, 340/283

[51] **Int. Cl.** **G08b 21/00,** B63b 45/08

[58] **Field of Search**.....340/283, 282, 29; 33/126.5

[56] **References Cited**

UNITED STATES PATENTS

2,810,120 10/1957 Parker.....340/282

3,418,627 12/1968 Lyons.....340/282

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[57] **ABSTRACT**

A warning signal device for boats indicating a movement to a different relative position on a body of water includes a support member to be mounted on a boat and a signal member energized by a switch upon a selected magnitude of movement of a member having a line member connected to one end thereof and a weight connected to the line and placed on the bottom surface of the body of water whereby relative movement increasing distance between the weight and the boat energizes the signal member.

7 Claims, 4 Drawing Figures

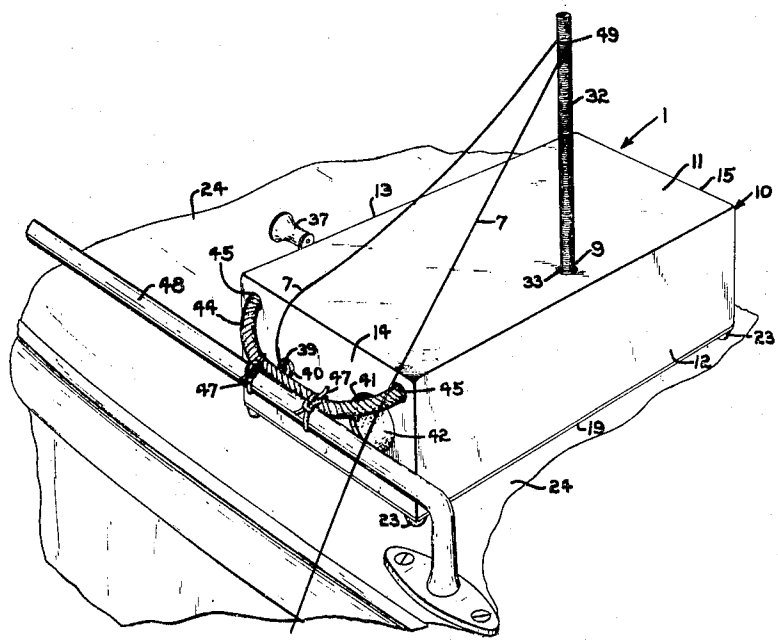


Fig. 1.

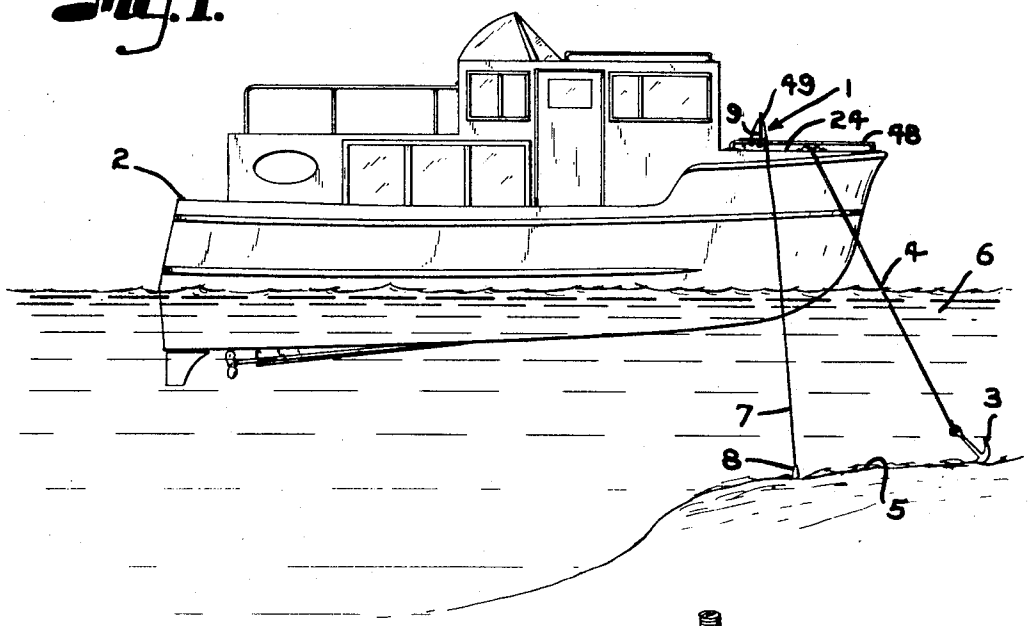
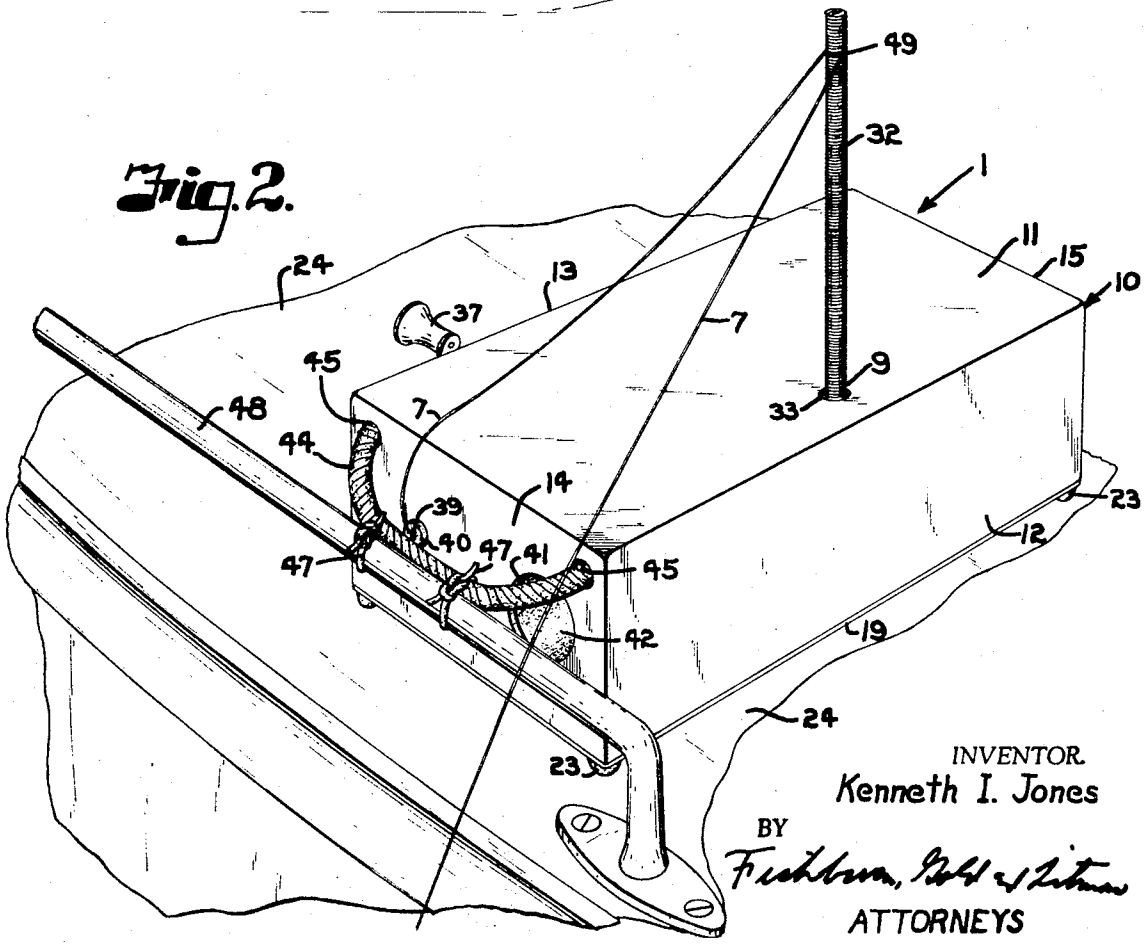


Fig. 2.



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Fig. 3.

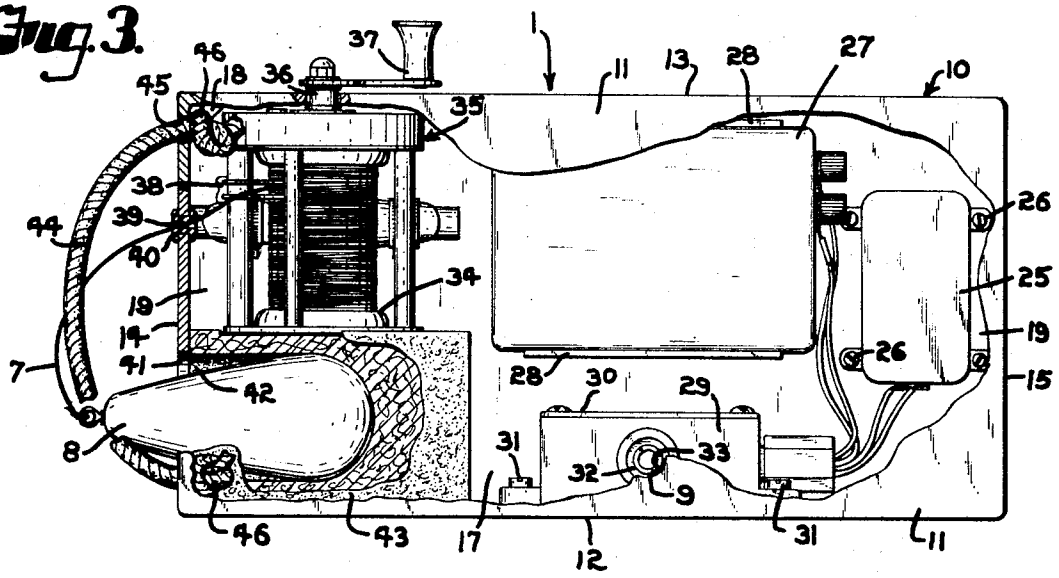
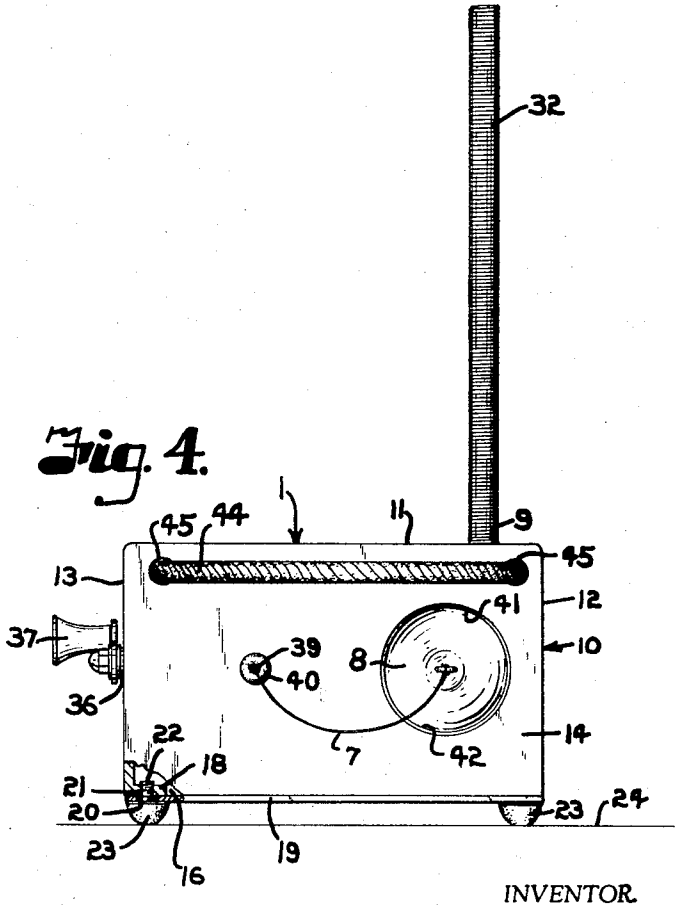


Fig. 4.



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BOAT ANCHOR MOVEMENT SIGNAL DEVICE

FIELD OF THE INVENTION

The present invention relates to warning devices and more particularly to a warning signal device for use on boats and operative to energize a signal upon movement of the boat from a selected position.

BACKGROUND OF THE INVENTION

Boats having sleeping accommodations are in common use. Conventional anchors hold the boats in ordinary conditions. Such boats may be anchored in a cove or the like in a calm atmosphere and the occupants retire to bed with a belief they have no worry. This sense of security is false as it is not unusual for a sudden wind or bad weather condition to arise and cause the boat to move dragging the anchor. In a short time the boat may be blown onto the shore or by other movement placed in a position of peril or likely damage to the equipment or personel. There have been attempts to provide warnings of such peril, but the warning equipment has been very expensive difficult to set up or use or undependable. The present invention eliminates the heretofore difficulties or failure and provides a positive solution for the problem.

SUMMARY OF THE INVENTION

The principal objects of the present invention are: to provide a warning signal device for boats on a body of water operative to warn passengers of excessive movement of the boat toward or away from shore as by high winds, high waves, and the like which drag the anchor; to provide such a signal device having an arm member operating a switch connected to a signal wherein movement of the arm member in response to movement of the boat relative to a weight placed on a bottom surface of the body of water and connected to the arm member by a suitable line member is operative to complete a circuit to the signal member; and to provide such a signal device which is compact, portable, economical to manufacturer, and particularly well adapted for the proposed use.

Other objects and advantages of this invention will become apparent from the following description taken in connection with the accompanying drawings wherein are set forth by way of illustration and example certain embodiments of this invention.

The drawings constitute a part of this specification and include an exemplary embodiment illustrating various objects and features of the warning signal device of the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an elevational view of a boat having an anchor and a warning signal device embodying features of the present invention mounted thereon.

FIG. 2 is an enlarged perspective view of the signal device.

FIG. 3 is an enlarged plan view of the signal device with portions broken away to better illustrate the operative parts thereof.

FIG. 4 is an enlarged end elevational view of the signal device with portions broken away to illustrate means for supporting same on a boat.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring more in detail to the drawings:

As required detailed embodiments of the present invention are disclosed herein, however, it is to be understood that the disclosed embodiments are merely exemplary of the invention which may be embodied in various forms that are different from those illustrative embodiments presented herein. In this regard, it is to recognize that warning signal devices, in accordance herewith, may be embodied in various forms and, furthermore, that such signal devices may be variously housed and supported on a boat, however, the disclosure hereof is presented only as a representative basis for teaching one skilled in the art to variously employ the present invention in virtually any appropriate detailed structure.

In the disclosed embodiment of the present invention, the reference numeral **1** generally designates a boat anchor movement signal device for use on a boat **2** which has an anchor **3** on a chain or rope **4** which may be paid out until said anchor engages a surface **5** defining a bottom to a body of water **6** in a manner to normally hold the boat against drifting or other undesired change of location.

The signal device **1** is a structure adapted to be secured on a boat **2** and have a suitable boat movement responsive structure connected thereto such as a line **7** with a weight or the like **8** on an end thereof paid out to rest on the bottom **5** of a body of water **6** on which the boat **2** floats. The line **7** has a suitable connection with a signal or alarm energizing apparatus **9**. The line between the signal device **9** and the weight **8** is such that if a wind or other forces cause the boat to move dragging the anchor **3** or to have other excessive movement of the line **7** will become taut and will actuate the signal energizing apparatus to sound an alarm rousing the boat operator or occupant to alert them to take proper corrective measures. The structure is such that relative movement of the boat **2** and weight **8** changes the distance therebetween and actuates the signal.

The signal device **1** includes a support member or housing **10** having a top wall **11**, side walls **12** and **13** and end walls **14** and **15** suitably connected to define a structure having an open bottom **16** leading to a chamber **17** defined by said walls. It is preferred that the top, side and end walls be integrally formed as by casting or the like and the side and end walls preferably have flanges or lugs **18** extending inwardly from the lower edges thereof for mounting a bottom closure **19**. In the structure illustrated the bottom closure **19** is a plate member having aperatures **20** each aligned with a respective threaded bore **21** in the flanges or lugs **18** to receive suitable fasteners to secure the plate to the housing. In the structure illustrated, the fasteners are screws **22** having heads provided with resilient pads **23** to form feet for the signal device. It is preferred that the pads be of rubber or the like to engage a supporting surface such as a deck or the like **24** and resist movement thereover.

It is preferred that the apparatus for sounding an alarm be located in the housing **10**. In the structure illustrated, an audible alarm such as a buzzer, bell or the like **25** is suitably secured by fastening devices **26** to the

upper surface of the plate 19. Power to actuate the alarm is furnished by a battery 27 supported in spring clips 28 mounted on the plate 19 and extending upwardly therefrom to resiliently grip the battery and hold same in place. A switch structure 29 is in the electrical circuit from the battery 27 to the alarm 25 and in the illustrated structure said switch is a micro-switch having a housing 30 secured by suitable fastening devices 31 to the side wall 12 of the housing 10. The switch structure has an actuator in the form of an arm 32 extending upwardly from the housing 30 through an opening 33 in the top wall 11 of the housing 10. The micro-switch and actuator may be any conventional structure of the type wherein the switch is operated by movement of a control arm in any direction. In the illustrated structure, the arm 32 is in the form of a tightly wound coil spring providing an upstanding arm to which the line 7 is secured as shown in FIG. 2.

The structure is provided with means for storing a quantity of line 7 and permitting same to be paid out from the boat. In the structure illustrated, a quanity of line is stored on a reel drum 34 of a reel structure 35 positioned in the chamber 17 in the housing 10 and having a shaft 36 extending outwardly from the side wall 13 and mounting a crank 37 for turning the reel. In the structure illustrated, a reel 35 is a conventional casting reel having a line guide 38 movable back and forth to spool the line on the reel as it is wound thereon. The line 7 extends from the reel drum 34 through the line guide and through an aperture 39 in a bushing 40 located in the end wall 14 of the housing. The end of the line is connected to the weight 8. When not in use or in travelling position for the boat, the weight 8 is stored in a holder. A suitable size opening 41 in the end wall 14 aligns with a socket or cavity 42 formed in a body 43 of suitable resilient material such as a resilient foam, which is positioned between the reel 35 and the side wall 12 of the housing. The socket 42 is such that it will receive a substantial portion of the weight 8 and is of suitable size to resiliently engage said weight to hold same until pulled therefrom for use. In the structure illustrated a handle 44 for carrying the signal device 1 is in the form of a flexible member extending through openings 45 in the end wall 14 and having abutment member 46 on ends thereof inside of the housing. In use suitable fastening means 47 secure the housing 10 or handle 44 to a fixed member such as rail 48 or a boat located adjacent to or on a surface 24 on which the housing 10 rests.

In using a device as constructed as described and mounted on a boat 2 which is to be anchored in a desired location, the boat is moved to the location and the anchor 3 and rope 4 paid out and the anchor engaged with the bottom 5 to hold the boat in position. Then the weight 8 is pulled from the socket 42 and dropped overboard whereby the weight sinks until it rests on the bottom 5. The line is then wound or otherwise secured as at 49 adjacent the upper end of the arm 32 and the portion of the line from the arm 32 to the reel 35 is rewound to provide only necessary slack therebetween. If a wind or water movement causes the boat to move dragging the anchor 3, there will be relative movement between the position of the boat 2 and the weight 8 as the weight will also tend to be dragged on the bottom and this will provide a pull on the line 7 which, even though small, will tilt the arm 32 to actuate the micro-switch completing the circuit between the battery 27 and alarm 25 sounding same to arouse the occupants of the boat whereby they can take care of any necessary maneuvers or actions to assure safety of the boat and occupants. When the time comes to move the boat the line 7 is detached from the arm 32 and the crank 37 operated to wind the line onto the reel drum and when the weight is adjacent to the end wall 14, the weight is inserted into the socket 42 and the structure is then ready for travel.

It is to be understood that while I have illustrated and described one form of my invention, it is not to be limited to this specific form or arrangement of parts herein described and shown.

What I claim and desire to secure by Letters Patent is:

1. An anchor boat movement signal device comprising:
   a. a housing having a signal means associated therewith, said signal means having an alarm;
   b. means on said housing adapted to be secured to a boat to connect said housing to the boat with limited movement therebetween;
   c. a weight adapted to be positioned on the bottom of a body of water on which the boat is floating;
   d. a line having one end connected to said weight; and
   e. an elongate arm extending from said housing and actuating said signal means in response to tilting movement of said arm, said arm having a free end, said line being connected to said free end of the arm under tension whereby relative movement of the boat and the weight position tilts said arm and actuates the signal means to indicate movement of the boat an anchor from their original position.

2. An anchor boat movement signal device as set forth in claim 1 wherein:
   a. said signal means includes a power source and an electric circuit with a switch activated by tilting of said arm for completing the circuit and energizing the alarm in response to movement of the arm by relative movement of the boat and weight.

3. An anchor boat movement signal device as set forth in claim 2 wherein:
   a. said arm is an elongate resilient member having one end connected to said switch;
   b. said line is connected adjacent said free end;
   c. said switch being activated by tilting of said resilient arm.

4. An anchor boat movement signal device as set forth in claim 3 including:
   a. a recess in said housing;
   b. a resilient material defining said recess and having an opening outwardly of said housing; and
   c. said recess being of a size in diametrical dimensions that the resilient material engages the weight and frictionally retains same during travelling of the boat.

5. An anchor boat movement signal device as set forth in claim 4 and including:
   a. a reel in said housing having the line received thereon, said line extending through an opening in said housing whereby release of said reel permits paying of the line therefrom; and

b. a crank means exteriorly of said housing operable to turn the reel and wind a line thereon.

6. An anchor boat movement signal device comprising:

a. a support member adapted to be mounted on a boat for use in a body of water, the boat having an anchor movable into engagement with a surface defining the bottom of said body of water;

b. means mounted on said support member to permit an elongated line and weight on one end of the line to be placed on a surface defining the bottom of the body of water;

c. a resilient arm means mounted on said support member and extending therefrom and having the line connected thereto and responsive to relative movement between the boar and said weight, said resilient arm means being a tightly wound coil spring that is normally in a straight line;

d. switch means operatively connected to said resilient arm means for completing an electric circuit in response to a selected magnitude of relative movement between the boat and said weight;

e. means in the electric circuit to energize same upon completing the electric circuit by said switch means; and

f. means in the electric circuit for effecting a signal in response to completion of the electric circuit whereby relative movement between the boat and said weight energizes the signal means.

7. An anchor signal device as set forth in claim 6 wherein:

a. said elongated tightly wound coil spring having a free end with the line connected to said free end thereof; and

b. said switch means has operative parts thereof engageable with the other end of said resilient arm means whereby movement of the one end of said resilient arm means is operative to energize said signal means.

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