A. GROSSICH.

SIGNALING AND PASSENGER CARRYING DEVICE FOR VESSELS.

APPLICATION FILED MAR. 23, 1912. RENEWED MAR. 17, 1913.

1,076,496. Patented Oct. 21, 1913.

2 SHEETS—SHEET 1.

Fig. 1.

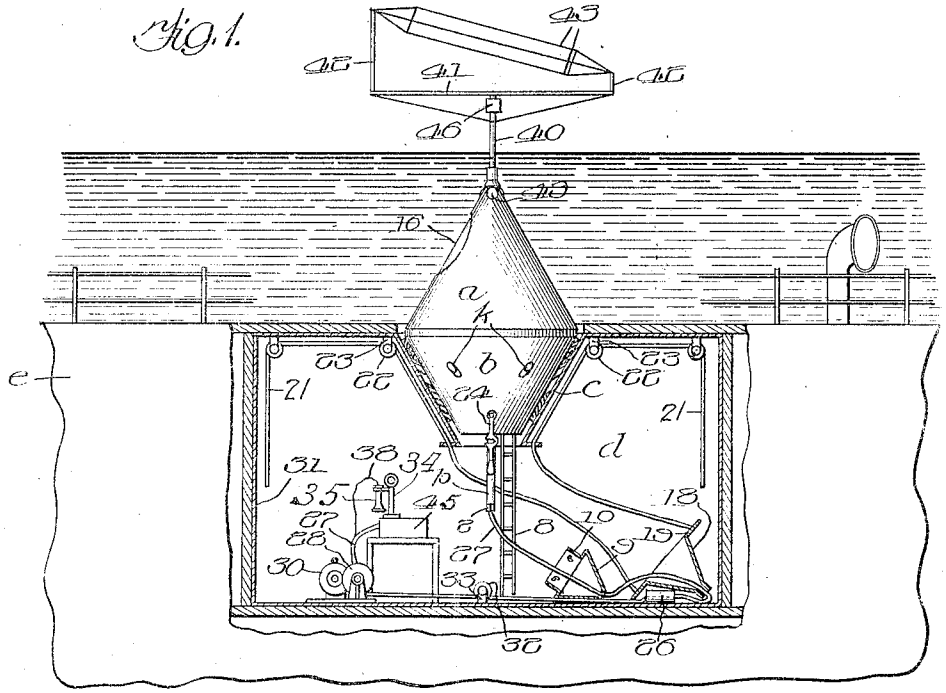
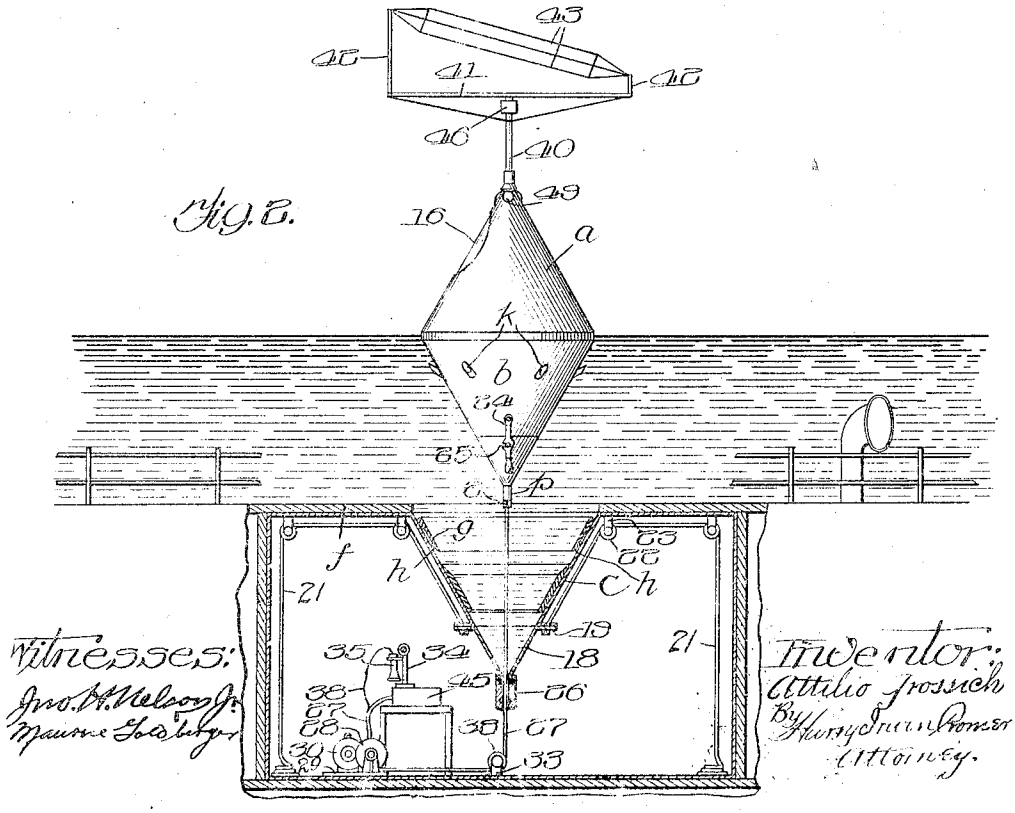


Fig. 2.



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Fig. 3.

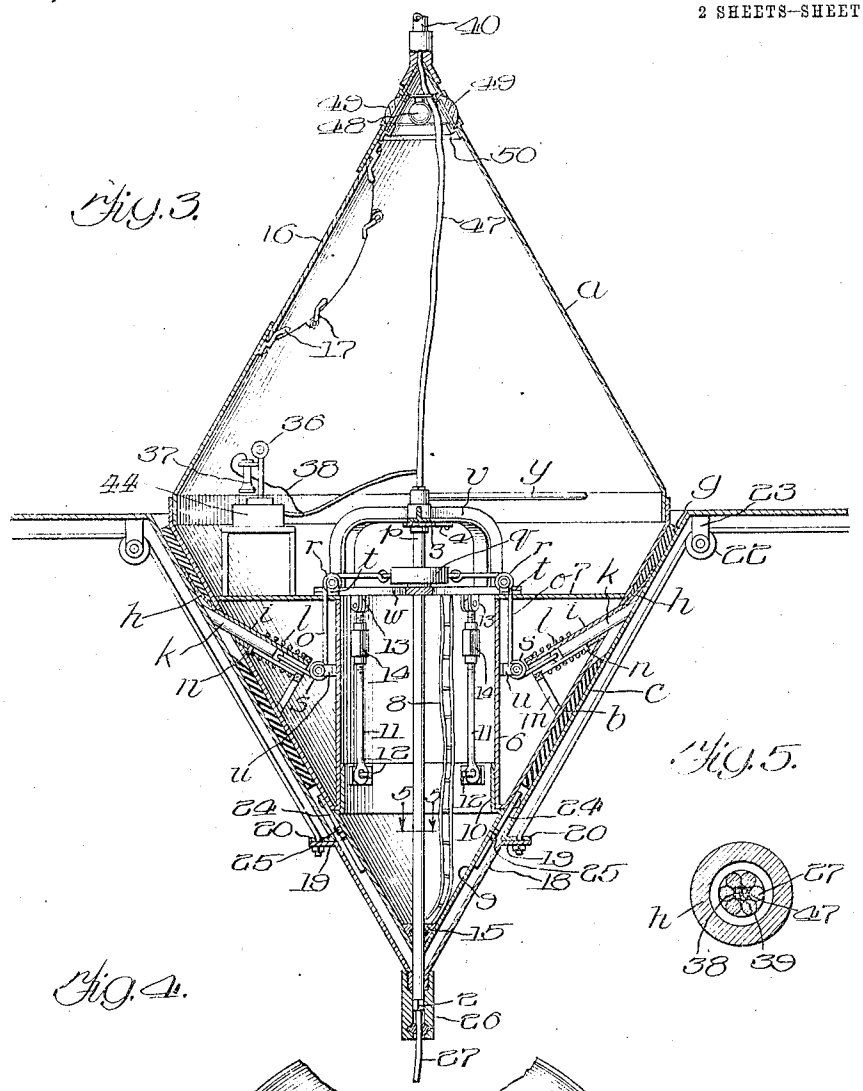
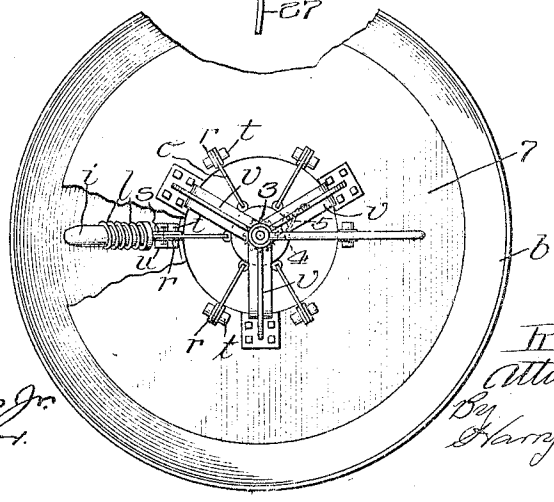


Fig. 5.

Fig. 4.



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UNITED STATES PATENT OFFICE.

ANTHONY GRONSICH, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO STEPHEN D. BANKOVICH.

SIGNALING AND PASSENGER-CARRYING DEVICE FOR VESSELS.

1,073,636. Specification of Letters Patent. Patented Sept. 23, 1913.

Application filed March 23, 1910. Serial No. 550,778. Renewed March 17, 1913. Serial No. 755,052.

To all whom it may concern:

Be it known that I, ANTHONY GRONSICH, a citizen of Austria-Hungary, residing in Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Signaling and Passenger-Carrying Devices for Vessels, of which the following is a specification.

This invention relates to that class of signaling and passenger carrying devices which are adapted to enable a signal or signals to be sent or received, and passengers or articles to be rescued, after a vessel has sunk.

The principal object of the invention is to provide a simple, economical and efficient signaling and passenger carrying device adapted to enable a signal or signals to be transmitted or received by occupants of a vessel after the latter has been wrecked or sunk.

A further object is to provide means for enabling passengers or occupants of a wrecked or sunken vessel to be rescued, and to provide a conveyance or float and signaling device adapted to pass from a sunken vessel or submerged portions of a vessel to the surface of the water carrying a signaling device or apparatus or such parts thereof as it is desirable to expose above the surface of the water, and adapted to carry passengers or articles from the vessel to the surface of the water, and to pass back and forth repeatedly as many times as may be necessary between or to and from the vessel and the surface of the water.

A further object is to provide a buoy or signaling and passenger carrying device adapted to be connected with and detached from a vessel in such a manner as to enable occupants of the vessel, after the latter has sunk, to pass into the buoy or conveyance and be carried to the top of the water or to safety by the latter, and so constructed as to enable the buoy to be raised and kept afloat while connected with the sunken vessel and to be drawn down and connected with the vessel and a passageway provided between an air tight compartment in the vessel and the interior of the buoy, and the door of the buoy opened and closed repeatedly as may become necessary, and signals to be transmitted from the vessel or from the buoy by wireless telegraphy or other signaling apparatus, and communication to be had between the vessel and the buoy—when the latter is on the surface of the water or in raised position—by telephone.

Other and further objects of the invention will appear from the following description and claims, and from an examination of the drawings hereto annexed and made a part hereof.

The invention consists in the features, combinations, and details of construction herein described and claimed.

In the accompanying drawings, Figure 1 is a view in vertical section of a portion of a vessel provided with my improvements and invention, and showing the buoy or buoyant conveyance in side elevation and connected with the vessel and with the door of the buoy and the door or hatch of the compartment of the vessel open and in position to permit persons to pass from the compartment of the vessel into the buoy; Fig. 2, a view of the apparatus or device shown in Fig. 1, showing the compartment of the vessel in vertical section and the buoy or floating conveyance in raised position, and with the doors of the buoy and compartment of the vessel, respectively, closed—the buoy being on the surface of the water and in position to receive or permit the transmission of signals, Fig. 3, an enlarged detail view in sectional elevation or vertical section taken through the center of the buoy or floating conveyance, and showing the means for closing and releasing the bottom door of the float and the door of the compartment, respectively, and the means for connecting the float with and disconnecting it from the tapered or conical walls of the vessel or hatchway. Fig. 4, a horizontal sectional view of the buoy or floating conveyance, looking down from the center or with top removed; and Fig. 5, an enlarged detail sectional view of the hollow shell and cable containing the telephone and telegraph wires inside of the outer cable strands and properly insulated, for conveying telegraphic and telephonic or both telegraphic and telephonic messages, or for forming an electric circuit or circuits for lighting, signaling or other purposes.

In constructing an improved signaling and passenger carrying device in accordance with my improvements and invention, I provide a hollow buoy or air tight vessel or

conveyance *a* which is by preference circular in cross-section and cone-shaped at top and bottom, so as to pass upward and downward through the water with as little friction and resistance as possible. The cone-shaped bottom portion *b* is adapted to fit snugly into a similarly tapered concave or recessed conical portion *c* of the walls or hatch-way of an air tight room or compartment *d* of a vessel *e* which may be a steam ship, sailing vessel or other form of craft or vessel. The hermetically sealed or air tight compartment *d* may be one of a series of similar compartments, and the buoy and its mechanism and operating parts and the means for operating the same may also be one of a series of similar devices.

The tapered wall portion *c* forms a conical socket below the level of the deck, and this socket is lined with suitable material such as rubber cloth *g* adapted to prevent the admission of water and the escape of air between the bottom of the buoy and the socket walls *c*. The wall portions or socket *c* and the tapered or conical bottom or side walls *b* of the buoy are provided with bottom doors, and means for securing the doors removably in position, and with means for securing the buoy removably in position in the socket or tapered wall portion of the vessel, the construction and arrangement of all of which may be varied, and only one form of which is here shown and described, the same being simple and efficient and being here described and illustrated in detail not as a limitation or designation of the scope of the invention but to enable the invention to be understood by explaining one mode and what is believed to be the best mode contemplated by applicant in which to apply the principle of his invention in such a manner as to distinguish the invention from others without limiting the invention otherwise than as set forth in the claims, but with a view to using and enabling others to understand and use the invention as embodied in the device here described and the same or any part thereof to be used in any such modified form or with such equivalents as may be suggested by this disclosure and without limiting applicant to the precise form or construction described.

An inner flange *h* is secured to the inner side of the conical wall portion *c* of the vessel, and the tapered side or bottom walls *b* of the buoy are provided with a series of inclined sockets *i* in which are slidably mounted securing bolts *k* which are adapted to be pressed outward into securing engagement with the flange *h* by means of compressible springs *l* one end of each of which springs engages a stationary support such as the brace *m* of the socket, and the other end of which engages a laterally projecting pin or boss *n* on the corresponding bolt, said pin being slidably mounted in a slot in the socket member and extending through the latter into engagement with the spring.

In order to provide means for withdrawing the bolts *k* from engagement with the securing flange *h* or equivalent bolt-engaging detent or member, a flexible element such as a cord or wire rope *o* is secured at one end to each bolt, respectively, and at the other end to a rotary element such as the upright hollow shaft *p* by means of a connecting and winding element or ring *q*—there being one member *o* for each bolt. Each cord or wire rope *o* is mounted upon idler rolls or anti-friction pulleys *r* and *s*, which pulleys are journaled in suitable bearings *t* and *u*, the bearings *t* forming supports for the upper pulleys, and the bearings *u* forming supports for the lower pulleys, and the ropes or cables being wound or mounted to extend inside of the lower pulleys and over the upper pulleys, as shown in Fig. 3, so that the rotation of the shaft *p* will wind the cords or cables in one direction and thereby draw the bolts out of engagement with the flange portion *h* of the socket *c*, and the releasing of the shaft will permit the bolts to be pressed out by the springs *l* into securing engagement with the flange *h* or its equivalent.

The hollow shaft *p* is journaled in suitable bearings in a supporting frame or spider having or consisting of converging bracket arms *v* which support the upper end of the shaft, and lower converging frame portions or arms *w* beneath the arms *v* and forming a support for the shaft below the point of connection between the shaft and the cords or cables *o*, as shown in Figs. 3 and 4. The upper end of the shaft is shouldered to fit a wrench or operating lever *y*, for turning the shaft from the inside of the buoy, and the lower end is similarly squared or shouldered at 2, so as to fit a similar wrench or operating lever, for turning the shaft from a position outside of the buoy when desired—for instance, when the buoy is to be released and sent up without an occupant, for the purpose of signaling or for any desired purpose, such as the carrying of goods or articles from the vessel after the latter has sunk. The upper end of the hollow shaft *p* is provided with a toothed ratchet 3 fixed thereto, and a pawl 4 is mounted pivotally in position to engage the teeth of the ratchet against which the pawl is yieldingly pressed by a spring 5, shown in Fig. 4, in broken lines. The pawl is pivotally mounted on the under side of a frame portion or bracket arm *v*, as shown in Fig. 3. An inner frame or casing portion 6, on the inside of the buoy, forms a support for the bracket or frame comprising the arms *v* and *w*, and a floor or grating 7 is provided, for supporting the occupants or con-

ments of the buoy when occupied, and a ladder 8, which may be attached to or detached from a suitable support such as the inner frame 6 forms a means of entering or of egress to or from the interior of the buoy or conveyance.

The bottom door 9 of the buoy is provided with an inner annular flange 10, as shown in Fig. 3, adapted to fit tightly into the inner circular frame portion 6 so as to confine air and exclude water from the interior of the buoy. The door 9 is secured removably in closed position by means of rods or similar connecting and supporting elements 11, the lower portions of which are connected with the door by suitable means such as staples 12, and the upper ends of which are connected with the inner frame members *w* by means of brackets 13—the upper and lower members of the rods being threaded and provided with turn buckles 14 forming a connection therebetween and a means for tightening the door in its closed position by drawing the upper and lower members of the rods 11 together. A packing box 15 in the lower portion of the door 9 and through which the lower portion of the hollow shaft *p* extends, renders the lower part of the buoy water and air tight. The upper portion of the buoy is provided with a door or port hole, to be used as a means of entrance and exit when the buoy is floating on the surface of the water with its upper portion projecting above the water, and a door 16, for said port hole, is provided and held removably in position by means of suitable catches 17, as shown in Fig. 3.

A door 18, shown in Figs. 1, 2, and 3, serves to close the opening in the bottom portion of the socket or tapered or conical wall portions *c*, and is provided with a securing flange 19 which is perforated and adapted to be secured to a similarly perforated flange 20 which is on and encircles the lower edge of the conical walls or sockets *c*. Flexible elements such as wire ropes or cords 21, supported by pulleys 22 journaled in bearings or bearing brackets 23 on the interior of the compartment *d*, and adapted to be connected with a suitable source of power, or to be operated by hand when desired, serve as a means for raising and supporting the door 18 in closed position, where it may be bolted when desired. The door 9 of the buoy is also provided with means whereby it may be secured in closed position from the outside of the buoy or from the inside of the compartment *d*, and which securing means may be in the form of catches 26 pivoted to the tapered sides or bottom portion *b* of the buoy and movable into and out of securing or hooked engagement with pins or bosses 25 on the door 9. The door 18 is provided with a packing box 26 into which the lower end of the shaft *p* extends, and which is adapted to be screwed into threaded engagement with the door so as to form an air and water tight closure for the opening in the door 18 through which the cable 27 extends. This cable 27 is connected at one end with the buoy, preferably on the interior thereof. The connection with the buoy may be made by means of the hollow shaft *p* inside of which the cable extends—the hollow shaft being held securely in place by the frame portions *v* and *w* and the ring or collar *q* (see Fig. 3). The lower end of the cable is wound upon a drum 28 which is rotatably mounted in a frame 29 and operatively connected with and adapted to be rotated by a motor 30 or other or similar source of power such as an engine. An electric motor is well adapted for the purpose, and is, by preference, located inside of the compartment *d* which is sealed by a lining 31 of suitable material for excluding water and preventing the accidental escape of air from the compartment, as shown in Fig. 1. An idler pulley 32 is mounted rotatably in suitable bearings in a bracket 33 directly beneath the central portion of the buoy and of the door 18, so that the cable may be wound or unwound with facility, and the buoy thereby permitted to ascend to the surface of the water, or to be drawn down into position in engagement with the socket or tapered conical wall *c*, as desired.

In order to provide means for communicating by telephone between the interior of the buoy when in raised position and the interior of the compartment in the vessel a transmitter 34 and receiver 35 are provided and placed on the inside of the compartment *d* and connected with a similar telephone transmitter 36 and receiver 37, located inside of the buoy, by means of suitable wires 38 which extend through or on the inside of the cable 27 from the interior of the compartment *d* to the interior of the buoy so as to form an electric circuit between the telephone transmitters and receivers mentioned. The wires forming the electric circuit 38 are insulated from the outer metallic portions of the cable 27, by suitable insulating material 39, with which the wires forming the telephone electric circuit are wound, as well as the wires which form an electric circuit for use in signaling by the "Marconi" or wireless telegraph.

In order to provide means for communicating or signalling by wireless telegraph, either from the interior of the buoy or from the interior of the compartment *d* or sunken vessel *a*, a receiver for wireless telegraph messages is mounted upon the buoy by means of a pole 40, on which a cross piece 41 is mounted in position to support upright poles 42 between which are strung the necessary wires 43 for forming the outer de-

ceiving instrument of a "wireless" telegraph apparatus—the wires 43 being connected with the necessary wires and instruments for completing the required electric circuit and for making the necessary connections with the interior instrument or wireless apparatus either on the inside of the buoy, as indicated in Fig. 3, wherein the reference numeral 44 indicates the entire transmitter-operating and key mechanism and interior wireless sending and receiving apparatus, or on the inside of the compartment *d*, as indicated in Fig. 2, wherein the numeral 45 indicates the ordinary known form of interior sending and receiving apparatus of a wireless telegraph system, station, or apparatus. The outer transmitter 46 (see Figs. 1 and 2) is also supported by the pole 40, and connected, by suitable wires for forming the necessary electric circuit, with either or both of the interior apparatus 44, and 45. The outer transmitter 46, and outer receiver apparatus 43 are operatively connected with the interior apparatus 44 and 45, or with either, as desired, by means of wires 47 which extend along the inside of the cable 27, and are insulated from the outer metallic parts of the latter by the insulating material 39, as already suggested. The entire wireless apparatus may be of any ordinary known or desired form known to those skilled in the art, and it is therefore not deemed necessary or desirable to describe or illustrate the same further or in detail herein.

A lamp 48, which may be of any desired suitable form of lamp, is mounted in the upper portion of the buoy or conveyance *a* between glass covered windows or openings 49 in the upper wall portions or casing of the buoy, and a rotary shutter 50, which may be of any desired or known form of rotary signaling shutter, is mounted in position to extend between the lamp and the glass covered openings or windows 49, so as to interrupt the rays of light passing from the lamp through the latter, for the purpose of sending out signals.

From the foregoing it will be seen that means is provided whereby passengers or other occupants or articles may be conveyed from a sunken vessel to the surface of the water with safety, thereby enabling lives to be saved; and that means is also provided whereby the buoy may be used for sending signals without sending occupants therein, when desired, and that signals may be sent directly from the interior of the buoy, and without using instruments in the interior of the vessel, when desired, or when necessity requires.

I claim:—

1. In an apparatus of the class described, the combination of a vessel having an air-tight compartment and having a recess in the wall of such compartment forming an opening communicating with the interior of the compartment, a door for said opening, means for removably securing said door in closed position, a buoy movable into and out of engagement with the recessed wall portion of such compartment and comprising in its construction a lower casing portion provided with an opening adapted to communicate with the opening of the air-tight compartment of the vessel when the buoy is in engagement with the recessed portion of the latter, a door for said opening in the buoy, an upwardly projecting flange on said door, threaded rods suspended on the inside of the buoy and in supporting engagement with said door for holding the latter in closed position, threaded securing means connected with the interior of the buoy and in threaded engagement with said rods and forming supports for the latter, and a flexible element connected with the vessel and with the buoy respectively, for lowering and permitting the upward movement of the buoy with respect to the vessel.

2. In an apparatus of the class described, the combination of a vessel having an air-tight compartment and having a conical recess in the exterior wall of such compartment forming an opening communicating with the interior of the compartment, a door for said opening, a buoy comprising in its construction a lower conical casing portion movable into and out of engagement with the recessed wall portion of the vessel compartment, and having an opening in said lower casing portion of the buoy, a door for said opening in the buoy, said door having a conical surface portion adapted to extend into said conical recess in the exterior wall of said compartment, means for removably securing said door in closed position, means for removably securing the conical casing portion of the buoy in the recessed wall portion of the vessel, a flexible element connected with the buoy and extending into and connected with the vessel, and winding mechanism connected with the flexible element, for winding and unwinding the latter, to lower and permit the upward movement of the buoy.

3. In an apparatus of the class described, the combination of a buoy comprising an upper casing portion and a lower conical casing portion forming an air-tight compartment, a vessel having a compartment formed therein, a recessed wall portion provided with an opening communicating with the interior of such compartment, adapted to receive the lower conical casing portion of the buoy, a door for said opening, a downwardly and inwardly projecting flange in the recessed wall portion, bolts slidably mounted in the conical casing portion of the buoy and movable into and out of engage-

ment with said flange, means for moving the bolts outward into flange-engaging position, means for drawing the bolts inward to releasing position, and a flexible element connected with the buoy and with the vessel, for lowering and securing the buoy in place.

4. In an apparatus of the class described, the combination of a vessel having air-tight wall portions forming an air-tight compartment and having a cone-shaped recess in the exterior wall of such compartment, a door at the bottom end of such cone-shaped recessed wall portion, a buoy having a cone-shaped bottom portion movable into and out of the cone-shaped recess in the exterior wall of such compartment, and having an opening in the lower end of the cone-shaped bottom portion of the buoy, a door for said opening in the buoy, mechanism located on the inside of the buoy for securing the door at the lower end of the buoy in closed position, securing bolts slidably mounted in the casing of the buoy and adapted to project outward laterally therefrom into securing engagement with the recessed cone-shaped portion of the exterior wall of the compartment, springs operatively connected with said bolts and located on the inside of the buoy, a flexible element connected with each bolt, a shaft journaled in suitable bearings on the inside of the buoy, means for connecting said shaft with said flexible elements, means for rotating the shaft, to wind and unwind the flexible elements, to operate the securing bolts, signaling mechanism mounted in the buoy, a flexible cable connected with the buoy and with the vessel, respectively, and means for winding and unwinding the flexible element, to lower and permit the ascent of the buoy.

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