Nov. 20, 1962 T. J. KANGAS 3,064,282

SURVIVAL CAPSULE

Filed Aug. 16, 1960 2 Sheets-Sheet 1

FIG. 1

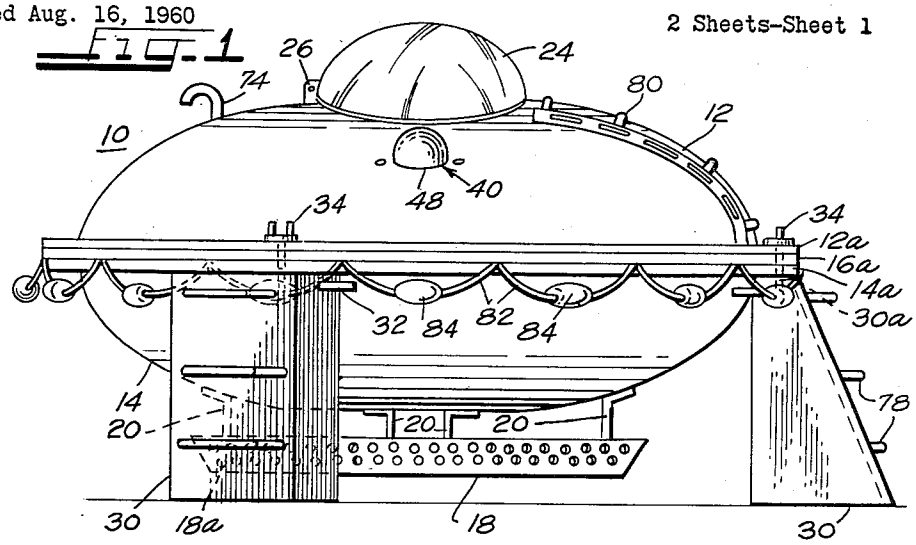
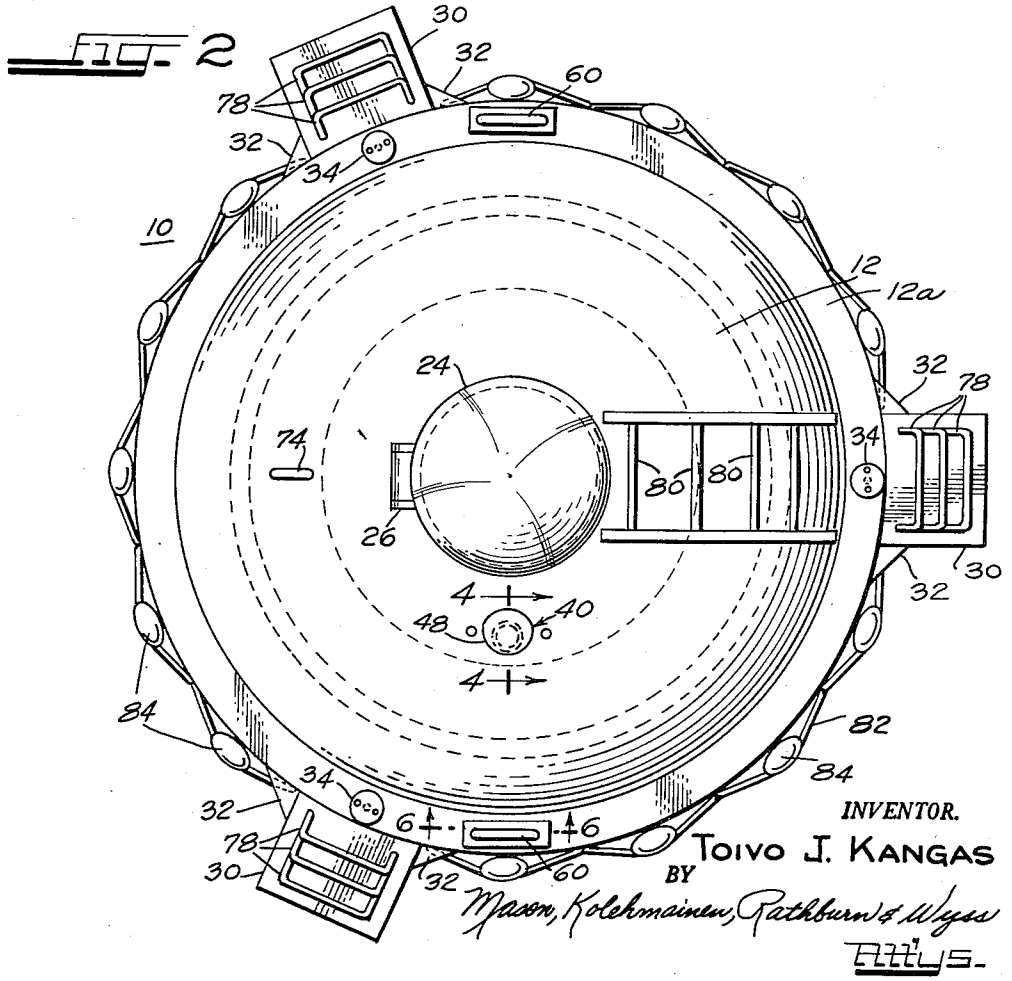


FIG. 2



INVENTOR.
TOIVO J. KANGAS
BY
Mason, Kolehmainen, Rathburn & Wyss
ATTYS.

Nov. 20, 1962 T. J. KANGAS 3,064,282

SURVIVAL CAPSULE

Filed Aug. 16, 1960 2 Sheets-Sheet 2

FIG. 3

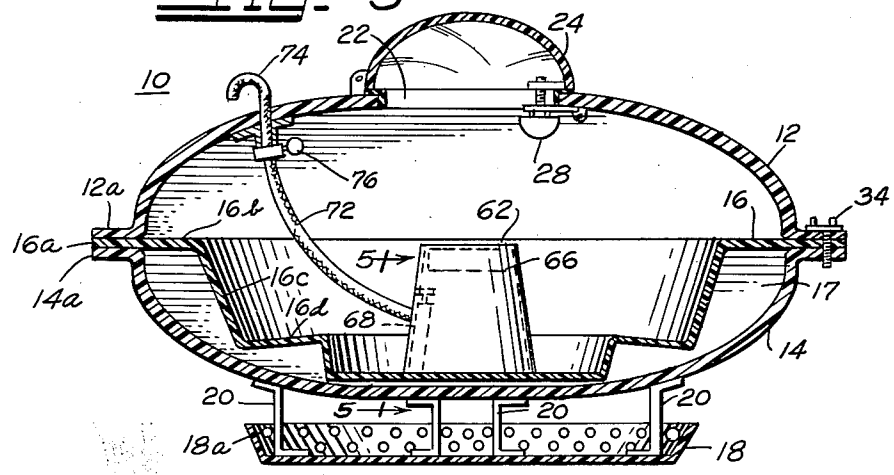


FIG. 4

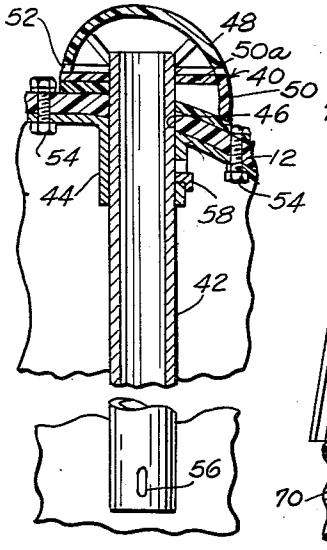


FIG. 5

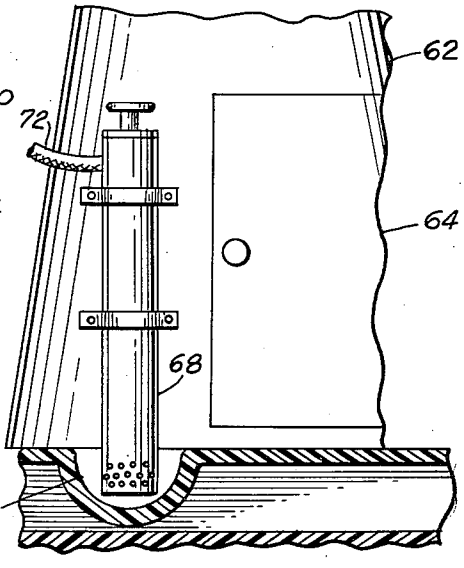
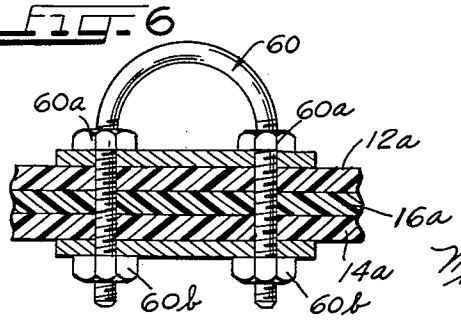


FIG. 6



INVENTOR.
TOIVO J. KANGAS
BY
Mason, Kolehmainen, Rathburn & Wyss
ATTYS.

United States Patent Office 3,064,282 Patented Nov. 20, 1962

3,064,282

SURVIVAL CAPSULE

Toivo J. Kangas, 965 Mill St., Conneaut, Ohio

Filed Aug. 16, 1960, Ser. No. 49,922
7 Claims. (Cl. 9—4)

The present invention relates to a survival capsule or lifesaving craft for use on sea vessels, and particularly adaptable to use on lake boats, and one which can be easily launched.

As is well known, the open type lifesaving craft is good only for abandoning a ship in case of fire or other disaster in a mild sea. The chance of survival in an open lifeboat in rough or stormy weather, such as is frequently encountered on the Great Lakes, is low because the open lifecrafts will fill with water and will otherwise capsize in heavy seas. Moreover, prior lifecrafts have been difficult to launch in a heavy sea. Moreover, on lake boats and the like, if one can generally survive for a day or so, rescue will be at hand so that provision need not be made for survival over a long period of time.

It is therefore an object of the present invention to provide a type of survival capsule which is practical to manufacture and which will provide protection from the weather and which will stay afloat in rough seas without capsizing.

It is a further object of the present invention to provide an improved type of survival capsule which is easy to launch.

It is yet another object of the present invention to provide improved means of obtaining stability in an enclosed survival capsule.

Further objects and advantages of the present invention will become apparent as the following description proceeds and the features of novelty which characterize the invention will be pointed out with particularity in the claims annexed to and forming a part of this specification.

Briefly stated, the survival capsule includes an enclosed shell or hull of generally oblate shape having a perforated stabilizing dish-shaped member attached to the lower end of the bottom or hull of the capsule so that as the craft rides a wave water will be permitted to flow through the perforations of the member and the craft will be maintained at its floating level without being dragged down as the water goes through the holes, thereby producing a stabiling effect to keep the craft in an upright position. The enclosed hull is preferably made of molded glass fiber material and includes a top shell of generally inverted dish shape, a lower shell of dish shape, and an intermediate seating shell. The intermediate shell and the lower shell provide an air space therebetween so that the bottom of the capsule is of double hull construction. When not in use, the survival capsule is secured to brackets on the deck of the boat and securing means are provided for securing the capsule to the bracket. When the securing means are released, the capsule rests on the bracket and is prevented from sliding therefrom by guides on the brackets or capsule. The capsule can be floated up or out from the brackets but cannot slide from the brackets until such time as it is floated. Ventilating air can be supplied to the capsule through a retractable tube.

The nature of the invention will thus be understood when described in connection with the accompanying drawings, in which:

FIG. 1 is an elevational view of the improved survival capsule secured on the deck of a boat;

FIG. 2 is a plan view of the improved survival capsule of FIG. 1;

FIG. 3 is a cross section elevational view of the improved survival capsule;

FIG. 4 is a partial sectional view of the survival capsule illustrating the ventilating tube and taken along line 4—4 of FIG. 2;

FIG. 5 is a partial sectional view of the survival capsule illustrating the arrangement for pumping leakage water from the capsule and taken along line 5—5 of FIG. 3; and

FIG. 6 is a partial sectional view illustrating towing and hoisting means of the capsule and taken along line 6—6 of FIG. 2.

Referring now to the drawings, and specifically to FIGS. 1, 2, and 3, a survival capsule shown generally at 10 is a generally oblate or bulbous shape and constructed of molded glass fiber material and includes an upper inverted saucer-shaped shell 12, a lower saucer-shaped shell 14 and an inner or seating shell 16, each of the shells being provided with an outwardly extending rim or flange portion 12*a*, 14*a*, and 16*a*, respectively, radially about its outer periphery. The shells are secured together at their flanges by any well-known means such as cementing the glass fiber material or by use of gaskets and bolts.

In order to stabilize the capsule and to keep the capsule right side up in water, the capsule is provided with a perforated stabilizing dish-shaped member or hull 18 having a plurality of perforations 18*a*, and secured to and spaced from the lower shell 16 by a plurality of members or brackets 20. As the capsule rides a wave, the water flows through the perforations 18*a* so that the craft is maintained at its floating level and is not dragged down. As the water passes through the holes it gives the capsule a stabilizing effect to keep the capsule in an upright position. The inner or seating shell 16 and the lower shell 14 are spaced apart and form an enclosed air space 17 thereby providing a double lower hull construction to the capsule. In order to provide for entry into the enclosed capsule, the upper shell 12 is provided with an entrance opening or hatch 22 at the center top thereof, and a watertight blister type hatch cover 24 is provided and adapted to be secured over the hatch 22. The hatch cover 24 is preferably transparent so as to provide a lookout or observation bubble for the craft. The hatch cover 24 is pivoted to the upper shell 12 by a hinge 26 and is secured in the closed position by a hand wheel 28.

To secure the capsule 10 to the deck of the boat (not shown) there are provided three deck brackets or capsule supports 30 (FIGS. 1 and 2) secured to the deck of the boat and spaced so that the outer flange portions 12*a*, 14*a*, and 16*a* of the shells rest on the upper surface of the supports 30. A pair of side guide stops 32 is provided on the lower side of the craft edge extending from the flange 14*a* at each of the deck brackets 30 and adapted to slidably engage the sides of the deck brackets 30, so that the craft can be moved only upwardly from the supports, and cannot slide sidewardly from the supports. A readily releasable means or threaded pin 34 extends through the flange portions 12*a*, 16*a*, and 14*a* at each of the supports 30, and is threadedly secured to a threaded aperture 30*a* in each support 30 to secure the craft to the supports.

In order to provide ventilating air to the inside of the capsule 10, there is provided the ventilating means shown generally at 40 and best illustrated in FIG. 4. The ventilating means 40 includes a retractable ventilating tube 42 of stainless steel which is slidably secured in a brass tube fitting 44 and which extends through an opening 46 in the upper shell 12 of the capsule 10. The upper end of the tube 42 is provided with a dome-shaped splash guard 48 secured in spaced relation over the upper end of the tube 42 by a plurality of struts 49. An outer tube fitting 50 is provided concentric with the tube 42 through which the tube slidably passes. The fitting 50 is provided with a flat upper surface 50*a* having a rubber sealing member 52 about its outer periphery against which the outer

periphery of the guard 48 is adapted to seat when the tube 42 is in the lower position as illustrated in FIG. 4. The tube fitting 44 and the fitting 50 are secured to the upper shell 12 by a plurality of fastening members 54. When it is desired to provide ventilating air to the inside of the capsule, the tube 42 can be moved upwardly so that the seal between the guard 48 and the fitting 50 is separated. To hold the ventilating tube 42 in its upper position, a slot 56 is provided near the bottom of the tube 42 so as to receive a prong 58 in the fitting 44. When not in use, the ventilating tube 42 would be inside the capsule 10 and the splash guard 48 would form a watertight seal against the fitting 50 to prevent the seepage of water. Each occupant of the capsule 10 would be provided with oxygen means such as an oxygen bottle and a mask fastened beside him for use if needed.

To provide for hoisting or towing the capsule 10, the capsule 10 is provided with a pair of U-bolts 60 (FIG. 6) fastened through the outer edge or flanges 12*a*, 14*a*, and 16*a*, and secured thereto by a pair of upper nuts 60*a* and a pair of lower nuts 60*b*.

In order to provide for seating of the occupants in the capsule 10, the inner or seating shell 16 includes an upper annular seating portion 16*b* and a recessed cup-shaped portion 16*c* which provides for foot space for the occupants. A disk portion 16*d* is disposed across the bottom of the cup-shaped portion 16*c*. Moreover, a center compartment or observer's seat 62 is provided which serves as a seat for a lookout under the transparent hatch cover 24 and which also serves as a step to facilitate entry into the capsule. The compartment 62 is provided with a door 64 and contains flashlights, flares, food, and the like. If desired, the lookout, as well as the other occupants, may each have built under them a built-in disposal 66 for personal waste and provided with a snap-on cover. Alternatively, plastic bags may be stored in the compartment 62.

In order to provide for removal of seepage water from the capsule 10, there is provided a hand water pump shown generally as 68 (FIGS. 3 and 5) and secured to the outer side of the compartment 62. The pump intake extends into a well 70 set into the portion 16*d* of the inner shell 16 to provide a low spot for the accumulation of the seepage water. The pump exhausts through a hose 72 to the outside of the shell 12 through the pump outlet 74 (FIGS. 1, 2, and 3). A valve 76 is provided in the hose 72 inside the capsule 10 to prevent the inward seepage of water when the pump 68 is not in use.

To provide for easy access into the entrance hatch 22 of the capsule 10, one or more of the supports 30 are provided with a plurality of steps 78 and additional steps 80 are molded into the glass fiber upper shell 12 to form a ladder from the support 30 to the hatch 22.

In order to provide assistance to survivors who might have been thrown overboard or who are otherwise floating about in the wreckage area, the capsule 10 is provided with an outside rope 82 (FIGS. 1 and 2) and a plurality of bobbers 84. The rope 82 is secured to the outer flange portion 12*a*, 14*a*, and 16*a*, and provides a place that persons may hang onto.

If it were desired to enter and launch the capsule 10, the threaded pins 34 which hold the craft 10 to the supports 30 would be cranked out so that the craft would be free to float upwardly. Even with the pins 34 removed and with the boat rocking in rough water the capsule 10 would not slide around and would remain on the support 30 due to the restraint of the guides 32. The capsule 10, however, would be merely resting on the support and if the boat were to sink from underneath the capsule the capsule 10 would then float on the water.

In order to enter the capsule 10, a person could climb the steps 78 on the support 30 and climb the steps 80 on the upper shell 12, then enter the shell through the entrance hatch 22 with the hatch cover 24 open, stepping down on the lookout's seat 62, and take a place or position on the seating surface 16*b* of the inner shell 16. A safety belt (not shown) is provided for each occupant. After the lookout enters the capsule 10, the transparent watertight hatch cover 24 would be shut and would be fastened by tightening the threaded hand wheel 28. The occupants, including the lookout, would be seated in position and strapped by safety belts. The occupants who are seated on the inner shell 16 will help to stabilize the craft. When the capsule 10 is launched by the sinking or destruction of the boat, it would land right side up as this is the manner in which it rests on the brackets. The people who would be sitting within, with the hatch cover 24 closed, would aid the balance of weight so that the capsule would always tend to float right side up. Moreover, if the capsule 10 were to land upside down in the water, it would tend to right itself due to the balance of the weight of the people strapped in their seat and the added bottom stabilizing member 18. Once the capsule 10 is floated right side up, the perforated member 18 is filled and surrounded with water and it serves to hold the capsule right side up. The lookout, seated on the compartment 62, can see through the transparent hatch cover 24 and he can open the hatch for air as desired.

While a preferred embodiment of the present invention has been described by way of illustration, many modifications will occur to those skilled in the art. It is intended therefore in the appended claims to cover all such modifications as fall within the true spirit and scope of the invention.

What is claimed as new and desired to be secured by Letters Patent of the United States is:

1. An enclosed lifesaving capsule comprising a generally oblate hull, a perforated stabilizing dish-shaped member, and means securing said member to the lower surface of said hull in spaced relation therewith.

2. An enclosed lifesaving capsule comprising a generally oblate hull shape including an upper shell of generally inverted dish shape having an outwardly extending radial flange around its periphery and provided with an entrance hatch, a watertight cover over said hatch, a lower dish-shaped shell having an outwardly extending radial flange around its periphery, means securing said flanges together in watertight relation, a perforated stabilizing dish-shaped member, and means securing said member to the lower surface of said lower shell in spaced relation therewith.

3. An enclosed lifesaving capsule supported from the deck of a water vessel and comprising, in combination, a plurality of support members for said vessel above said deck, an upper shell member of generally inverted dish shape having an outwardly extending radial flange around its periphery, a lower dish-shaped shell member having an outwardly extending radial flange around its periphery and secured to the first-mentioned flange to form said capsule, said flanges resting on said support members, readily removable means securing said flanges to each of said support members, at least one of said members being provided with guide stop means to prevent said capsule from sliding sidewardly from said support members when said securing means are released whereby said capsule can be moved only upwardly from said supports.

4. A lifesaving capsule supported from the deck of a water vessel comprising, in combination, an enclosed lifesaving capsule member, support members supporting said capsule member from said deck, and means cooperating with at least one of said members for preventing sideward movement of the capsule member on the support members while permitting upward movement of said capsule member from the support members.

5. A lifesaving capsule supported from the deck of a water vessel and comprising, in combination, a plurality of support means extending from said vessel above said deck, a generally bulbous-shaped lifesaving capsule means resting on said support means, readily removable means

securing said capsule means to said support means, one of the first two-mentioned means being provided with guide stops to prevent said capsule means from sliding sidewardly from said support means when said securing means are released whereby said capsule means may be moved only upwardly from said support means.

6. An enclosed lifesaving capsule having a generally oblate hull and comprising an upper shell of generally inverted dish shape provided with an outwardly extending radial flange around its periphery and further providing an entrance hatch, a watertight hatch cover adapted to cover said hatch, a lower dish-shaped shell provided with an outwardly extending radial flange around its periphery, an intermediate member having an outwardly extending radial flange around its periphery positioned between the first- and second-mentioned flanges and forming an air compartment with said lower shell and thereby providing a double hull construction to said capsule, and means securing said flanges in watertight relation.

7. An enclosed lifesaving capsule having a generally oblate hull and comprising an upper shell of generally inverted dish shape provided with an outwardly extending radial flange around its periphery and further providing an entrance hatch, a watertight hatch cover adapted to cover said hatch, a lower dish-shaped shell provided with an outwardly extending radial flange around its periphery, an intermediate member forming a seat defining structure having an outwardly extending radial flange around its periphery positioned between the first- and second-mentioned flanges, forming an air compartment with said lower shell, thereby providing a double hull construction to said capsule, and means securing said flanges in watertight relation.

References Cited in the file of this patent

UNITED STATES PATENTS

173,966	Judson	Feb. 22, 1876
663,173	Hoy	Dec. 4, 1900
969,020	Woods	Aug. 30, 1910
1,270,616	Hazleton	June 25, 1918
1,712,167	Pontikis	May 7, 1929
2,813,050	Hickson	Nov. 12, 1957
2,826,423	Erickson	Mar. 11, 1958
2,849,978	Durham	Sept. 2, 1958
2,978,716	Jackson	Apr. 11, 1961

FOREIGN PATENTS

8,570	Great Britain	Nov. 6, 1913
176,800	Canada	May 8, 1917