

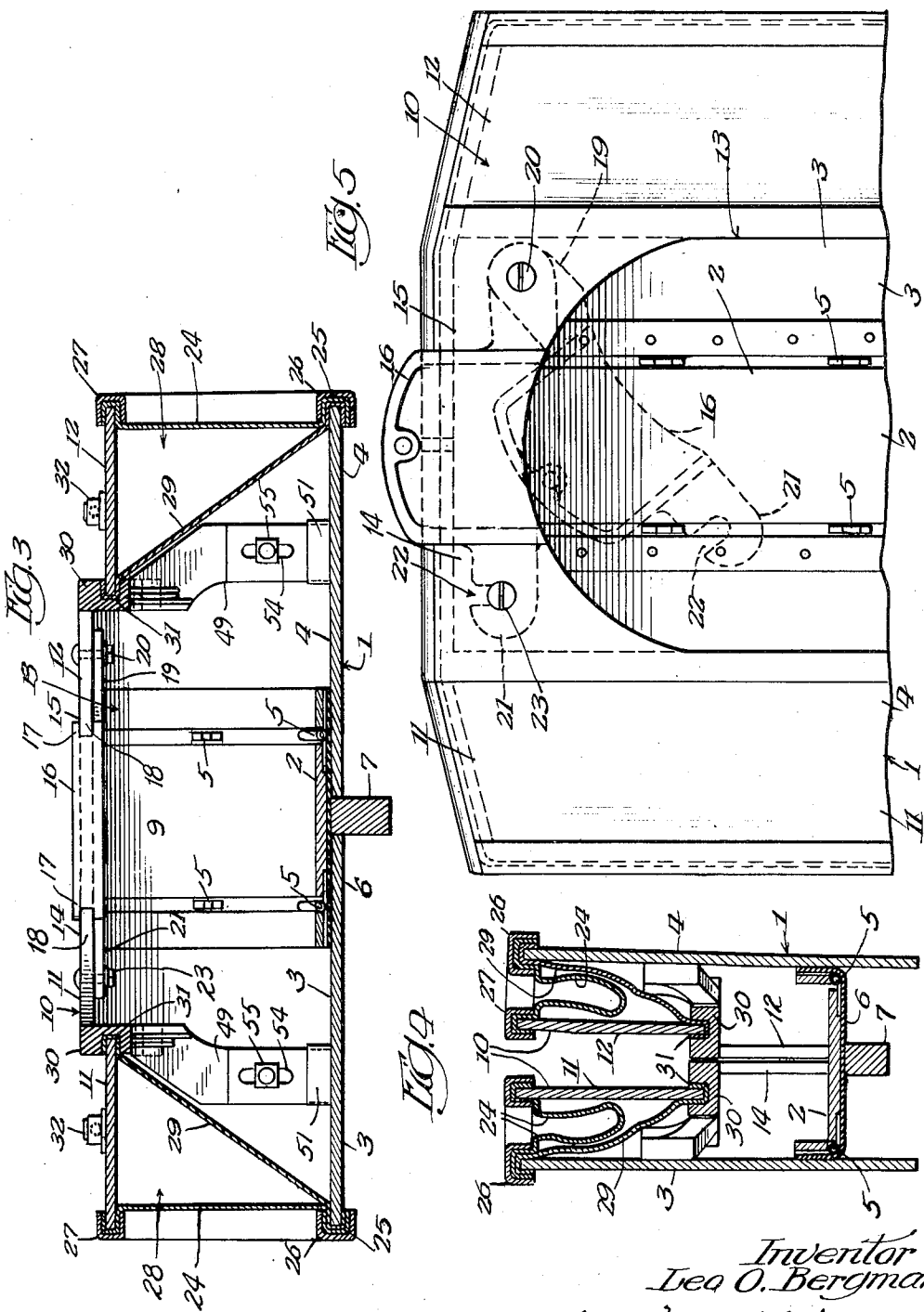
April 17, 1951

L. O. BERGMAN
FOLDING BOAT

2,549,412

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3 Sheets-Sheet 2



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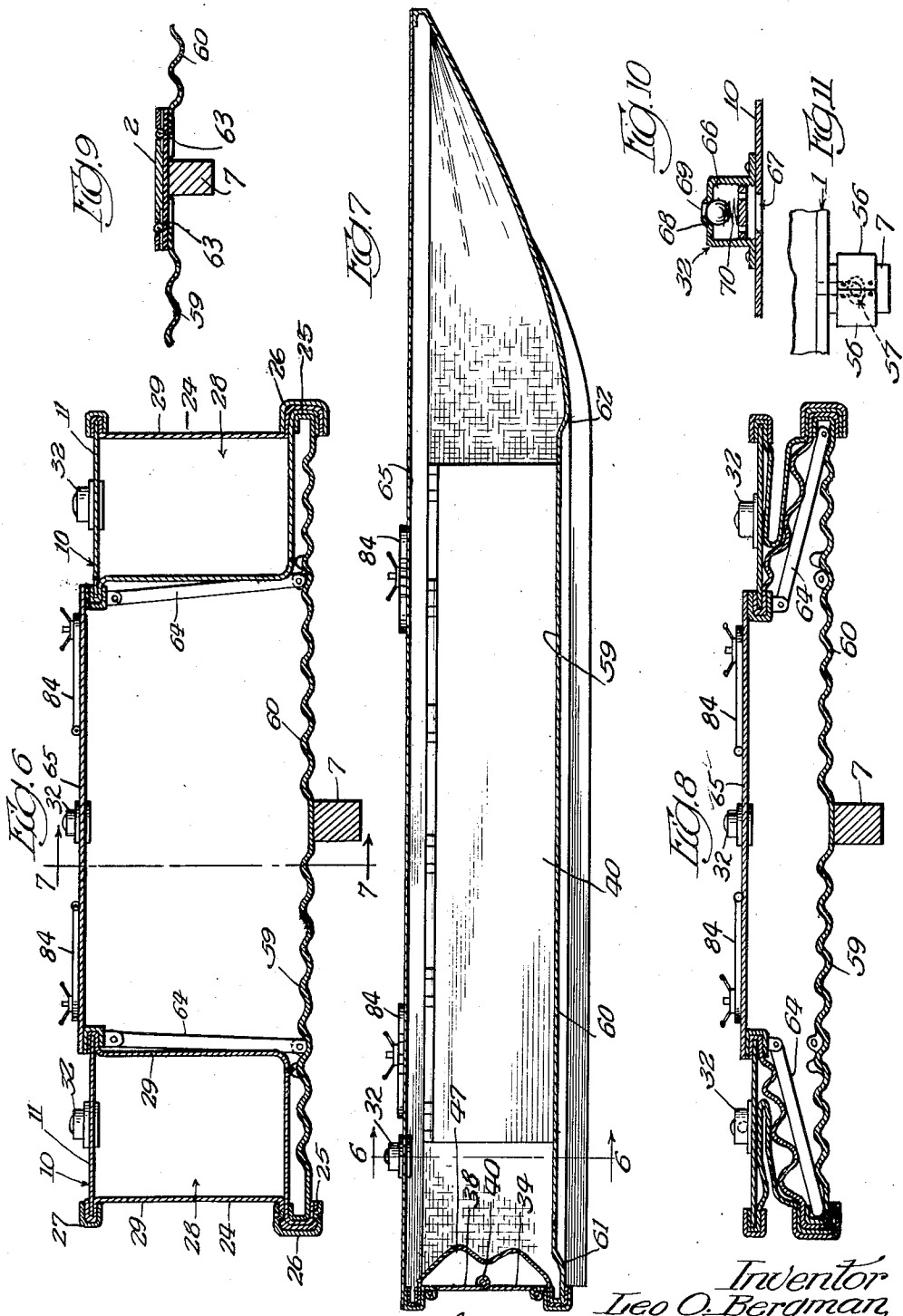
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UNITED STATES PATENT OFFICE

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FOLDING BOAT

Leo O. Bergman, Coloma, Mich.

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13 Claims. (Cl. 9—2)

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This invention relates to boats in general, and particularly to that class of boats which includes row boats, outboard motor propelled boats, and other similar boats for use in sports such as racing, hunting, fishing, and the like.

An important object of the present invention is the provision of a boat which, while composed of a plurality of parts or sections joined together, comprises in effect a one-piece boat adapted to be folded.

Another object of the invention is the provision of a boat which is adapted to fold and open vertically, and when folded has the appearance of a trunk and includes a space in which articles may be stored.

A further object of the invention is the provision of a vertically foldable boat which is adapted to take in air when opened, so as to fill the air compartments or sections extending longitudinally along the sides of the boat.

A still further object of the invention is the provision of a boat of new and novel construction which is adapted to be folded longitudinally and which is adapted to be substantially automatic in opening.

Still another object of the invention resides in the provision of a foldable boat having an adjustable freeboard with a plurality of separate air pockets arranged longitudinally along the sides thereof, with air valves for each pocket so as to cause air to be sucked into the pockets when the boat is opened, and which will permit the air to be expelled during the folding of the boat.

A still further object of the invention is the provision of a boat which is adapted to be folded and which is provided with a resilient bottom so as to provide the proper buoyancy of the boat during various circumstances and to permit the boat to be propelled at very high speed and still maintain the proper equilibrium.

Numerous other objects and advantages will be apparent throughout the progress of the following specification.

The accompanying drawings illustrate a selected embodiment of the invention and the views therein are as follows:

Fig. 1 is a detail perspective view of one form of boat and embodying the invention;

Fig. 2 is a detail longitudinal sectional view on the line 2—2 of Fig. 1;

Fig. 3 is a detail transverse sectional view on the line 3—3 of Fig. 2;

Fig. 4 is a transverse sectional view taken transversely across the boat when folded;

Fig. 5 is a detail top plan view showing the for-

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ward end or bow of the boat and the means for locking the parts when in open or operable position;

Fig. 6 is a detail transverse sectional view on the line 6—6 of Fig. 7 and showing a modified form of longitudinally folding boat;

Fig. 7 is a detail longitudinal sectional view of the boat shown in Fig. 6 on line 7—7;

Fig. 8 is a detail transverse sectional view of the boat shown in Figs. 6 and 7 showing the same in collapsed position and with a deck closure provided thereon to provide a pontoon;

Fig. 9 is a detail transverse sectional view showing the manner in which the boat shown in Figs. 6 to 8 may be constructed to permit the same to be folded longitudinally;

Fig. 10 is a detail sectional view showing a form of valve construction that may be used in connection with the side air compartments or bulkheads;

Fig. 11 is a detail view showing the so-called automatic bailing device; and

Figs. 12 and 13 are detail views showing openings in the top to permit air to be sucked in or forced out during opening and folding of the boat, with means for closing the openings.

The particular boat herein shown for the purpose of illustrating the invention comprises a bottom 1, Figs. 1 to 5, having a longitudinal central section 2 and longitudinal side sections 3 and 4. The side sections 3 and 4 are connected to the central section 2 by means of longitudinally extending hinges 5, there being waterproof canvas 6 overlying the inner edges of the bottom side members 3 and 4 and underlapping the central section 2, as clearly shown in Fig. 3. A keel 7 is rigidly secured along the center line of the bottom and extending from the rear end of the boat forwardly a predetermined distance where it tapers upwardly, as indicated at 8, Fig. 2. The bottom sections 2, 3, and 4 are each preferably made of suitable material, such as plywood, hinged together by the hinges 5, which may be either a plurality of hinges spaced at suitable intervals or a continuous hinge commonly referred to as a "piano" hinge.

The bottom of the boat when open may assume various positions. It may be relatively flat, as shown in Fig. 3, or it can be made to assume a V-shaped formation, or it can be made what is termed a "tunnel" bottom. Regardless of the shape the bottom assumes, it is of the sled type, whereby the rearward portion is relatively straight, while the forward end slopes or tapers upwardly, as indicated at 9, Figs. 1 and 2. The

sheet of canvas 6 overlying the inner edges of the side sections 3 and 4 and underlying the bottom of the central section 2, is for the purpose of permitting the boat to be folded longitudinally and still maintain a proper watertight connection when the boat is unfolded in operable position, as shown in Figs. 1 and 3. The bottom has no canvas on its underside, as the waterproof material is applied over the side sections 3 and 4, and while underlying the central section 2 it is protected by the keel and by the inward edges of the side sections. The canvas is thus properly protected, and there is no exposed canvas on the bottom to drag or be cut.

The boat also comprises an upper section 10 which includes the top side sections 11 and 12, so arranged as to form an open cockpit 13. The forward ends of the sections 11 and 12 converge inwardly a predetermined distance, as indicated at 14 and 15, respectively, Fig. 1, and constitute a part of the top deck 10 and define the forward end of the cockpit 13. The top may also include a top central section 16 which is provided with longitudinal grooves 17 on each side thereof to receive the inner ends 18 of the top sections 11 and 12, as clearly shown in Fig. 1. The section 16 is adapted to have interlocking engagement with the sections 11 and 12 by engagement with the converging parts 14 and 15 of the said sections 11 and 12, respectively. The section 16 is provided with an elongation 19 which is adapted to be pivotally connected at 20 to the part 15 of the side section 12. An oppositely disposed extension 21 is rigid with the section 16 and is provided with a notch or keeper 22 to lockingly engage a locking element 23 fixed to the underside of the converging section 14 of the top side section 11, as clearly shown in Fig. 5.

The boat also includes oppositely disposed sides 24 made of suitable flexible waterproof material, such as waterproof canvas. The sides 24 extend about the outer edges of the bottom sections 3 and 4 and project a predetermined distance beneath the bottom of the sections, as indicated at 25. A suitable longitudinal strip, such as a channel-shaped metal ferrule 26, is secured to the outer edges of the side sections 3 and 4 and impinges the sides 24 to the bottom, making a longitudinal waterproof seam. An upper channel-shaped metal ferrule 27 secures the upper ends of the sides 24 to the top or deck section 10, the ferrules 27 impinging the flexible sides 24 to the respective top sections 11 and 12, as clearly shown in Fig. 3.

It is desirable and advantageous that the boat be provided with air compartments or bulkheads 28 along each longitudinal side thereof. These bulkheads are formed by securing waterproof flexible material 29 to the bottom and to the inner edges of the top sections 11 and 12. The lower end of the flexible waterproof material 29 is secured at its lower end by the longitudinal clips or ferrules 26, and at its upper end by longitudinal groove members 30 secured to the inner ends of the top side members 11 and 12. The members 30 are recessed, as indicated at 31, Fig. 3, and receive the inner ends of the end sections, the material 29 being locked in place by the ends of the members 11 and 12 engaging the recesses 31 in the members 30 in substantial tongue and groove fashion. Valve members 32 are operatively positioned in the tops of the top side sections 11 and 12 so that when the boat is opened from its folded position, shown in Fig. 4, to the open position shown in Fig. 2, air will be sucked into the

compartments 28. The compartments 28 may each be a single compartment on either side of the boat extending from front to rear, as shown in the drawings, or they may be divided into a plurality of separate compartments so that should the outer side wall 24 become damaged, the entire compartment 28 would not become filled with water because of the spaced division walls. These spaced division walls provide separate compartments and each compartment, of course, would be provided with a valve 32.

The rear 33 of the boat comprises end sections 34 and 35 which are hinged at 36 and 37, respectively, to the side sections 3 and 4 of the bottom 1. The end sections 34 and 35 each include upper sections 38 and 39, respectively (Figs. 1 and 7). Each of the upper end sections 38 and 39 is secured to its co-operating lower section 34 and 35, respectively, by means of hinge elements 40. The sections 34 and 38 and the sections 35 and 39 close the rear end of the boat, with the exception of the longitudinal seam 41 where the sections abut, as clearly shown in Fig. 1. The upper ends of the sections 38 and 39 are pivotally secured by hinges 42 to the underside of the top side sections 11 and 12, respectively, as clearly shown in Fig. 2. The end 33 which comprises the double pivoted sections 34, 38, and 35, 39, is adapted to be locked together by means of a locking member 43. The locking member 43 is pivoted at one end, as indicated at 44, to the upper end section 39. The free end 45 of the locking member 43 is provided with a keeper and is adapted for engagement with a locking member 46 provided in the upper end section 38, as clearly shown in Fig. 1. When the boat is to be folded, the locking member 46 is released and the elements of each of the stern members 33 are folded with respect to each other, and the members 10 and 12 are collapsed upon the bottom members before the boat is folded along the hinges 5.

An inner liner 47, made of flexible waterproof material such as waterproof canvas, is secured to the rear vertical edges of the side members 24 and by a waterproof connection to the bottom 1 of the boat, so as to prevent water seeping through the seam 41 and getting into the interior of the boat. This liner 47 may be secured to the bottom in any convenient watertight manner, such as by the use of a channel-shaped ferrule 48 which locks the bottom longitudinal edge of the liner 47 in watertight fashion to the bottom.

The boat is adapted to be folded by disengaging the front member 16 and the rear latching member 43, thereby permitting the boat to be folded inwardly along the hinge lines 5, as shown in Fig. 4. The side walls 24 being made of flexible material, are adapted to be folded in, whereupon the boat, when folded, will assume the position shown in Fig. 4. The boat is opened by pressing the bottom side sections 3 and 4 outwardly, whereupon the boat will be in the position shown in Fig. 3. To maintain the boat in its open or unfolded position, the member 16 is swung from the dotted line position shown in Fig. 5 to the position where it will engage the keeper 23, whereby the front end of the boat is locked. The keeper 43 is then swung into position for engagement with its co-operating locking element 46, whereby the rear end of the boat is maintained in operable position.

When the bottom side members 3 and 4 are spread outwardly, stretcher members 49 spread the top section 10 from the bottom section 1,

as clearly shown in Fig. 1. These stretcher members 49 may be provided with springs 50 so that when the boat is being unfolded the stretcher members 49 will be automatically pulled into position until they engage the stops 51, Fig. 1. It is desirable that the sides 24 be relatively loose or somewhat flappy and, therefore, the stretcher members 49 are made adjustable. Each stretcher member 49 is preferably made of two parts 52 and 53, Fig. 1. The parts 52 and 53 may each be provided with an elongated slot 54 and locked in adjusted position by means of a locking member 55, which may comprise any suitable means, such as a bolt with a wing nut. The purpose of making the stretcher members 49 adjustable is so that the freeboard may be adjustable, the freeboard being the space from the gunwale to the water line. The adjustability of the freeboard makes the boat adaptable under various conditions and circumstances. For instance, should the day be calm and the water smooth, it is desirable that the freeboard be relatively shallow, while on rough days it is desirable that the freeboard be relatively deep. The freeboard, therefore, is adjustable to accommodate various conditions.

If desired, an automatic bailing device 56 may be provided for the boat. This automatic bailing device comprises an opening 57, Fig. 11, extending through the keel 7 and communicating with the interior of the boat, as shown in Figs. 2 and 11. A sheet or strip of flexible material, such as rubber, 58 is secured top and bottom to the keel and covers the opening 57 at the end of the keel. During the forward movement of the boat through the water a suction will be applied to the member 56, whereupon any water which may be in the bottom of the boat will be drawn out. However, when the boat is not in motion water will be prevented from seeping upwardly through the member 56 and into the boat.

A modified form of construction is disclosed in Figs. 6 to 10, wherein the bottom 1 is made of corrugated sheet metal material 59, such as Duralumin, Fig. 6. The sheet metal material 59 is provided with longitudinal corrugations 60 which extend from the rear of the boat, as indicated at 61, Fig. 7, to a forward edge 62 at the point where the bottom slopes upwardly, Fig. 7. The bottom may be of a single piece of sheet metal material, as shown in Figs. 6, 7, and 8, or it may be provided with longitudinal hinge connections 63, Fig. 9 so that the boat may be folded in the same manner as shown in Fig. 4. Stretcher members 64 may assume the position shown in Figs. 6 and 8, or they may be made of two pieces provided with slots and locked together by fastening means 55, in the same manner as previously described with respect to the stretcher members 49. In Fig. 8 the cockpit of the boat is shown closed by a top member 65, whereby the boat is converted into a watertight pontoon, and when opened will draw in air through the valves 32 and thereby cause air to enter into the compartments 28. The top member 65 may be provided with openings having removable covers 84 allowing access through the member 65 for the operation of the stretcher members 64. In cases where a pontoon is to be employed solely as a pontoon and not as a pontoon converted from a boat, the stretcher members 64 may be exteriorly positioned for instant operation and manipulation.

Any suitable valve 32 may be employed for the

purpose, and one form of valve which may be employed is disclosed in Fig. 10. Fig. 10 discloses a valve having a housing 66 secured to the appropriate section of the top 10, there being an opening 67 provided in the top section to permit the entrance of air through the valve 32 and into the compartment 28. The top of the housing 66 may have its inner surface rounded to provide a seat 68 for a ball valve 69. A spring 70 normally maintains the ball 69 against its seat 68. If desired, suitable means (not shown) manually operated may be provided for unseating the ball 69 from its valve seat 68 so as to permit air in the compartments 28 to escape. The construction shown will permit air to be automatically received into the compartments 28, as the air tending to rush into the compartment when the boat is unfolded will unseat the valves sufficiently and thereby cause the compartments to be self-inflating when the boat is being opened.

The invention provides a boat which is adapted to be folded longitudinally and which has a flexible bottom. The boat is all in one piece and can be put in operable position by merely locking the two locking elements 23 and 43. The boat may be folded by pulling out the stretchers 49 after the locking means 23 and 43 have been disengaged. The boat is exceedingly safe because of the air compartments 28, whether each air compartment be a single longitudinal compartment or whether the compartments be separated into a plurality of longitudinally extending adjacent compartments. The boat will remain afloat even though the hold should become punctured. Also, the boat will remain afloat if a part of the side wall 24 is damaged, where the air compartment comprises a plurality of spaced individual compartments. The folding boat may comprise the sectional bottom disclosed in Figs. 1 to 5 and 9, or it may comprise a single one-piece bottom, as shown in Figs. 6 to 8. The boat is light in weight, is strong and durable in construction, is adapted to be propelled by an outboard motor secured to the end member 33, or it may be used as a row boat, or it may be converted into a pontoon. Because of the construction it may be moved from place to place readily and easily, and is adapted to be secured to the side of an automobile while being transported from one location to another.

The boat may be provided with a plurality of spaced openings 71, each leading to a bulkhead of the air compartment 28 so that air may be sucked in or forced out as the boat is being opened or folded to closed position. These openings may be closed by a strip 72 which has limited slidable movement. Openings 73 in the strip 72 may register with the openings 71 in the boat deck when the boat is opened or closed to permit air to enter into or come out of the compartments or bulkheads. The openings 71 are closed when the strip 72 is shifted, whereby the material between the openings 73 will form a seal for the openings 71. There is one opening for each bulkhead should the compartments 28 be divided into separate bulkheads, as hereinbefore mentioned. Other means for closing the openings 71 may be provided, and in actual practice it has been found that closures such as corks may be used for closing the openings 71. The strip 72, having the openings 73, may be provided instead of the separate valve members 32, Figs. 12 and 13.

The boat herein provided is adapted to have one or more seats 74, Figs. 1 and 2. Each seat 74 includes a pair of hangers 75 arranged on op-

posite sides of the boat, with a supporting seat element 76 preferably made of canvas or other suitable flexible material.

Each hanger 75 comprises a horizontal longitudinal rod 77 which is turned upwardly to provide the vertical parts 78. These vertical parts 78 are then bent transversely and horizontally, providing the supporting sections 79. The ends of these supporting sections 79 are provided with down-turned ends or tips 80, which are adapted to be received in spaced apart holes 81 provided in a strip 82, there being a strip 82 on each side loosely resting on top of the top deck sections. Flexible material, such as canvas, passes over the longitudinal horizontal sections 77 in roller towel fashion, and comprises the seat element 76. The free ends of the canvas which comprises the seat element 76 are secured together by lacing, so that the material may be drawn relatively taut or made relatively loose, as desired. The seat, being supported adjustably longitudinally along the strips 82, and the strips 82 being loosely mounted and supported on the top deck, may therefore be shifted longitudinally so that the boat occupant may assume practically any position desired longitudinally of the boat. Oarlocks 83 are secured to the forward ends of each strip 82 whereby the oarlocks 83, the strips 82, and the seat 74 are adapted to be shifted longitudinally as a unit. No means are required for securing the strips 82 as the seat is secured in somewhat rigid position on the strips 82, which also carry the oarlocks, and no longitudinal shifting of the seat will occur during use as the weight of the occupant assists in maintaining the parts in relative position. When it is desired to shift the seat to various positions the weight of the occupant is removed from the seat, thereby permitting free slidable movement of the seat and the strips longitudinally. The seat 74 need not be removed from position during the folding of the boat, as the seat section 76 is flexible and the hangers 75 are relatively shallow. The seat, therefore, while comprising an independent unit, co-operates with the balance of the structure to permit the seat to be slidably shiftable longitudinally. The strips 82 are prevented from pulling inwardly because they abut the outer edges of the longitudinal strips arranged along opposite sides of the cockpit.

The open cockpit may be reduced in size by means of a canvas deck which is operatively secured along the edges of the top sections 11 and 12 and closes the otherwise open front of the boat. This flexible deck portion may include a storage compartment by the provision of a pocket therein which may be closed by a conventional hookless fastener of the type conventionally known as a zipper. The flexible canvas deck is adapted to be removed if desired, and may comprise any conventional means for securing the outer free edges to the inner edges of the top sections 11 and 12. This means may comprise a conventional zipper connection.

The boat, having a relatively permanent bottom but flexible, is prevented from being damaged should the boat accidentally run aground or strike a rock or other snag because the bottom is sufficiently flexible. Moreover, the shape of the outside of the hull structure determines the stability characteristics of the boat, thereby giving greater buoyancy, and inasmuch as the bottom is relatively wide, it is practically impossible to tip the boat. Tests have shown that three persons along one edge of the boat will not tip it.

Moreover, the boat is so constructed of suitable material that it is not necessary to let the boat stand in water before use to permit swelling, as is conventional in boats used for similar purposes.

Because of the construction of the present boat it is not necessary to wait for "swelling" as the boat is ready for instant use. The construction also absorbs vibrations, and tests which have been conducted prove that the boat will skim in planar fashion over the top of the water when propelled by an outboard motor at a speed exceeding sixty miles an hour.

The side sections of the transom or rear end 33 are tapered so that the meeting edges of the rear board will be slanting. For a V bottom the inner meeting edges of the end sections of the transom will slope upwardly and outwardly from the bottom toward the top. Should a tunnel bottom construction be desired, the meeting edges will slant upwardly and inwardly from the bottom toward the top. Regardless of the type of bottom construction desired or preferred, there is always provided a bottom which has relative flexibility. The boat is extremely safe and it is impossible to collapse the boat when it is open for use, because the forward sloping end prevents collapsing, as well as the tying together of the front top deck sections 11 and 12 by the member 16 and the connecting together of the transom along its vertical dividing line. Moreover, the inflated side wall construction when the boat is filled with water, adds buoyancy to the boat and further assists in maintaining the proper balance and equilibrium.

Longitudinal strips (not shown) may be hinged to the underside of the top deck or on the boat floor to spread the sides 24 instead of the stretcher members 49 or 64. These strips may have vertical adjustment to adjust the freeboard height and may be spring operated, if desired.

Changes may be made in the form, construction and arrangement of the parts without departing from the spirit of the invention or sacrificing any of its advantages, and the right is hereby reserved to make all such changes as fairly fall within the scope of the following claims.

The invention is hereby claimed as follows:

1. A folding boat having a cockpit and a longitudinal rail on each side of the cockpit, an unattached strip on each side of the boat and engaging the top of the boat and the side rail, each strip having spaced openings therein, a hanger engageable with the openings of the strip, and a flexible seat element carried by the hangers.

2. A foldable boat comprising a bottom section having a resilient end portion adapted to lie substantially in the plane of said bottom section when the boat is in folded condition, and to be bowed upwardly therefrom, when the boat is set up for use as such, a deck section comprising a gunwale member at and extending along each side of the boat, each gunwale member having an end connected with the resilient end portion of said bottom section, at one end of the boat, foldable bracing means interconnecting the bottom section and said gunwale members at the opposite end of the boat, strips of flexible sheet material secured to the respective gunwale members and the adjacent sides of said bottom section, and extending longitudinally thereof, thereby providing boat sides, said strips being foldable lengthwise of the boat thereby permitting the gunwale members to lie closely upon the said bottom section when the boat is in collapsed condition, and spreader members interposed be-

tween the gunwale members and the bottom section for securing the gunwale members in spaced relation with respect to said bottom section, thereby flexing said resilient end portion of said bottom section and opening said side members.

3. A foldable boat comprising a bottom section having a resilient end portion adapted to lie substantially in the plane of said bottom section when the boat is in folded condition, and to be bowed upwardly therefrom, when the boat is set up for use as such, said bottom section comprising a medial panel and side panels extending longitudinally of the boat from end to end thereof, with said side panels hinged to and along the opposite side edges of the medial panel, a deck section comprising a gunwale member at and extending along each side of the boat, each gunwale member having an end connected with the resilient end portion of said bottom section, at one end of the boat, foldable bracing means interconnecting the bottom section and said gunwale members at the opposite end of the boat, strips of flexible sheet material secured to the respective gunwale members and the adjacent sides of said bottom section, and extending longitudinally thereof, thereby providing boat sides, said strips being foldable lengthwise of the boat thereby permitting the gunwale members to lie closely upon the said bottom section when the boat is in collapsed condition, and spreader members interposed between the gunwale members and the bottom section for securing the gunwale members in spaced relation with respect to said bottom section, thereby flexing said resilient end portion of said bottom section and opening said side members, when the boat is set up for use as such, and to permit said gunwale members to lie closely each upon a corresponding side panel of said bottom section, in folding the boat to collapsed position so that said side panels and gunwale members may then be folded upwardly, on said medial panel, into substantially parallel, fully collapsed relationship.

4. A foldable boat as set forth in claim 2, including spacing means disposable between said gunwale members for holding said gunwale members in spaced apart relation transversely of said boat when the same is set up for use as such, said spacing means, spreader members, and foldable bracing means being operable to release said gunwale members for collapsing movement downwardly upon said bottom section in folding the boat to collapsed position.

5. A foldable boat as set forth in claim 3, wherein said side panels have inner edges extending beyond the hinged connection thereof with said medial panel in position to project beneath the same when said side panels are in outwardly folded position to thereby underlie and cover the lower surface of said medial panel.

6. A foldable boat as set forth in claim 2, wherein said foldable bracing means comprises lower and upper panel elements respectively hinged on the ends of said bottom section and on said gunwale members, said upper and lower panel elements being hingedly interconnected at their meeting edges, whereby same may be selectively arranged in co-planar alignment, between the bottom section and said gunwale members, or may be swung to relatively folded position outwardly of the ends of said bottom section and gunwale members, and a sheet of flexible material extending between and sealed to the flexible strips forming said boat sides, and sealed also to the bottom section of the boat, inwardly

of said foldable bracing means, in position to overlie the same and to be stretched across the inwardly facing surfaces thereof when the same are arranged in co-planar alignment.

7. A foldable boat as set forth in claim 3, wherein said foldable bracing means comprises lower and upper panel elements respectively hinged on the ends of said side panels and on said gunwale members, said upper and lower panel elements being hingedly interconnected at their meeting edges, whereby same may be selectively arranged in co-planar alignment, between the side panels and said gunwale members, or swung to relatively folded position outwardly of the ends of said side panels and gunwale members, and a sheet of flexible material extending between and sealed to the flexible strips forming said boat sides, and sealed also to the bottom section of the boat, inwardly of said foldable bracing means, in position to overlie the same and to be stretched across the inwardly facing surfaces thereof when the same are arranged in co-planar alignment, said upper and lower panel elements being divided on the medial vertical plane of the boat to permit said elements, when in outwardly folded position, to be folded upwardly with said side panels of the boat bottom.

8. A foldable boat as set forth in claim 2, including additional pieces of flexible sheet material secured between said gunwale members and said bottom section, inwardly of said strips forming said boat sides, to provide buoyant chambers between said strips and pieces beneath said gunwale members.

9. A foldable boat as set forth in claim 2, including additional pieces of flexible sheet material secured between said gunwale members and said bottom section, inwardly of said strips forming said boat sides, to provide buoyant chambers between said strips and pieces beneath said gunwale members, and valve means on said gunwale members and giving access to said buoyant chambers from the circumambient atmospheres.

10. A foldable boat as set forth in claim 2, including means operable to adjust the length of said spreader members to determine the free-board spacement between the bottom and deck sections.

11. A foldable boat as set forth in claim 2, including spring means normally urging said spreader members yieldingly in a direction to spread said bottom and deck sections apart to expanded position.

12. A foldable boat as set forth in claim 2, wherein said spreader members comprise each a bar structure pivotally connected on one of said sections and foldable in substantially parallel relationship therewith, resilient means connected to the bar structure normally urging said bar structure toward extended position substantially normal to the section on which it is pivotally connected and means forming a shoulder on the other section for engaging and limiting movement of the bar structure.

13. A foldable boat as set forth in claim 2, wherein said spreader members each comprise a pair of relatively shiftable bars for adjusting the overall length thereof and means to clamp the bars together in adjusted position.

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