P. A. RYCZEK.

SALVAGE DEVICE FOR SHIPS.

APPLICATION FILED AUG. 26, 1918.

1,295,375.

Patented Feb. 25, 1919.

3 SHEETS—SHEET 1.

Fig. 1.

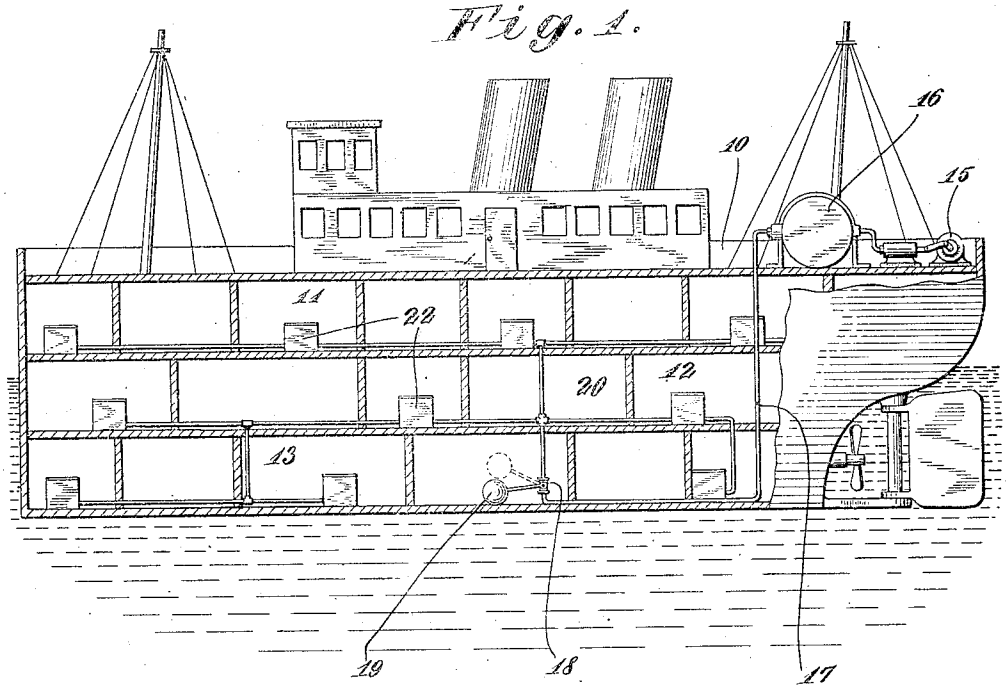
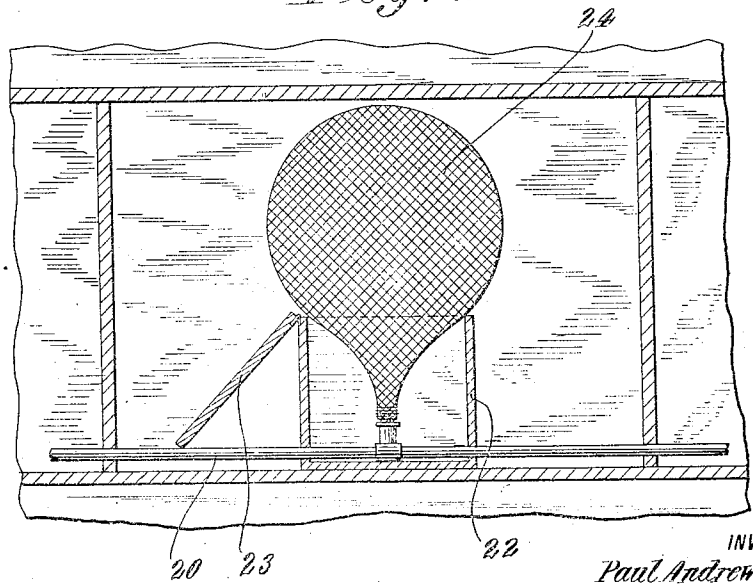


Fig. 2.



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3 SHEETS—SHEET 2.

Fig. 3.

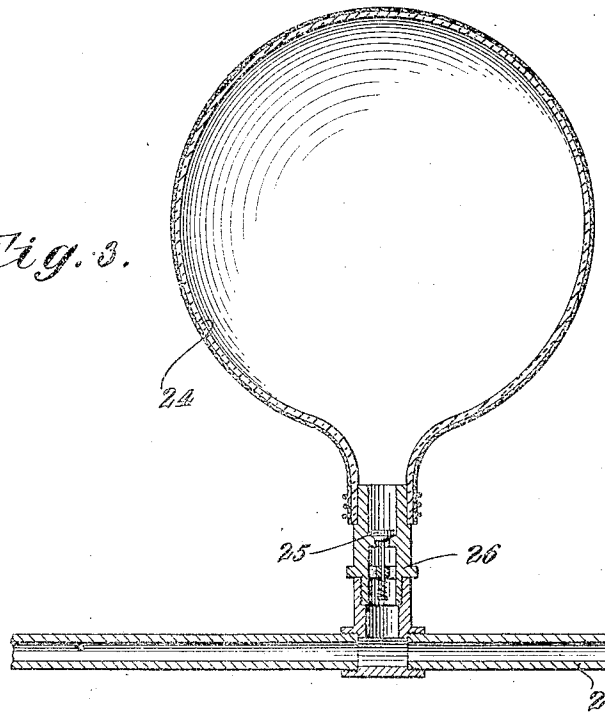


Fig. 8.

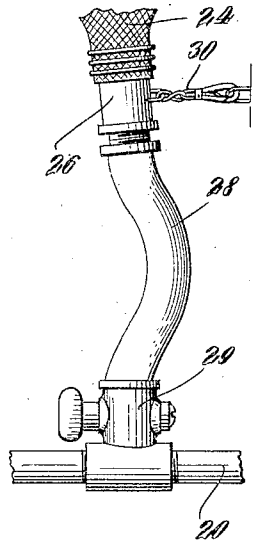
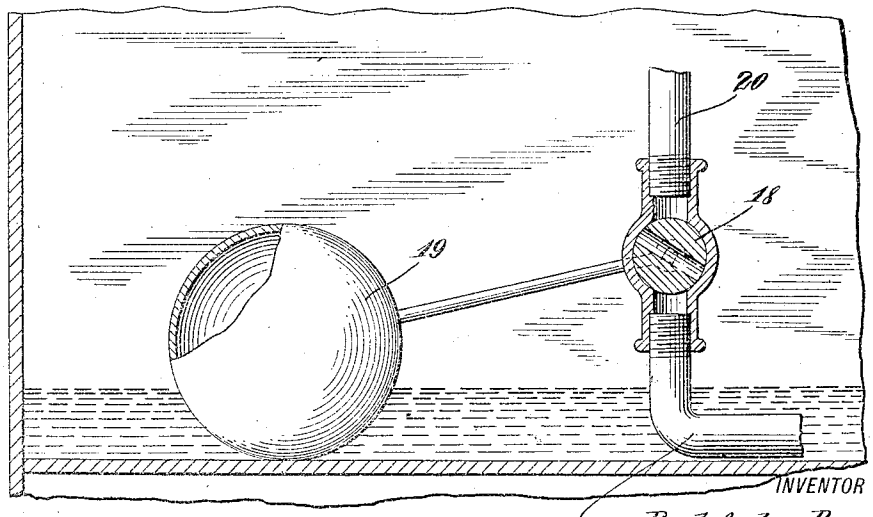


Fig. 4.



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3 SHEETS—SHEET 3.

Fig. 5.

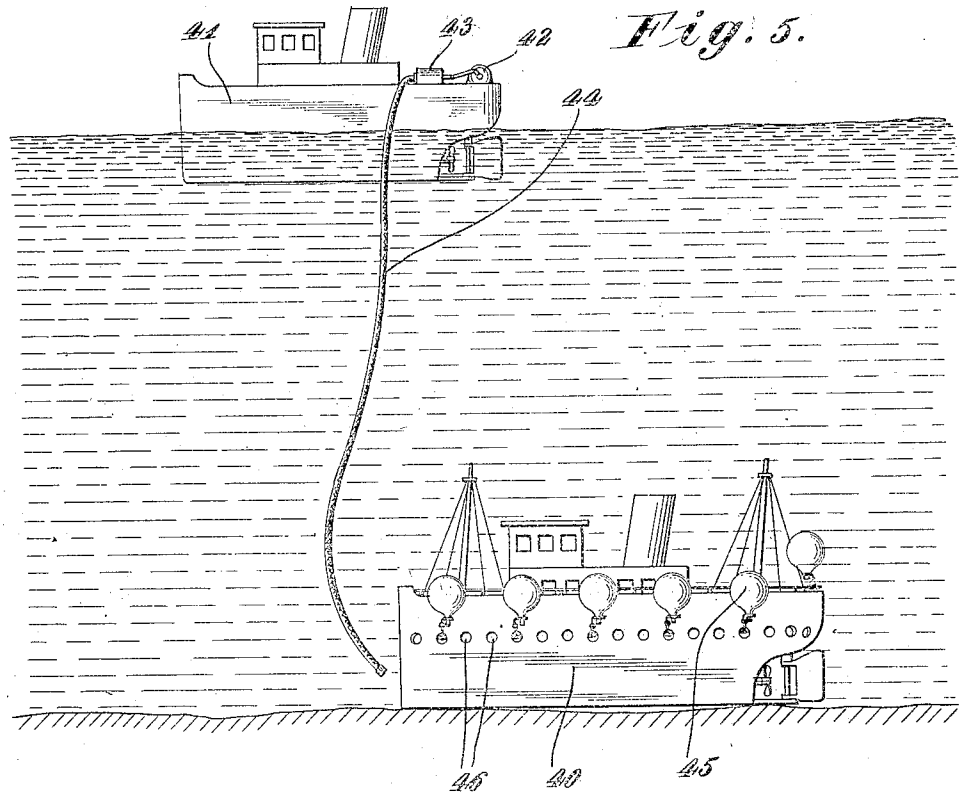


Fig. 6.

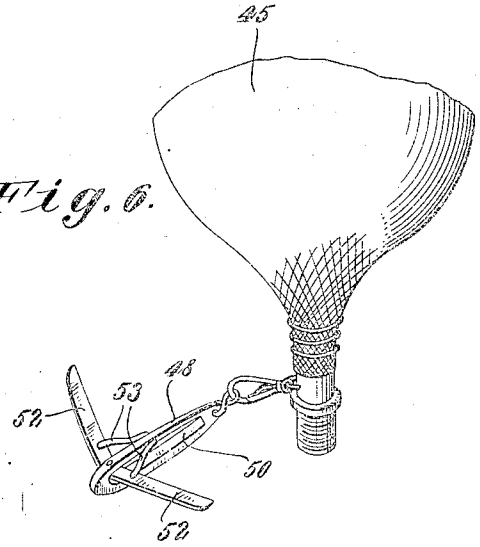
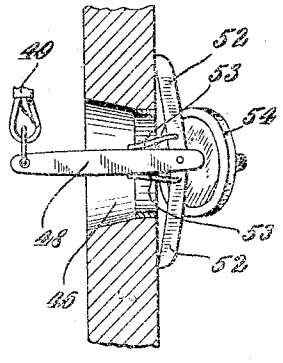


Fig. 7.



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UNITED STATES PATENT OFFICE.

PAUL ANDREW RYCZEK, OF PERTH AMBOY, NEW JERSEY.

SALVAGE DEVICE FOR SHIPS.

Specification of Letters Patent. **Patented Feb. 25, 1919.**

1,295,375.

Application filed August 26, 1918. Serial No. 251,393.

To all whom it may concern:

Be it known that I, PAUL ANDREW RYCZEK, a citizen of the United States, residing at Perth Amboy, county of Middlesex, and State of New Jersey, have invented certain new and useful Improvements in Salvage Devices for Ships, of which the following is a specification.

This invention relates to improvements in marine devices as applied to sea going ships, and has as its principal object the provision of automatically operating means whereby flexible elements, carried in the several compartments of the ship, may be inflated so that should damage arise to the ship as to prevent it from sinking.

A further object is to provide means whereby sunken ships may be raised to the surface by balloon-like attachments operated by a sister ship.

These and other like objects are attained by the novel construction and combination of parts hereinafter described and shown in the accompanying drawings, forming a material part of this disclosure and in which—

Figure 1 is a partial side elevational and vertical sectional view taken through a ship of conventional type and indicating the application of the invention.

Fig. 2 is an enlarged side elevational view of the raising means as disposed within one of the compartments.

Fig. 3 is a vertical sectional view taken through the center of the same.

Fig. 4 is a side elevational and sectional view showing the automatically controlled operating means.

Fig. 5 is a side elevational view showing a submerged ship and indicating the manner by which it may be raised to the surface.

Fig. 6 is a fragmentary transverse view showing the connection means by which the buoyant elements are attached.

Fig. 7 is a side elevational view of the connecting elements, and

Fig. 8 is a fragmentary side elevational view showing a modified form of engaging the sustaining elements within the ship.

Referring now more particularly to Fig. 1, of the drawings, a ship 10, shown to be provided with a plurality of horizontally disposed compartments 11, 12, and 13, the same being arranged in tiers within the ship. Carried on the ship is an air compressor 15, adapted to supply a tank 16, from which extends a supply pipe 17, to the lower part of the ship, the pipe being controlled by a valve 18, actuated by the float at 19.

Leading from the valve 18, is a supply pipe 20, branched and communicating with all of the several compartments and located in these compartments are casings 22, provided with covers 23 and adapted to contain flexible inflatable elements 24, valves 25, being provided in the connections 26, so as to prevent return of the air, should a break occur in the pipes 20, or if the compressor cease to operate.

From the foregoing it will be seen that should a leak occur in the hull of the ship, that water entering the same will pass downward into the lowermost compartment, causing the float 19 to rise, opening the valve 18, and inflating all of the several buoyant elements 24 by air delivered from the compressor, thereby sustaining the ship upon the surface of the water.

In the modification shown in Fig. 8, in place of the container 22, the connections 26, is engaged with a flexible pipe 28, controlled by the valve 29, set in the pipe connection 20, the inflatable elements 24, being held in operative position by the chain and action elements 30.

In the modification shown in Figs. 5, 6, and 7, a sunken ship is indicated by the numeral 40, while the tender or sister ship is denoted by the numeral 41, the same riding upon the surface of the water over the sunken ship. Carried on the ship 41 is an air compartment 42, delivering to the tank 43 and thence through a flexible hose 44 of suitable length to extend down to the sunken ship 40.

A plurality of buoyant elements 45, are engaged with the port holes 46, and connections made with the lower end of the hose 44 by divers entering the ship and extending through the port holes the inflatable elements when in a collapsed condition, and also engaging devices which consist of a bar 48, secured at its inner end by a chain or like fastening 49.

Pivotedly engaged within the slot 50, formed in the bar 48, are a pair of opposed arms 52, pressed normally outward by flat springs 53, the arrangement being such that the arms 52, together with the heads 54, to which the inflatable elements are connected, may be extended through the port

holes 46 and engaged therewith by the arms 52, so that the raising elements are firmly secured to the side of the ship and upon being inflated by air through the flexible tube 44 exert a lifting effect sufficient to raise the ship to the surface.

Having thus described my invention what I claim as new and desire to secure by Letters Patent, is—

In a salvage device for ships of the character described, the combination of a plurality of inflatable elements located near the port holes of the vessel to be raised and adapted to be inflated by means carried by the rescuing vessel, with a plurality of means for securing said inflatable elements to a sunken vessel, comprising a bar extending through the port holes, a pair of opposed arms pivotally secured to one end of said bar, flat springs secured to said bar and arms for normally pressing the arms outwardly, a link at the outer end of said bar, and a fastening element secured to said inflatable elements and to said link, substantially as described and for the purpose set forth.

In testimony whereof I have affixed my signature.

PAUL ANDREW RYCZEK.