

March 18, 1947.

G. W. LEYDE

2,417,508

LIFE SAVING CRAFT

Filed Jan. 12, 1944

3 Sheets-Sheet 1

Fig. 1.

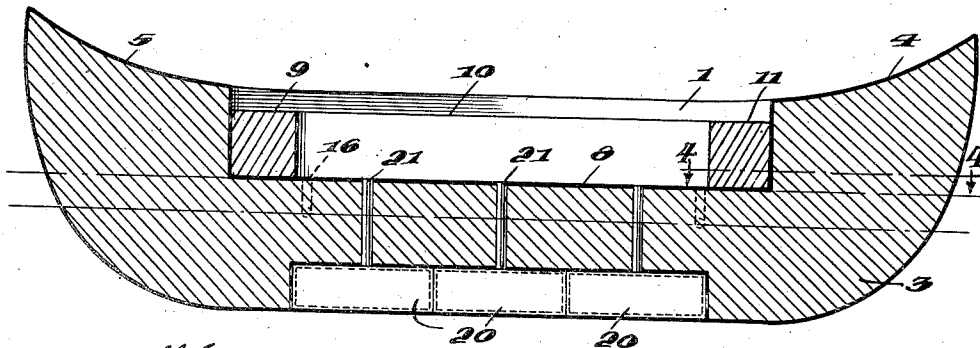


Fig. 2.

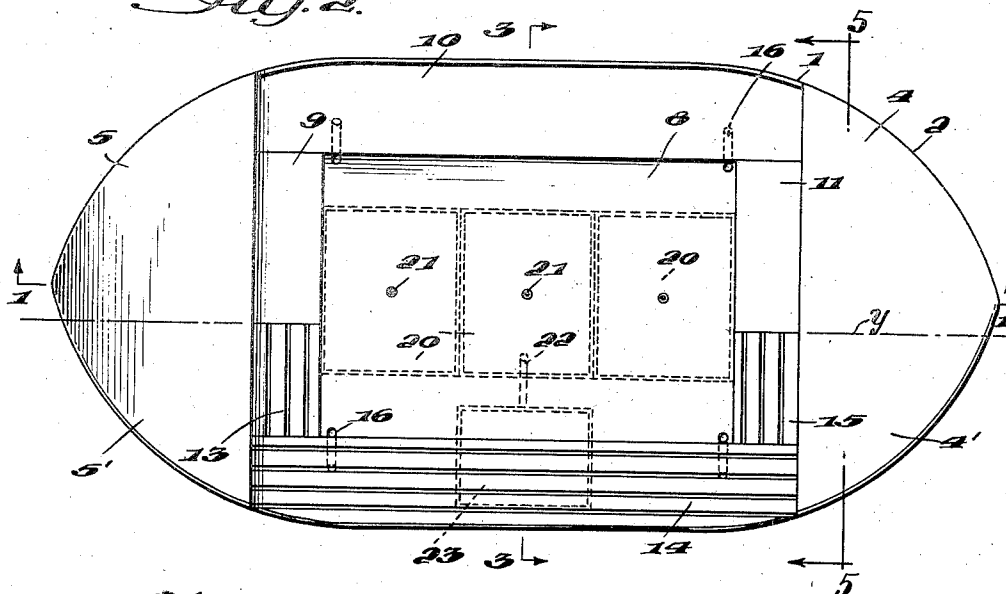
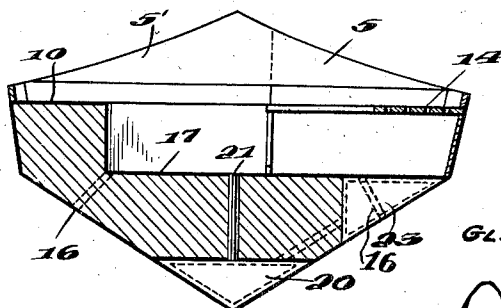


Fig. 3.



Inventor

GLEN W. LEYDE,

By

Leech & Radue,
Attorneys

March 18, 1947.

G. W. LEYDE

2,417,508

LIFE SAVING CRAFT

Filed Jan. 12, 1944

3 Sheets-Sheet 2

Fig. 4.

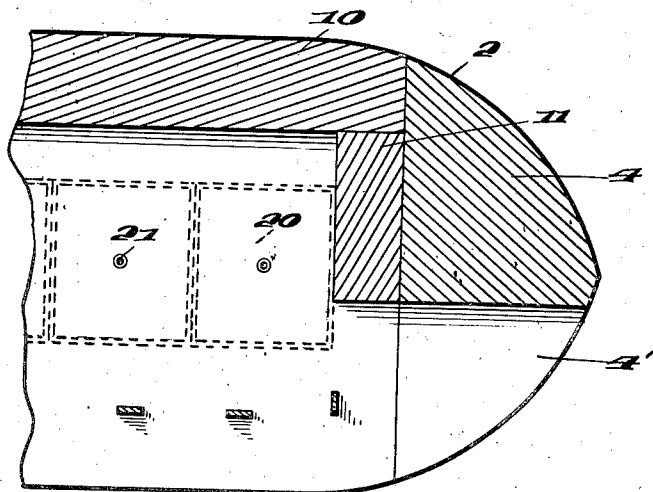
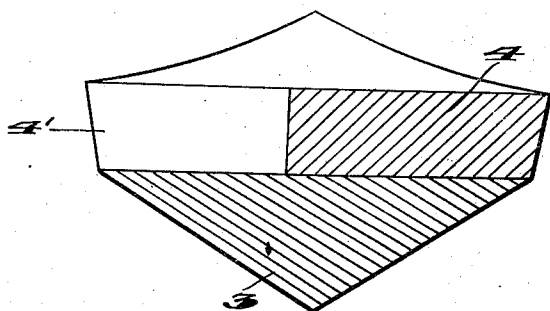


Fig. 5.



Inventor

GLEN W. LEYDE,

By

Leech & Radue
Attorneys

March 18, 1947.

G. W. LEYDE

2,417,508

LIFE SAVING CRAFT

Filed Jan. 12, 1944

3 Sheets-Sheet 3

Fig. 6.

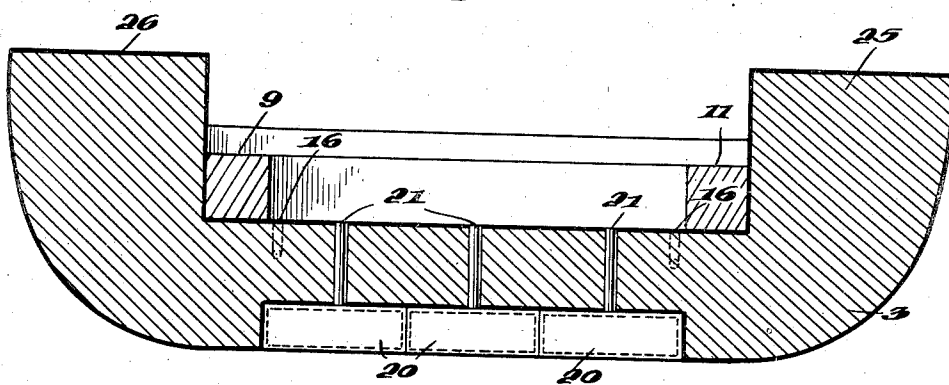


Fig. 7.

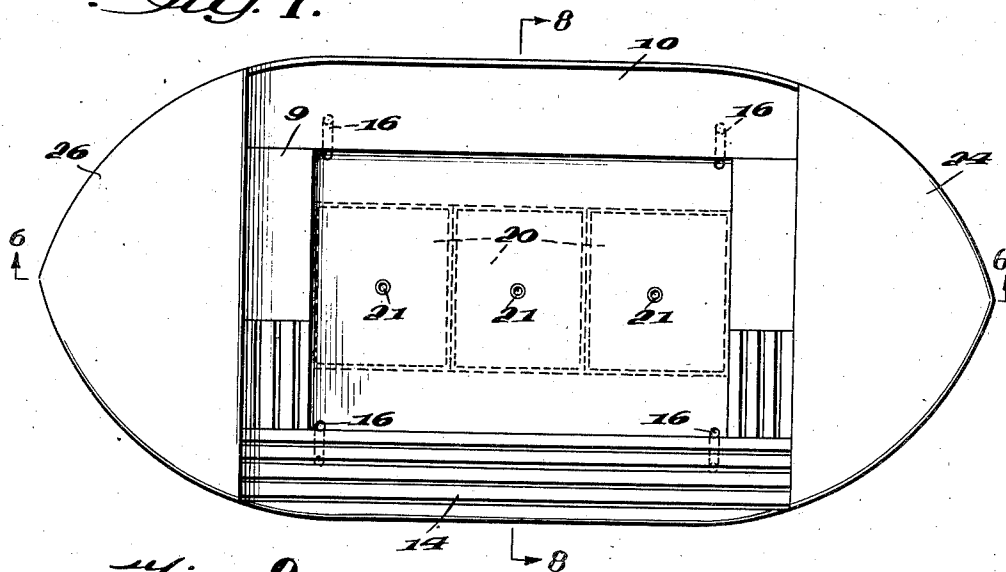
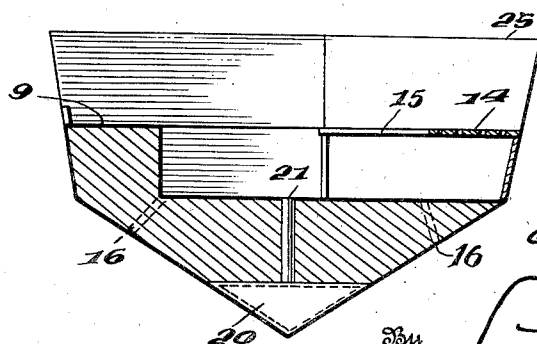


Fig. 8.



Inventor

GLEN W. LEYDE,

By

Leach + Radue

Attorney

UNITED STATES PATENT OFFICE

2,417,508

LIFESAVING CRAFT

Glen W. Leyde, Falls Church, Va.

Application January 12, 1944, Serial No. 518,008

8 Claims. (Cl. 9—3)

1

This invention relates to a self-righting, self-bailing and non-sinkable life boat or life raft, and more particularly to a life raft constructed in a novel manner and possessing inherent advantages not found in prior structures of this general character.

An object of the invention is to construct a marine life saving apparatus which besides possessing the characteristics of being self-righting, self-bailing and non-sinkable, may be constructed of non-essential, economic materials. The present life boat or life raft can be fabricated from sheet material, due to the V-bottom and chine construction, and the entire structure is applicable for quantity production with comparatively unskilled labor.

Another object of the invention is to construct a life raft which is comparatively light in weight as compared with present life rafts and one which may be dropped into the water from the boat deck of a ship at any angle without damage to the life raft, and once in the water will self-right and self-bail itself.

A further object is to construct a marine life saving raft which possesses great buoyancy, and due to the materials used it will not be affected by gun fire or lose its buoyancy if damaged by collision or gun fire.

A life boat carrying out the inventive teachings of the present construction can be readily dropped into the water, due to its lightness and strength, and thus eliminate the necessity of davits, or other launching devices, and the light weight of the structure permits a heavier cargo or payload to be carried by the ship.

The self-righting and self-bailing features of the present life raft makes the device extremely reliable and desirable, for if the raft is swamped when filled with people the raft will right itself and bail itself out and the people can readily re-enter the boat, which will be as safe and comfortable as before its mishap.

Another feature is the novel manner of carrying drinking water for the persons using the boat, and in one form of the invention the use of drinking water to assist in self-righting the raft.

In the accompanying drawings:

Fig. 1 is a longitudinal section, taken on line 1—1 of Fig. 2, of one form of the invention, indicating its solid construction and raised ends, which will lower the center of buoyancy when the boat is in inverted position, to assist in assuming its righted position;

Fig. 2 is a top plan view showing the drinking water tanks in dotted lines and the side ballast tank communicating therewith;

Fig. 3 is a transverse vertical section taken on line 3—3 of Fig. 2, illustrating the solid or filled portions of the life raft, together with the passenger seats and water tanks;

2

Fig. 4 is a fragmentary horizontal section taken on line 4—4 of Fig. 1;

Fig. 5 is a vertical section taken on line 5—5 of Fig. 2;

Fig. 6 is a longitudinal section on line 6—6 of Fig. 5 of a modified form of life raft having raised solid end portions;

Fig. 7 is a top plan view showing the arrangements of the modified form of raft and illustrating the drinking water tanks in dotted lines; and

Fig. 8 is a transverse vertical section taken on line 8—8 of Fig. 7 of the modified form of life raft.

The form of life boat or life raft illustrated in Figs. 1 to 5, inclusive, of the drawings comprises essentially an outer sheet or sheets 1 of steel, plywood, molded fabrics, plastics or the like, having suitable reinforcement therein which are formed in the general configuration of a boat. Where the outer covering of the life saving apparatus is composed of sheet plywood, reinforced fabrics or the like, conventional fore and aft ends 2, are formed and extend with the longitudinal sides the entire length of the boat so that the curvature and general shape of the boat are made which are uni-curved surfaces. If the outer skin or layer is of molded construction, the sides and ends of the boat may be curved and streamlined to give the minimum of resistance to the water together with maximum seaworthiness and other desirable characteristics.

Regardless of the outer skin construction, the entire lower portion 3 of the raft is filled with substantially solid buoyant material, such as balsa wood or one of the well known foam plastics such as "Styrofoam," now being sold in the open market by the Dow Chemical Company. A material of this type fills the entire below-water volume of the boat and the opposite ends of the boat in the sections 4 and 5. The solid buoyant material in these sections extends transversely to slightly beyond the center line 1 of the boat to the dot and dash line Y indicated in Fig. 2. Corresponding fore and aft sections 4' and 5' are hollow and are preferably covered over by the fore and aft upper deck or cover layer overlying the solid portions 4 and 5. Buoyant material is positioned in the side and ends of the passenger well 8, as indicated by the numerals 9, 10 and 11, to a height inside of the well so that the top surfaces of the buoyant material form seats for the passengers. As before stated, the solid buoyant material 4, 5, and sections 9 and 11, extend transversely beyond the longitudinal center of the boat. The ends and sides of the passenger well indicated by numerals 12, 14 and 15, respectively, are fitted with slatted seats, whereby if the life boat is capsized in launching or swamped while in the water, the water will run through the slats and

3

fill up underneath the seat portions 13, 14 and 15, and also the hollow ends 4' and 5', while the remaining buoyant solid sections of the boat will be carried high in the water and self-right the craft. The volume of water carried by the well 8 when the craft rights itself will thereafter drain through upwardly extending scuppers 16, inasmuch as the floor level 17 of the passenger well will be above the water line and the water can drain out by gravity. If desired, these scupper pipes 16 may be provided with plugs or flap valves to insure the water in the well will run outwardly through them and no retrograde action of water can take place.

To further assist in the preservation of life 15 for the passengers and to assist in self-righting the boat, it is desirable to fit the central keel portion with a plurality of drinking water tanks 20 provided with vertical pipes 21, suitably stoppered, through which water in the tanks 20 will be raised for drinking purposes. As shown in Figs. 2 and 3, the keel tanks 20 communicate through pipe 22 with a ballast tank 23 positioned in the side of the boat beneath the slatted seat 14. Thus when the craft is in capsized or swamped position the heavy or non-buoyant side of the boat will be depressed and water from the drinking tanks will run into the tank 23 and assist in raising the buoyant side of the boat and put the boat in self-righted position.

The modified form of life raft shown in Figs. 4 to 6, inclusive, is similar to the preferred form of raft shown and described in Figs. 1 to 3, inclusive. The major differences in construction in the modified form are the carrying upward of the forward and aft solid portions of the boat 25 and 26. The empty fore and aft chambers 25' and 26' are also designated by the dash lines shown in the fore and aft portions of the craft. This construction affords additional protection to the passengers. The solid portions of the modified form are similar, but in this instance the ballast tank 23 is eliminated. It has been found that in northern waters the water running from the drinking tanks 20 to the ballast tank 23 may become frozen, and, although this condition would prevail in the modified form before the boat was launched, it is obvious that once in the water the frozen drinking water in keel tanks 20 will thaw out.

I claim:

1. A non-sinkable, self-bailing and self-righting life craft consisting of a boat shaped shell, a body of porous buoyant material filling the lower portion of said boat shaped shell to a point slightly above the normal water line of said craft, the upper central surface of said material forming the floor of the cockpit of said craft, the body of buoyant material also extending along one side only of the cockpit above the floor thereof and partially filling one side of the ends of said craft.

2. A life saving craft as defined in claim 1 wherein a liquid tank is positioned within and adjacent the boat shaped shell so that movement of the liquid in said tank will assist in righting said craft.

3. A life saving craft as defined in claim 1 wherein liquid tanks are mounted in the keel section and the upper side section of said boat shaped shell opposite said body extension.

4. A life saving craft as defined in claim 1 wherein liquid tanks are mounted in the lower keel section of the boat shaped shell beneath the

4

buoyant material and also adjacent one upper side of said shell, and a restricted conduit connecting said tanks.

5. A life saving craft comprising a boat-shaped shell, a mass of porous buoyant material within said shell and arranged to provide a central well having a deck substantially above the water line of the craft, said material filling substantially all of the shell below said deck and filling the entire ends beyond the well on the larger side only of a vertical fore and aft plane laterally offset slightly from the median plane of the craft, separate tanks mounted in the keel section of the shell beneath the buoyant material and adjacent the side of the skin contiguous with the deck of the well and a conduit joining the tanks.

6. A life saving craft comprising a boat-shaped shell, a mass of porous buoyant material within said shell and arranged to provide a central well having a deck substantially above the water line of the craft, said material filling substantially all of the shell below said deck and filling the entire ends beyond the well on the larger side only of a vertical fore and aft plane laterally offset slightly from the median plane of the craft, said buoyant material extending along one side only of the well above the deck to form a seat, said side corresponding to the side having the filled end sections.

7. A life saving craft comprising a boat-shaped shell, a mass of porous buoyant material within said shell and arranged to provide a central well having a deck substantially above the water line of the craft, said material filling substantially all of the shell below said deck and filling the entire ends beyond the well on the larger side only of a vertical fore and aft plane laterally offset slightly from the median plane of the craft, said buoyant material extending along one side only of the well above the deck to form a seat, said side corresponding to the side having the filled end sections, said filled portions of the ends being extended into the well a short distance and at reduced height to provide end seats therefor meeting said side seat.

8. A life saving craft as defined in claim 7 in which the remaining end and side portions of the well are provided with slat seats at the same level as the buoyant material seats.

GLEN W. LEYDE.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
652,512	Didot	June 26, 1900
799,378	Hedderwick	Sept. 12, 1905
1,049,205	Butow	Dec. 31, 1912
1,050,045	Sivard	Jan. 7, 1913
1,718,764	Sochurek	June 25, 1929
316,881	Dobbins	Apr. 23, 1885
316,882	Dobbins	Apr. 23, 1885
1,181,048	Warren	Apr. 25, 1916
828,852	Ingersoll	Aug. 14, 1906
736,747	Lassere	Aug. 18, 1903

FOREIGN PATENTS

Number	Country	Date
4,411	British	Apr. 9, 1885
122,847	French	Feb. 26, 1878