H. W. WALTERS.

LIFE SAVING APPARATUS.

APPLICATION FILED AUG. 30, 1921.

1,403,362.

Patented Jan. 10, 1922.

2 SHEETS—SHEET 1.

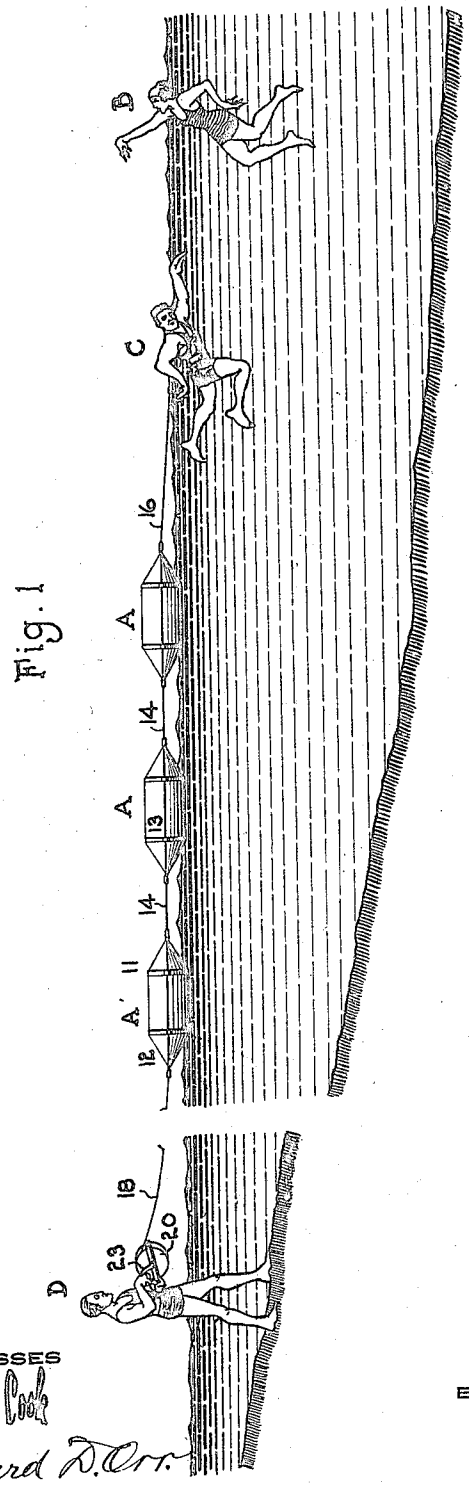


Fig. 1

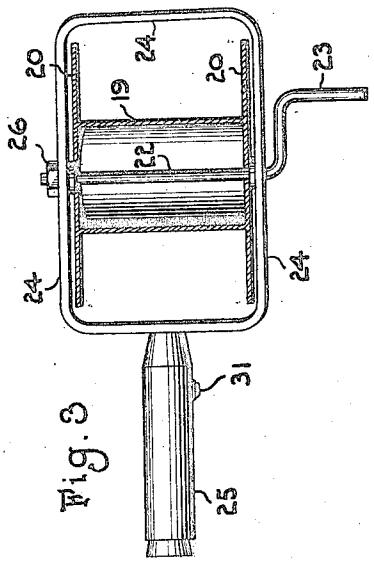


Fig. 3

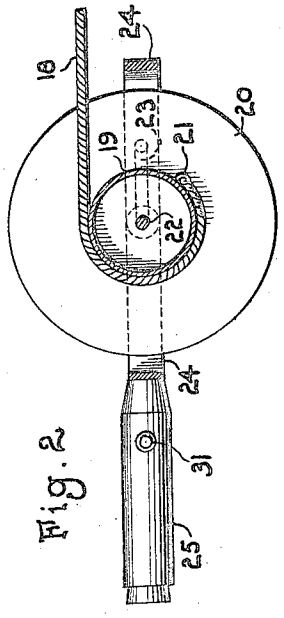


Fig. 2

Henry W. Walters
INVENTOR

BY E. G. Siggers
ATTORNEY

WITNESSES
Frank B. Cook
Howard D. Orr.

H. W. WALTERS.

LIFE SAVING APPARATUS.

APPLICATION FILED AUG. 30, 1921.

1,403,362.

Patented Jan. 10, 1922.

2 SHEETS—SHEET 2.

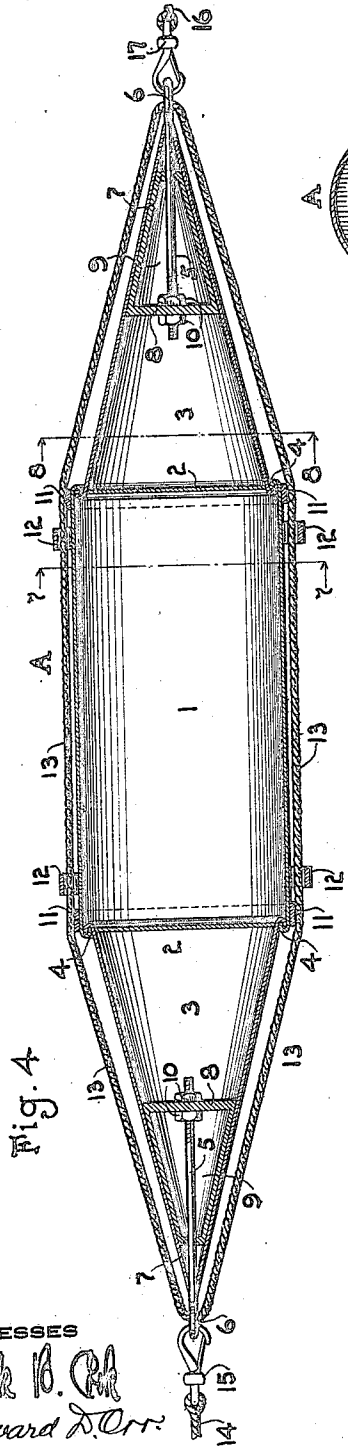


Fig. 4

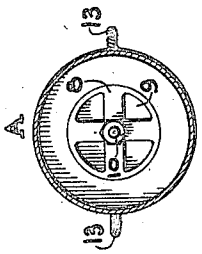


Fig. 8

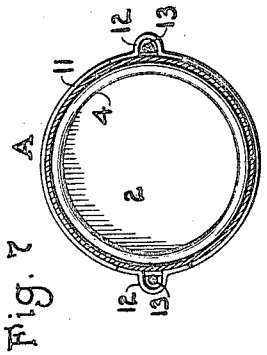


Fig. 7

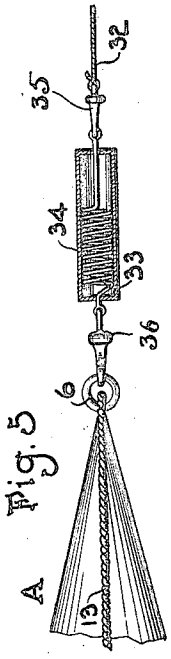


Fig. 5

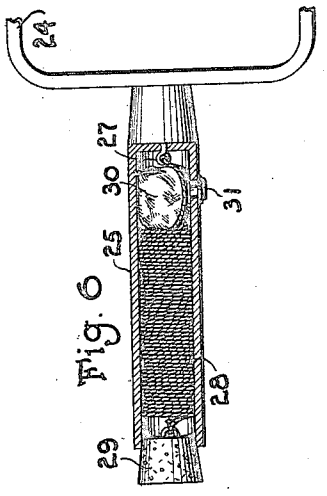


Fig. 6

WITNESSES

Frank B. Ch

Howard D. Orr

Henry W. Walters

INVENTOR

BY E. G. Siggers

ATTORNEY

UNITED STATES PATENT OFFICE.

HENRY W. WALTERS, OF JACKSONVILLE, FLORIDA.

LIFE-SAVING APPARATUS.

1,403,362. Specification of Letters Patent. Patented Jan. 10, 1922.

Application filed August 30, 1921. Serial No. 496,821.

To all whom it may concern:

Be it known that I, HENRY W. WALTERS, a citizen of the United States, residing at Jacksonville, in the county of Duval and State of Florida, have invented a new and useful Life-Saving Apparatus, of which the following is a specification.

This invention relates to life saving apparatus.

The object is to provide means for assisting in the saving of the life of a drowning person, which consists of one or a series of connected buoyant, air-tight floats capable of being towed to within reach of a swimmer or bather whose life is endangered, such towing being done by one or more swimmers or life guards whose efforts to quickly reach the said person are not materially interfered with by the slight pull or drag of the said floats, the latter being connected to a winding reel through the medium of a cord, the reel being in the hands of another guard on shore or in shallow water, who may readily draw the float or floats to shore together with their burdens.

Another object is to improve and strengthen the structure of the floats so that they may be used in connection with a Lyle gun or other projection device for casting a life line across a stranded vessel or in some other similar case, cushioning means being provided to be used in connection with said floats to take care of the shock incident to the use in this manner, the floats being further adapted for use as in the manner of a breeches buoy in connection with such a life line in the ordinary manner.

A further object is to provide a reel, for use in connection with the floats which contains sufficient line to reach the drowning person, when the line is unwound from the reel, at which time the latter, if accidentally dropped from the hands of the man on the shore, will float on the surface of the water and thus be easily recovered and which, if dropped accidentally while containing the full length of said line, will sink from view owing to the weight of said line but, having certain automatic means for releasing a cork attached to a retrieving line stowed in the handle thereof, the said cork will rapidly rise to the surface to be observed by the guard and through the retrieving line, the reel may be easily recovered.

The invention herein described, claimed and illustrated is designed to embody improvements over the structure shown and described in Patent #1,380,026 issued to me on May 31, 1921.

A full and complete understanding of the invention may be obtained from a consideration of the following detailed description, taken in connection with the accompanying drawings forming a part of this specification; it being understood that while the drawings show a practical form of the invention, the latter is not to be confined to strict conformity therewith, but may be changed or modified, so long as such changes and modifications mark no material departure from the salient feature of the invention, as specifically pointed out in the appended claims.

In the drawings, in which similar reference characters designate corresponding parts throughout the several figures:—

Figure 1 is a more or less diagrammatic view illustrating the method of using the apparatus to save the life of a drowning person, a single swimmer being employed to tow the float or floats to the scene of action.

Figures 2 and 3 are sectional views taken at right angles to each other and illustrating the structure of the winding reel.

Figure 4 is a longitudinal sectional view of the float.

Figure 5 is a detail elevation of the end portion of a float in connection with a shock absorbing spring to be used when the line is shot from a Lyle gun or other projecting means.

Figure 6 is an enlarged longitudinal section through the handle of the reel showing the retrieving line stowed therein and the means for releasing the same.

Figure 7 is a transverse sectional view of the float taken on the line 7—7 of Figure 4, and

Figure 8 is a similar view, taken on the line 8—8 of Figure 4.

The float or buoy A is formed of suitable sheet metal, preferably galvanized sheet iron or copper, shaped into an air-tight, tubular body portion 1 substantially eight inches in diameter over all and about fourteen inches in length, each end being closed by a bulk-head 2 and having connected thereto, by air-tight means, end cones 3 formed of similar material and tapering to

a point, the length of said cones being substantially twelve inches, thus providing an air-tight buoy or float substantially thirty-eight inches in length and eight inches in diameter, which dimensions, while found to be well adapted to the purpose, and not obligatory, as other dimensions may be found to be advantageous for such purposes.

The end cones 3 are preferably joined to the ends of the cylinder 1 by means of interlocking joints 4 formed in a well-known manner and the partitions or bulkheads 2 are brazed, soldered or electrically welded in position within the large ends of the cones, as clearly shown in Figure 4 of the drawings. Whereas the structure shown in the above mentioned patent includes a continuous longitudinal rod or bar extending throughout the entire length of the float or buoy, this latter has been found to be disadvantageous in use, since any shock imparted thereto through the more or less rough usage to which the floats are subjected, resulted in a dislodgment of the joints and a consequent loosening of the said rod where passing through the ends of the cones and the bulkheads, causing leakage at these points.

To overcome this defect, the present device dispenses with this continuous rod and employs instead a short rod 5 at each end of the float, each rod having an eye 6 formed at one end which projects somewhat beyond the point of the adjacent cone through which the rod passes, the inner end of the latter being screw threaded and passing in turn through the outer and inner walls 7 and 8, respectively, of a truncated cone 9 having a tapered cylindrical wall fitting snugly within the outer portion of the cone.

The truncated cones are preferably formed of tungsten bronze which has been found well adapted to the purpose, and the larger and inner wall 8 has quadrangular cut-out portions providing crossed arms, thus lightening the structure somewhat. The inner end of the rods 5 pass through the central portion of this inner wall and nuts 10 bearing against either side of the same to rigidly hold the rod in place.

Reinforcing bands 11 snugly fitting the outside diameter of the cylinder 1 and encircling the same, are welded or otherwise secured thereto in surrounding relation to the bulk-heads 2, and interlocking joints 4 greatly strengthen the structure at this vital point. At diametrically opposite points on the exterior of the cylinders 1, are spaced keepers 12 near the ends of the latter, said keepers being formed of short lengths of metal bent to form semi-circular eyes through which is adapted to pass a rope 13 extending entirely around the float lengthwise thereof and passing also through the end eyes 6 of the aforesaid rods, thus affording convenient grasping means at any point along the float on either side thereof, for the hands of a drowning person.

As illustrated in Figure 1 of the drawings, three of these floats are being towed toward the drowning person B by a single swimmer or life guard C, as the small size and light construction of the floats are such as to readily permit of the same, though it is to be understood that a greater or less number of floats may be employed. The floats are connected together by a line 14 located between the adjacent ends thereof and having suitable swiveled snap-hooks 15 attached to their ends for ready connection with the end eyes 6 of the floats, and a tow line 16, also having a swiveled snap hook 17 engaged in the front end eye 6, is provided at its free end with a suitable loop passed under one arm and over the opposite shoulder of the swimmer C by means of which he may tow the entire string of floats without hampering his swimming. If desired, a tow line 16 may be attached to each forward end eye 6 of each float and a swimmer employed in each, as in case of rough water or there being more than one person in jeopardy.

The innermost float A is connected to shore by a line 18 attached to a winding drum 19 in the hands of another life guard B who may either stand upon the shore or in shallow water and whose hands are employed in supporting and in winding the drum to feed out or to wind in the line 18.

The drum 19 comprises an air-tight cylinder having its end heads extended to provide drum flanges 20, between which and upon the drum 19, the said line 18 is adapted to be wound, the end of the line being made fast as to an eye 21. A crank shaft 22 is passed lengthwise through the drum 19 and is soldered or welded thereto to form an air-tight joint, the said shaft terminating at one end in a crank 23, and being mounted for rotation, by means of the said crank, in the side bars of a rectangular frame 24 having a tubular handle 25 attached to the cross bar thereof. The crank 23 lies against the outside of one of the arms of the frame 24 to prevent lateral movement of the shaft and to be grasped by the hand of the operator, while the other threaded end of the shaft traverses a suitable aperture in the other arm of the frame 24 and has a nut 26 applied to the end thereof and against the outside of the other arm for a like purpose, it being understood that the drum and the shaft turn together in the frame.

The handle 25 is closed at the end where connected to the frame and its other end is open, as clearly shown in Figure 6 of the drawing, and the closed end is provided with an eye 27 to which is attached one end of a small, strong cord 28 for use as a retriev-

ing line, the same being coiled or otherwise stowed within the tubular handle, as shown, and having its other or outer end attached to a cork or other floating closure 29 preferably somewhat tapered to fit snugly within the end of the handle to form an air-tight joint therewith to prevent the ingress of water at this point. A space at the inner end of the tubular handle is adapted to receive a quantity of gas-forming chemical such as carbide of lime or other similar agent which may be held in a wrapper 30 of tissue paper or in an easily dissoluble capsule. Opposite this space the wall of the tubular handle is provided with an automatical valve 31 of any desired construction which, upon being immersed sufficiently under the surface of the water, may be affected by the pressure thereof, to admit a small quantity of the water to the interior of the handle and thus come in contact with the carbide, causing the generation of gas within the handle which will eventually discharge the cork or closure 29 from the other end of the handle and free the retrieving line 28 therefrom.

In the event the life guard D should accidentally drop the reel 19 with a considerable quantity of the hauling line 18 wound thereon, the said reel might sink out of sight, but upon the aforesaid chemical action taking place, the rising cork will soon be observed by the said guard and the reel retrieved by the line 28. Should, however, the reel be dropped accidentally, after the line 18 has been entirely unwound therefrom, the buoyancy of the reel, due to the air-tight drum 19, would cause the same to float, as will be readily understood.

When the life saving apparatus of the present invention is used in connection with a Lyle gun or other ejecting device wherein a suitable projectile is shot out and across a stranded ship or other object, in the ordinary use of the same, the said projectile carries a line with it and this line 32, as shown in Figure 5, may have its free end attached to one of the floats A through the medium of a coiled spring 33 housed in a tubular casing 34, the latter fitting loosely over the spring and acting merely as a guard therefor, the usual swiveled snap hooks 35 and 36 being employed to connect the line 32 to the spring 33 and the latter to the eye 6 of the float A. In this manner of using the apparatus, the projectile would be thrown over and beyond the drowning person and the float to be jerked along after the same until it fell on the water in proximity to the said person, the rear end of the float being in connection through a hauling line with the reel held at or near the shore.

The floats A may also be used to advantage in the same manner as a breeches buoy, in which event the life line would be sent across a boat or vessel in the usual manner and anchored thereto when, by passing a short line from end to end of the float and securing the same to the opposite eyes 6 as by snap hooks, the said short line may be looped around the life line and the float caused to travel back and forth on the life line, between the vessel and the shore by means of pull lines in a well-known manner.

From the foregoing it will be seen that important improvements have been incorporated in the present structure over that of the above cited patent and that the present life saving apparatus may be used in a number of ways, and that a simple, cheap and efficient device has been provided for the purpose.

What is claimed is:

1. In a life saving apparatus, a float structure, a reeling means connected thereto, a housing fast to said means, a retrieving line normally in the housing, and a buoyant closure for the housing connected to the line and responsive to expelling forces generated in the housing.

2. In a life saving apparatus a plurality of float structures each having conical extremities and a separate reinforcement wedged in each extremity for the attachment of a line thereto, joining the floats in series.

3. A life saving apparatus including a float having a central, cylindrical air-tight compartment, conical, air-tight end members secured thereto, bulkheads separating the same, reinforcing bands surrounding the central cylinder at its ends where joined to the conical ends, hollow frusto-conical reinforcing members fitting the smaller end portions of the conical end members and having inner and outer end walls, longitudinally disposed rods secured to said walls and having an eye at one end projecting beyond the points of the end members for the attachment of lines, keepers secured to the exterior of the central, cylindrical portion of the float, and a rope traversing the said keepers and the end eyes and passing entirely around the float lengthwise thereof, to be grasped by the hand.

4. A life saving apparatus including a winding reel rotatable in a frame having a handle, said handle being tubular in form and closed at the end attached to the frame, a retrieving line having its inner end secured in the handle and to the closed end thereof and adapted to be coiled or stowed therein, a gas-forming agent adapted to be made active by wetting placed at the inner end of the handle, an automatic water-inlet valve carried by the tubular handle opposite the gas-forming agent, and a cork connected to the free end of the line and fitting the open end of the handle.

5. In a life saving apparatus, a reeling

means having a tubular handle forming a fixed part thereof, said handle being adapted to receive a gas forming agent adapted to be decomposed by water, a retrieving line secured within the handle and coiled or stowed therein after said gas forming agent has been received therein, an automatic water inlet valve carried by the handle, and a cork connected to the line and fitting an opening in the handle.

6. In a life saving apparatus, a reeling means having as a part thereof a tubular receptacle for a gas forming agent adapted to produce gas in the presence of water, a line housed or coiled within the receptacle after the gas forming agent has been placed therein, an automatic water inlet valve for closing and opening in the receptacle, and a floatable means connected to the line and including an element for closing said opening, whereby when the reeling means is submerged in water to a depth sufficient to open the valve by pressure a quantity of water will be admitted to the receptacle and in contact with the agent forming a gas for expelling the closing element.

7. A life saving apparatus including a float having a central air-tight compartment, conical, air-tight end members secured thereto, bulkheads separating the same, hollow frusto-conical reinforcing members fitting the smaller end portions of the conical end members and having inner and outer end walls, and longitudinally disposed rods secured to said walls and having an eye at one end projecting beyond the points of the end members for the attachment of lines.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

HENRY W. WALTERS.