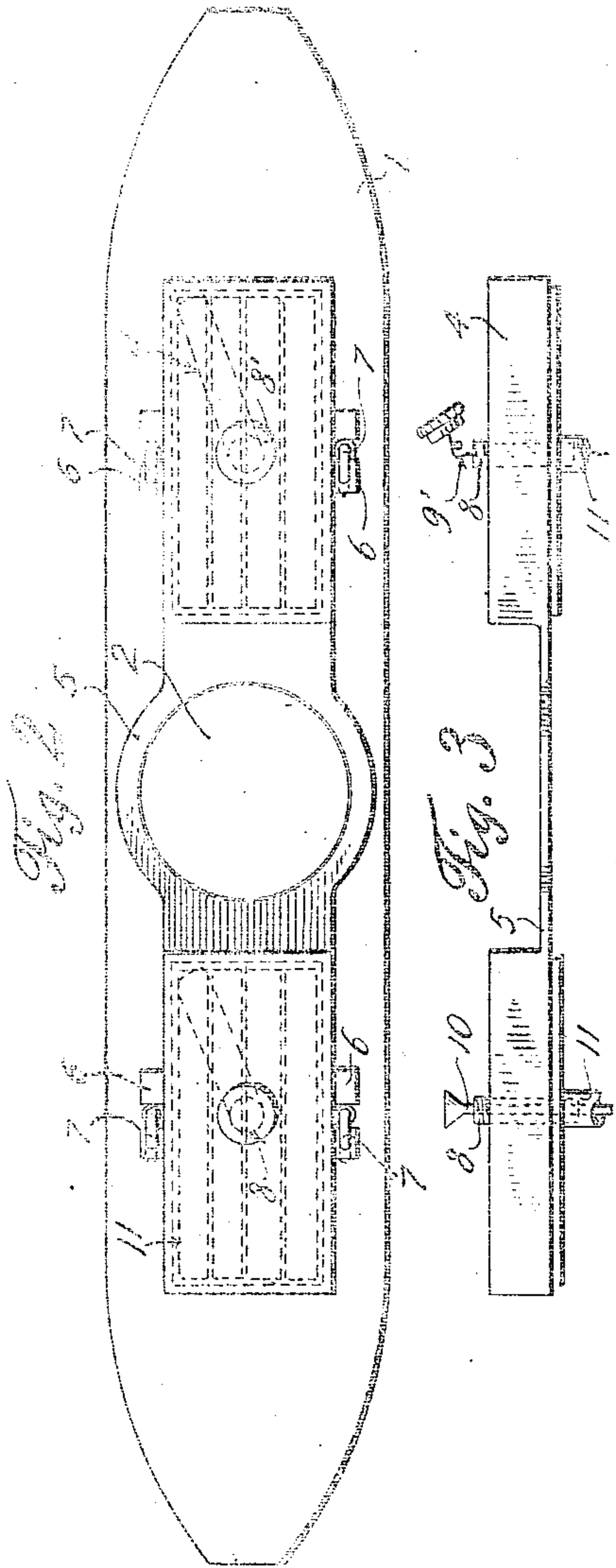
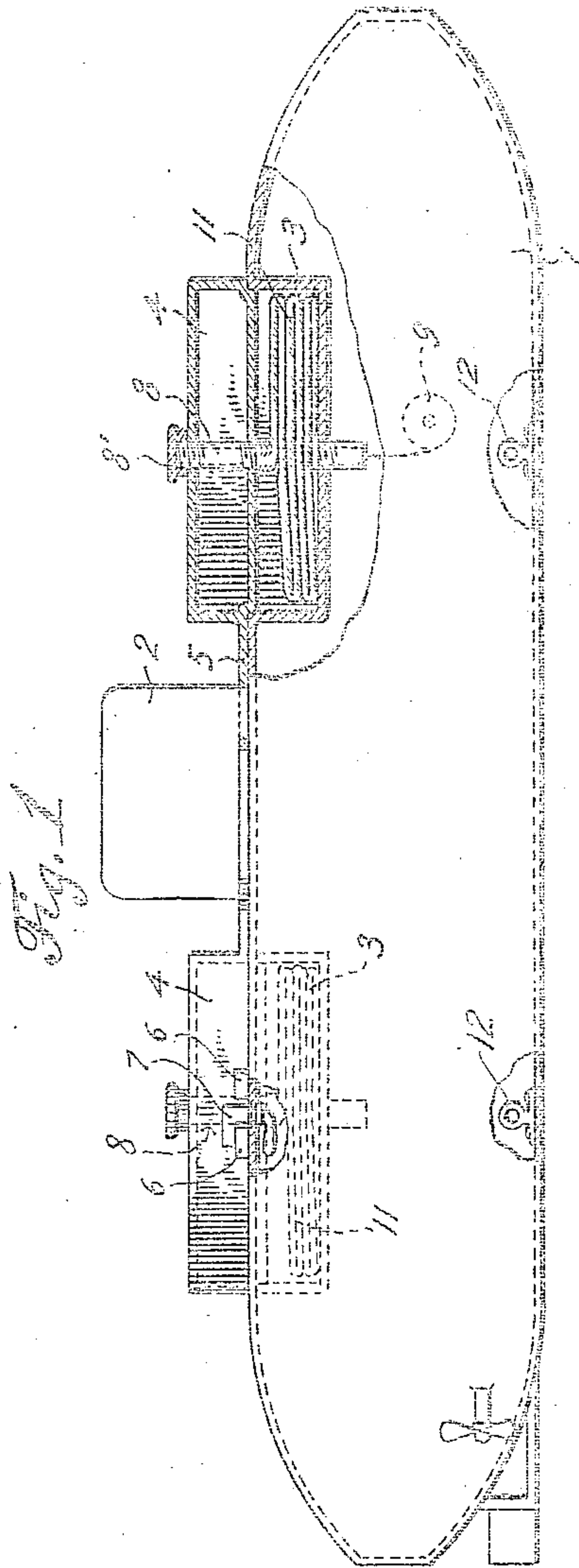


A. W. REED.
CREW SAVING AND SUBMARINE SALVAGING DEVICE.
APPLICATION FILED SEPT. 20, 1909.

953,642.

Patented Mar. 29, 1910.



Witnesses

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CREW-SAVING AND SUBMARINE-SALVAGING DEVICE.

953,642.

Specification of Letters Patent. Patented Mar. 29, 1910.

Application filed September 20, 1909. Serial No. 512,525.

To all whom it may concern:

Be it known that I, ARTHUR W. REED, a citizen of the United States, residing at Boston, county of Suffolk, Commonwealth of Massachusetts, have invented certain new and useful Improvements in Crew-Saving and Submarine-Salvaging Devices, of which the following is a specification.

This invention relates to a method and means for rescuing the crew of a sunken submarine and at the same time salvaging the boat itself.

The development of the submarine as a practical vessel for whatever purpose has shown a continued and even increasing liability to accident and disaster. The matter of rescuing the crew of a sunken submarine is in all cases a matter of great difficulty and heretofore in many cases has been impossible. The loss financially in submarine mishaps has been large and the number of deaths and the manner of their happening has not only been distressing to the public but has furthermore had a seriously deterrent effect upon prospective recruits for that branch of governmental service. One of the most serious difficulties in treating a disaster of this sort has been the failure of the crew to arise to the emergency in matters of discipline even in their own self preservation. This must naturally be the case where men meet with disaster under conditions so far from normal as to be appalling. To the end, therefore, of providing means for effecting a rescue of the crew of a submerged submarine and to recover the vessel itself I have devised my present invention in which I have provided not only for bringing the men back to the surface but for sustaining life during their imprisonment and also to recover the submarine itself.

In the specification which follows I have shown an adaptation of the principles of my invention as illustrative thereof and in the drawings an embodiment is presented which, while in diagrammatic form, shows clearly the invention.

Throughout the specification and in the drawings like reference numerals are employed to indicate corresponding parts and in the drawings:—Figure 1 is a side elevation partly in section of a submarine boat supplied with the present invention; Fig. 2 is a top plan view thereof; Fig. 3 is a side elevation of the yoke carrying the air tight chambers illustrating the method of commu-

nication from the surface of the water to the vessel.

1 is intended to represent the hull of a submarine having a tower or hatch 2. Just forward and aft of 2 are sunk in the deck 2 shallow oblong pits 3.

4 are a pair of buoys or floats connected by a yoke 5 which surrounds the hatch 2 and then unites the floats 4. Each float is provided with a pair of locking ears 6 which may be engaged by the hook 7 which is controlled from within the submarine. The hooks 7, therefore, when engaged with either of the lugs 6 locks the float 4 firmly to the upper part of the hull 1 directly over the pit 3.

8 is a capped plug which extends through each of the floats and to which is coupled one end of a long hose 11 which is normally folded into the pit 3. The other end of the hose 11 passes through a coupling into the hull of the submarine where it may be connected with whatever is desired.

9 is a reel upon which a wire for telephone or other purpose is spooled and this wire is run through the forward hose or pipe and is attached to the cover 8¹ of the forward coupling 8. Through the rear hose is run a small tube 10 which may be used as a conductor for food or other articles which it may be necessary to deliver within the hull 1.

The operation of my device is as follows:—When not required for use, as under ordinary conditions, the floats 4 are clamped snugly to the upper deck of the hull 1. It is to be understood that these floats may be of any suitable shape and may be set flush with the hull of the submarine or be made to occupy any suitable position in relation thereto and be adapted or conformed to any deck service which may be required. In case of the accidental sinking of the submarine or its inability to rise when below the surface the floats 4 are released by the operation of the hooks 7 from within the hull. The floats 7 then rise on account of their buoyancy, unfolding the hose 11 and the contained tube 10 and wire 9¹. The appearance of the float upon the surface will, of course, constitute in itself a signal of distress, but any further signaling means may be employed either on the float or from the submarine. Upon the arrival of assistance the depth of the hull is ascertained and by connection with the wire 1 telephone or other communication may be had with the crew.

If it is possible cables may be run through the hose 11 and made fast to the eye bolts 12 set in the frame of the hull 1. If it is impossible to raise the submarine at once relief
 5 may be afforded the crew in accordance with their needs. If fresh air is needed the same may be circulated through the two sets of hose 10 or if food is needed liquids may be supplied through the tube 10. The hose 11
 10 may be also employed to rid any flooded compartments of water by making suitable connections therewith. In this way the crew may be kept alive until proper salvaging equipment is obtained whereupon the hull
 15 may be raised and the crew liberated.

There are obviously many mechanical details in the matter of the connecting, operating and the various parts and appliances which I have not attempted to show or describe, as these are mere mechanical details
 20 which can be best worked out in accordance with the particular construction of the submarine itself or the type of submarine to which my device may be fitted. It is also
 25 obvious that various modifications can be made in form, the manner of connection, release and operation of my device, all without departing from the spirit of my invention if within the limits of the appended claims.

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

1. A device of the class described, comprising a rectangular yoke, provided with a centrally disposed opening through which
 35 projects the conning tower of a submarine, an air tight chamber at each extremity of said yoke, a cap plug passing through each chamber, a long hose attached to said plug and adapted to be carried to the surface by
 40 said yoke, and means for detachably securing said yoke to the deck of the submarine.

2. In combination, a submarine having a rectangular compartment disposed on each side of the conning tower thereof, a yoke arranged about said conning tower, an air
 45 tight chamber at each extremity of said yoke arranged over said compartments, hose coiled in said compartments and secured to

said chamber and adapted to be carried to the surface thereby, and means for detachably securing said yoke to the deck. 50

3. In combination, a submarine having a rectangular compartment disposed on each side of the conning tower thereof, a hose coiled in said compartment having one extremity thereof passing through the chamber of said compartment, a rectangular yoke having a centrally disposed opening engaging said conning tower, a transverse air tight chamber at each extremity of said
 55 yoke spanning said compartments, capped plugs passing through said air tight chambers having secured to one extremity thereof the free terminal of the hose, and means for detachably securing said yoke to the deck of
 60 the submarine. 65

4. In combination, a submarine having a rectangular compartment disposed on each side of the conning tower thereof, a hose coiled in said compartment having one extremity thereof passing through the chamber of said compartment, a rectangular yoke having a centrally disposed opening engaging said conning tower, a transverse air tight chamber at each extremity of said yoke
 70 spanning said compartments, capped plugs passing through said air tight chambers having secured to one extremity thereof the free terminal of the hose, hooks swiveled in the deck of the submarine adjacent each extremity of said yoke, and outwardly projecting
 75 lugs formed on said yoke and adapted to be engaged by said hooks. 80

5. An attachment for submarine boats comprising a yoke having an air tight chamber at each extremity thereof, and independent means carried to the surface by said yoke for removing stale air and for supplying fresh air. 85

In testimony whereof, I affix my signature in presence of two witnesses. 90

ARTHUR W. REED.

Witnesses:

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 R. B. ELLURS.