E. H. PETTIT.

DEVICE FOR RAISING SUNKEN VESSELS.

APPLICATION FILED JUNE 15, 1917.

1,256,365.

Patented Feb. 12, 1918.

2 SHEETS—SHEET 1.

Fig. 1.

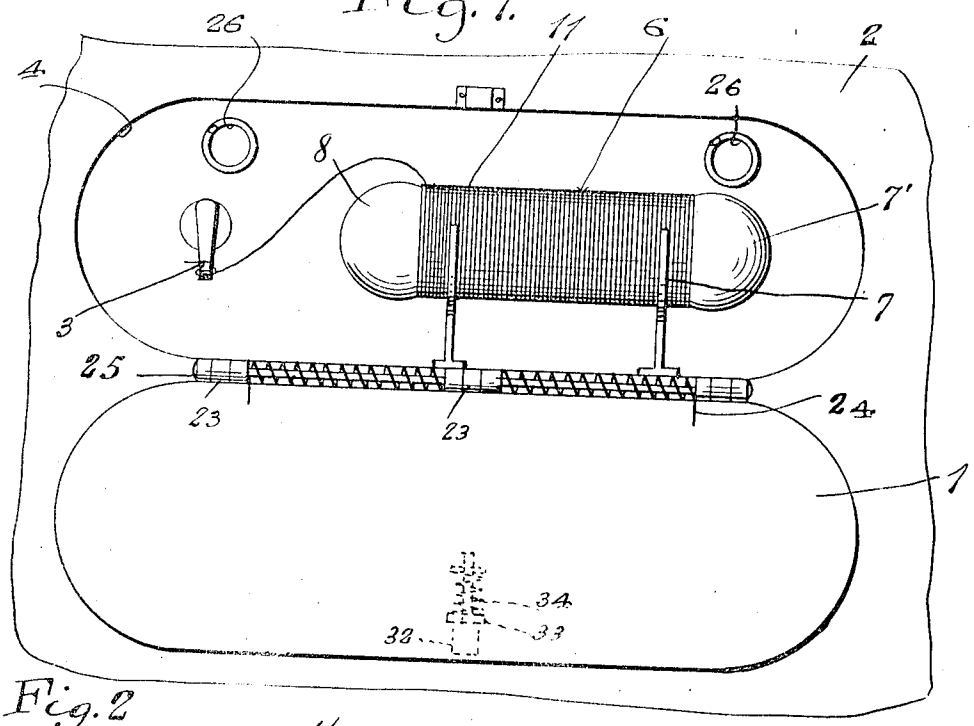



Fig. 2

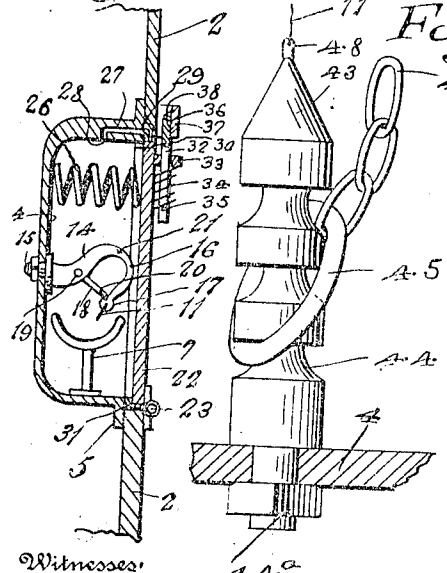



Fig. 6




Fig 7

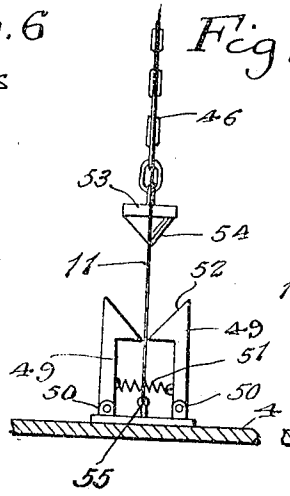
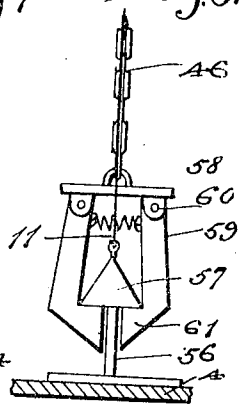



Fig. 8.




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2 SHEETS—SHEET 2.

Fig. 4.

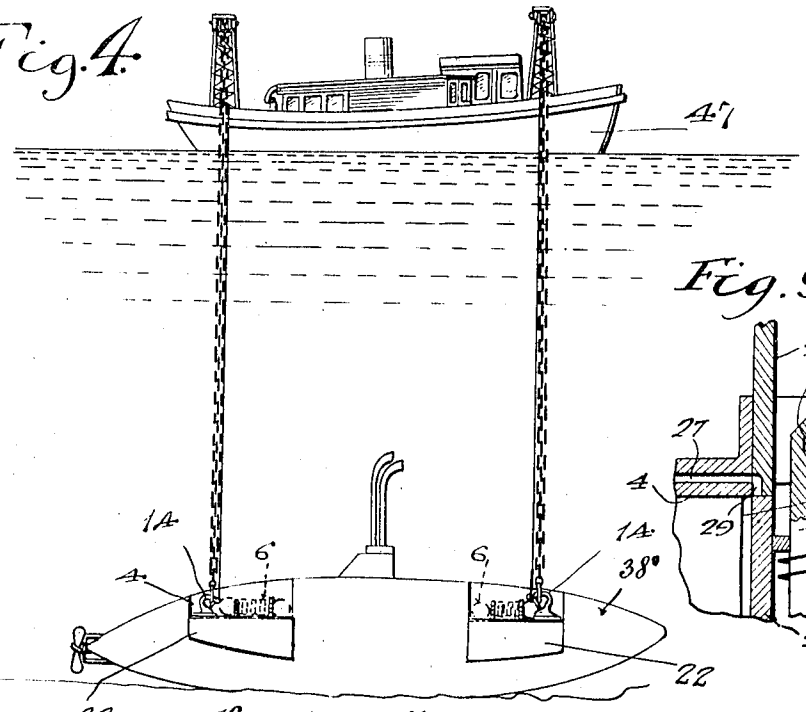



Fig. 9



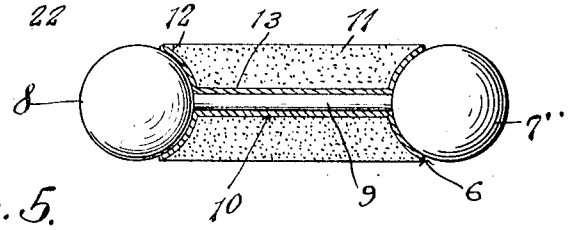
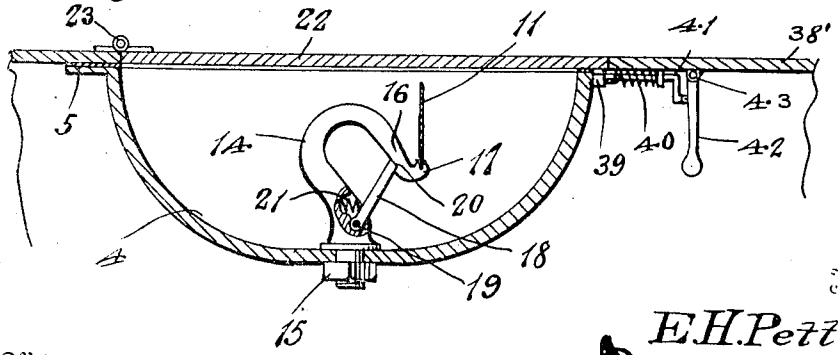




Fig. 3.

Fig. 5.




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# UNITED STATES PATENT OFFICE.

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## DEVICE FOR RAISING SUNKEN VESSELS.

1,256,365. Specification of Letters Patent. Patented Feb. 12, 1918.

Application filed June 15, 1917. Serial No. 175,019.

*To all whom it may concern:*

Be it known that I, ERNEST H. PETTIT, a citizen of the United States, residing at Niagara Falls, in the county of Niagara and State of New York, have invented certain new and useful Improvements in Devices for Raising Sunken Vessels; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to devices for locating and raising sunken vessels and the primary object of the invention is to provide a buoy carrying a line which is attached to the vessel, so that when the vessel sinks the buoy will rise and float on top of the water and indicate the location of the sunken vessel.

Another object of the invention is the provision of means whereby a grappling device can be guided by the line which is attached to the buoy and vessel, to a hook or other engaging device fixed to a rigid part of the vessel, so that the sunken vessel can be readily and conveniently raised.

A further object of the invention is the provision of compartments arranged on the vessel for carrying the buoy and engaging device which has a pivoted cover, so arranged that the same is adapted to be operated by the pressure of the water to open the same so that the buoy is automatically released upon the sinking of the vessel.

A still further object of the invention is the provision of means for mechanically operating the door to open the same from the inside of a boat, so that the improved device can be attached and efficiently operated from a submarine.

A still further object of the invention is the provision of a device of the above character which is durable and efficient in use and one that can be readily attached to any style of boat.

With these and other objects in view, the invention consists in the novel construction, arrangement and formation of parts as will be hereinafter more fully described, claimed and illustrated in the accompanying drawings forming a part thereof, in which—

Figure 1 is a fragmentary side elevation of a ship showing the same arranged with the compartment which carries the buoy and engaging device and showing the door of the compartment open,

Fig. 2 is a transverse sectional view through the compartment applied to the side of a ship showing the door closed,

Fig. 3 is a detail view of the improved buoy showing the line carrying spool in section,

Fig. 4 is a modified form of the device showing the same applied to a submarine, illustrating the manner of raising the submarine,

Fig. 5 is a longitudinal sectional view through the compartment showing the same arranged on a submarine,

Fig. 6 is a detail view of a modified form of engaging device to be carried by the vessel,

Fig. 7 is a detail view of a further modified form of engaging device to be carried by the vessel, and

Fig. 8 is a still further modified form of engaging device carried by the vessel.

Fig. 9 is a detail view of the door latching device shown in Fig. 2.

Referring to the drawings in detail, wherein similar reference numerals designate corresponding parts throughout the several views, the numeral 1 generally indicates the compartment formed in the side of a vessel 2, in which is preferably arranged the improved vessel raising and locating device 3. Each vessel is preferably formed with a pair of compartments 1 arranged on each side thereof and each compartment is formed of a plate or plates 4 curved to form rear, side and upper and lower walls which carry the outstanding flange 5 which provide means whereby the plates can be readily secured to the sides of the vessel.

The improved vessel raising and locating device comprises the buoy 6, which is adapted to rest upon a pair of spaced supporting brackets 7 secured to the bottom wall of the plate 4 of the compartment under normal conditions. The buoy 6 comprises two spherical shaped air chambers 7′ and 8 respectively connected by the rod 9 which rotatably carries the spool 10 upon which the line 11 is coiled. The spool 10 consists of substantially semi-spherical shaped flanges 12, which are adapted to engage the air chambers 7′ and 8 and the connecting tube 13 which is rotatably mounted upon

the connecting rod 9. One of the spherical shaped air chambers is formed with its outer surface highly polished so as to reflect the rays of light in the daytime so as to attract notice, while the other chamber is preferably painted a color which will attract notice under all conditions.

A hook shaped member 14 is secured to the rear wall of the compartment by means of having its ends reduced and upset as at 15 and has the bill portion thereof curved downwardly and inwardly as at 16. The free end of the bill 16 of the hook 14 is apertured as at 17 and is adapted to receive the end of the line which is carried by the spool 10. A pivoted locking member 18 is pivotally secured to the shank of the hook 14 by means of a pivot pin 19 and normally bears against the walls of the notch formed in the inner surface of the bill 16. A spring 21 is provided for normally urging the locking member 18 into engagement with the walls 20 of the notch.

A cover 22 is hingedly secured to the sides of the vessel and constitutes a water tight closure for the compartment. Hinges 23 are fastened to the lower portion of the door and to the sides of the vessel and heavy coil springs 24 are wrapped around the pivot pin 25 and normally tend to throw the door outward.

The rear wall of the compartment carries a pair of heavy expansion coil springs 26 arranged adjacent the top thereof which are adapted to bear against the inner surface of the door for urging the same outward. A plurality of openings 27 is formed in the upper wall of the compartment and each opening has an outlet 28 positioned inward of the door 22 and an outlet 29, which is normally held closed by the upper edge of the door 22, which carries the gasket 30. A similar gasket 31 is arranged adjacent the bottom of the door and coöperates with the gasket 30 to prevent entrance of water into the compartment under normal conditions. A bolt 32 is slidably mounted in the bracket 33 rigidly carried by the outer surface of the door adjacent the top thereof and an expansion coil spring 34 bears against the lower surface of the bracket and against a pin 35 rigidly carried by the bolt 32 and normally tends to draw the bolt downward and out of engagement with the keeper 36 which is secured to the side of the vessel 2 and adjacent the compartment. The keeper 36 has an inwardly extending lug 37 which is adapted to engage in a recess 38 formed in the bolt 32 adjacent the top thereof and holds the bolt in position in the keeper 36 against the tension of the coil spring 34.

By this arrangement it will be seen that if the vessel sinks, the pressure of the water will bear against the door 22 and when the vessel reaches a certain depth the pressure will overcome the coil spring 26 and move the door inward, which will move the lug 37 out of engagement with the recess 38 formed in the bolt 32 and allow the coil spring 34 to draw the same out of engagement with the keeper. When the door is pressed inward beyond the inlet opening 29 the water will enter the opening and into the compartment and when the pressure of the water on both sides of the door is equalized the coil spring 26 and the coil spring 24 wrapped around the pivot pin 25 will swing the door open and allow the buoy 6 to float upward to the surface of the water which will indicate the location of the vessel.

As shown in Fig. 4 the device can be readily applied to a submarine and in this arrangement the compartments 4 are preferably arranged on the upper surface of the boat 38′ and the hook 14 is preferably secured to the bottom of the compartments. By this construction, the door 22 carries an inwardly extending keeper 39 which is engaged by the sliding bolt 40 which carries a coil spring 41 which normally holds the bolt in position in the keeper. A lever 42 is secured as at 43 to the side of the vessel 38′ and extends inwardly and pivotally receives the free end of the bolt so that when it is desired to open the door the lever can be operated from the inside of the vessel to draw back the bolt and allow the spring hinges 23 to throw the door open and allow the buoy to rise to the surface of the water.

Instead of using a hook 14 other engaging devices as illustrated in Figs. 6, 7, and 8 can be substituted therefor, and as illustrated in Fig. 6 an upstanding post 43 is secured to the casing and has a series of spaced annular grooves 44 formed therein for receiving a ring 45 carried by the chain 46 which is carried by the wrecking tug designated as 47. The upstanding post 43 has its end reduced and apertured as at 48 to receive the free end of the line carried by the buoy 6.

In Fig. 7 a pair of spaced arms 49 are pivotally secured to the lower wall of the compartment as at 50 and have a contractile coil spring 51 normally tending to draw the two arms together. Each arm carries at its free upper end an inwardly extending hook-shaped portion 52 which is adapted to receive the disk-shaped member 53 which is carried by the chain 46 instead of the ring 45. The disk member 53 has its free end pointed as at 54 for spreading the arms 49 apart so that the hook-shaped ends 52 can engage the top surface thereof, so that the sunken vessel can be conveniently raised. The free end of the line 11 carried by the buoy is secured intermediate the arms 49 by means of an eye 55.

In Fig. 8 is illustrated a still further modification in which a shank 56 is secured in the compartment and carries a cone-shaped member 57 and by its end carries the line 11 carried by the buoy 6. In this construction the ring 45 is dispensed with and a plate 58 is substituted therefor which carries a pair of spaced arms 59 which are pivotally secured to the under surface of the plate as at 60. The spaced arms 59 carry the inwardly extending hook-shaped members 61 which are adapted to engage under the under surface of the cone 57, so that the boat can be raised when so desired.

In operation of the improved device, it can be seen that when the boat sinks the buoy 6 will rise to the top surface of the water and when it is desired to raise the same, a wrecking tug 47 is employed, as clearly shown in Fig. 4 and a ring 45 or other grappling device is passed around the line 11 and the same will guide the ring 45 over the bill 16 of the hook 14 and the locking member 18 prevents the withdrawal thereof, so that upon tightening the chain 46 the sunken vessel can be readily raised.

In practice, I have found that the form of my invention illustrated in the accompanying drawings and referred to in the above description, as the preferred embodiment, is the most efficient and practical; yet realizing the conditions concurrent with the adoption of my device will necessarily vary, I desire to emphasize the fact that various minor changes in details of construction, proportion and arrangement of parts may be resorted to, when required without sacrificing any of the advantages of invention as set forth.

What is claimed is:—

1. In a device for raising and locating sunken vessels, a compartment arranged in a vessel, a buoy arranged in said compartment, a door for said compartment, a bolt carried by said door, a keeper carried by the side of the vessel, spring means carried by said bolt to normally hold the bolt out of engagement from said keeper, means carried by said keeper for engaging said bolt for holding the same in engagement therewith, and means operated by the pressure of the water for releasing said bolt.

2. In a device for raising and locating sunken vessels, a compartment arranged in a vessel, a buoy arranged in said compartment, a door for said compartment, a keeper carried by the side of said vessel, a bolt carried by said door for engaging said keeper, a coil spring normally tending to draw said bolt from out of engagement with the keeper, a lug carried by said keeper for engaging said bolt for normally holding the same in said keeper, and spring means normally tending to hold the bolt in engagement with the lug carried by the keeper, as and for the purpose specified.

3. In a device for raising and locating sunken vessels, a compartment arranged in a vessel, a buoy arranged in said compartment, a door for said compartment, engaging means carried in said compartment adjacent said buoy, a keeper carried by the side of said vessel, a bolt carried by said door for engaging said keeper, means normally tending to draw said bolt from out of engagement with the keeper, means carried by said keeper for engaging said bolt for normally holding the same in said keeper, and spring means normally tending to open said door, said spring means being arranged to normally hold said bolt in engagement with the means carried by the keeper, as and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

ERNEST H. PETTIT.

Witnesses:
MAX M. OPPENHEIM,
SARAH OPPENHEIM.