

No. 644,723.

Patented Mar. 6, 1900.

W. S. RAY.
METALLIC LIFE BOAT.
(Application filed Nov. 23, 1899.)

(No Model.)

Fig. 1.

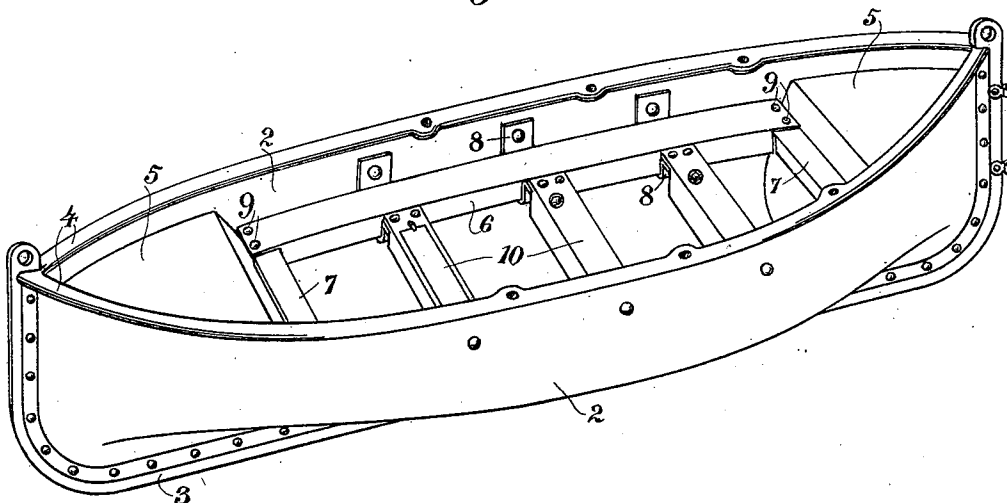
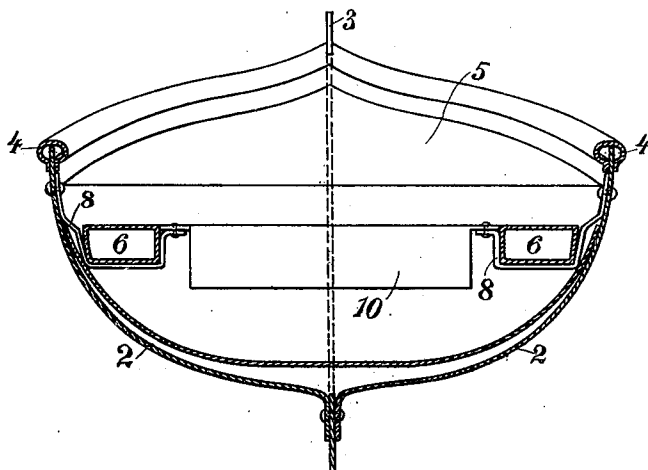


Fig. 2.



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UNITED STATES PATENT OFFICE.

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METALLIC LIFE-BOAT.

SPECIFICATION forming part of Letters Patent No. 644,723, dated March 6, 1900.

Application filed November 23, 1899. Serial No. 738,002. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. RAY, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Metallic Life-Boats; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to improvements in the construction of life and similar boats.

It comprises a novel construction of the interior fittings of the boat, whereby the use of wooden thwarts, braces, and bread and water tanks is avoided.

In the construction of metallic boats it has hitherto been the custom to form them of a great number of sheets of metal overlapped and riveted together to complete the sides, and these sheets are then secured to wooden keels and have wooden gunwales fixed to the top. In addition to this a number of ribs or braces have been necessary to give a boat thus constructed the requisite stiffness, and these parts fitting closely against the metal of which the boat is composed serve to gather moisture, which tends to rust the metal and eventually destroy it. They also prevent access to the metal beneath for the purpose of inspecting, painting, or otherwise preserving it. The riveting or nailing through a wooden keel becomes loose and leaky by reason of the swelling and shrinking of the wood when wet or dry, and the same difficulty occurs with the gunwales. As the boats are always suspended by rings from the ends and when launched are sometimes loaded with people, the strain upon the central portion of the boat is very great, and this, together with the shocks caused by handling, launching, and the roughness of the sea, soon loosens the rivets by which the plates are secured together and greatly weakens the central portion of the boat, besides causing it to leak.

It is the object of my invention to overcome these difficulties by my improved construction.

Referring to the accompanying drawings, Figure 1 is a general view of the boat constructed in accordance with my improvements. Fig. 2 is a transverse section showing the construction and connection with the keel, gunwales, and the interior fittings.

The body of the boat consists of single sheets of metal 2 of any suitable or sufficient thickness, which are pressed or stamped into previously-prepared molds or formers, so that; the lines of the boat having been determined and the mold or former made, the metallic sheets can thereafter be pressed in readiness for use with great rapidity, the sheets being preferably heated for this purpose. When thus formed, these continuous sides are riveted or otherwise secured to the keel 3, which is also formed in a single piece of metal, and the joints formed between the two can thus be secured so that there is no danger of any loosening or leaking at this point.

The gunwales 4 consist of semitubular or other shaped hollow or solid pieces properly curved to fit the sheer and formation of the upper edges of the boat sides, and these segments are riveted upon opposite sides of the upper edges of the boat.

The ends of the boat are provided with the usual air-tanks 5, which serve to give it the buoyancy needed in such boats.

The interior fittings consist of the horizontally-curved side boxes 6, extending from end to end between the air-tanks upon each end and approximately following the curvature of the interior of the boat sides. They are of sufficient depth to form considerable air-chambers, which greatly increase the buoyancy of the boat and answer for seats as well as air-chambers. At the ends they are fixed to and supported upon transverse metal cleats 7, and at points intermediate between the ends they rest upon angularly-bent supports 8, which are fixed to the sides of the boat, extending downward and then bent so as to extend horizontally or otherwise beneath these sides, so that they rest upon the supports; but by their construction they leave an open space between their outer edges and the boat sides, thus allowing the metal to be thoroughly dried after immersion, and easy access can be obtained to the whole interior of the boat and to these fittings for painting or other work by simply removing them bodily. This is effected by removing the bolts or other fastenings 9, by which they are secured to the transverse end cleats 7, and as they rest upon the intermediate supports 8 without fastening the side boxes can be lifted

out at once, leaving the interior of the boat substantially free and clear.

The transverse thwarts 10 may be of any number, and they are made in the form of
 5 boxes of sufficient depth and width to receive and hold water, bread, compasses, and such navigating instruments as may be necessary, so that the boat will be always fully equipped and ready for sudden launching and use.
 10 By thus constructing these thwarts I am enabled to dispense with the separate water-kegs and bread-boxes, which are usually carried beneath the ordinary thwarts of the boat. The thwarts are secured to the inner edges
 15 of the side boxes 6 either removably or permanently, as may be desired. If removably, they can be separated from these sides and taken out one by one before the removal of the sides; but if secured together as a single
 20 structure the thwarts and the side boxes can be lifted out by removing the end bolts 9, as previously described.

By this construction I am enabled, first, to accurately shape the sides of the boat, to make
 25 them in large quantities with a certainty of the form being exactly what is desired, to avoid the loss of time and the expense of riveting up separate plates, and also to avoid the danger of leakage at the intersection of said
 30 plates and at the rivet-holes. As I dispense with the overlapping metal at the joints and with the use of rivets, which in the aggregate will weigh considerable, I am enabled to make
 35 the sides of the boat of heavier sheets without increasing the entire weight of the structure, and it is thus made correspondingly stronger to resist the strains brought upon it. Where the boats are to be made up for ship-
 40 ment, these sides, having been first shaped, can be nested together, so that the material for a great number of boats will hardly occupy more space than the sheets, and as the parts are all fitted by the peculiar construction it is very easy to set up and complete the
 45 boat when it arrives at its destination.

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

1. A boat having the sides, each formed of continuous single sheets of shaped metal, a
 50 keel and stem and stern post formed of a single piece of metal to which the boat sides are secured, gunwales formed of segmental strips secured upon opposite sides of the upper edges
 55 of the boat, and interior longitudinally-disposed air-tanks following the interior curvature of the boat sides, transverse end cleats to which they are secured and intermediate hangers or supports upon which the central
 60 portions rest.

2. In a life-boat having air-compartments at the opposite ends, longitudinally-disposed rectangular air-chambers extending between
 said end compartments following the interior
 65 line of the boat sides and out of contact therewith, cleats or supports to which the ends of said side chambers are removably secured, and intermediate supports or hangers fixed
 70 to the sides of the boat and extending beneath said air-chambers.

3. In a boat having air-chambers at the opposite ends, the longitudinally-disposed rectangular air-chambers following the inner
 curvature of the sides of the boat out of contact
 75 therewith, end supports to which said side chambers are removably secured, and transverse box-shaped thwarts extending between said side air-chambers.

4. A boat having end air-chambers, horizontally-disposed rectangular chambers fol-
 80 lowing the inner curvature of the boat out of contact therewith, supports fixed at intervals along the boat sides extending beneath said chambers and upon which they rest without
 85 fastening, end cleats or supports to which the ends of said chambers are removably secured, transverse thwarts extending between said chambers, said thwarts forming containing-
 90 boxes and being removable in unison with the side chambers.

In witness whereof I have hereunto set my hand.

WILLIAM S. RAY.

Witnesses:

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JESSIE C. BRODIE.