

Jan. 1, 1963

C. T. LEWIS
COLLAPSIBLE BOAT

3,070,816

Filed Aug. 9, 1961

2 Sheets-Sheet 1

Fig. 1.

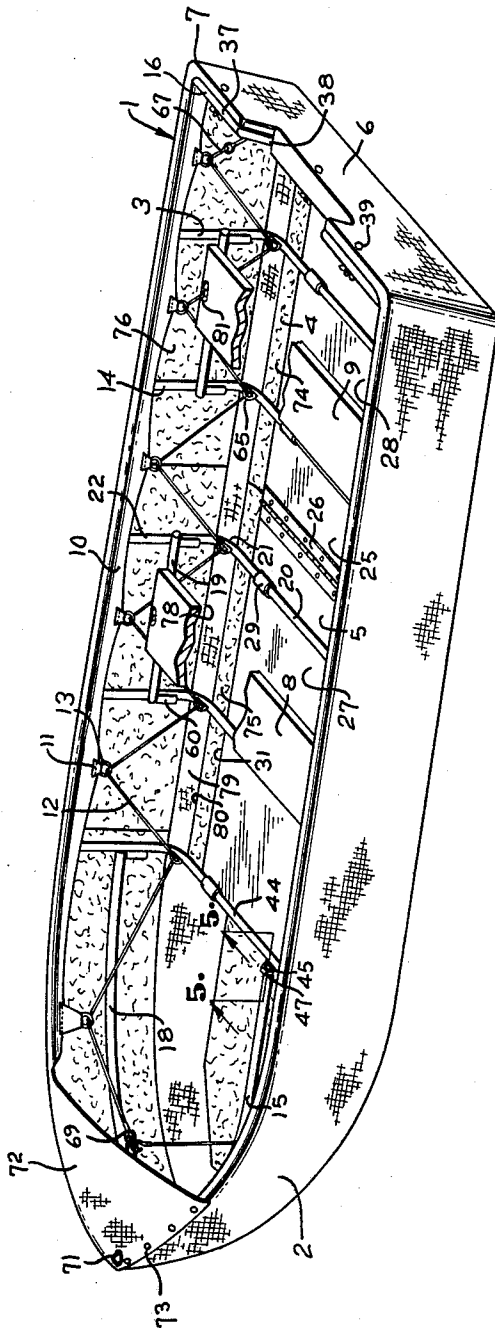
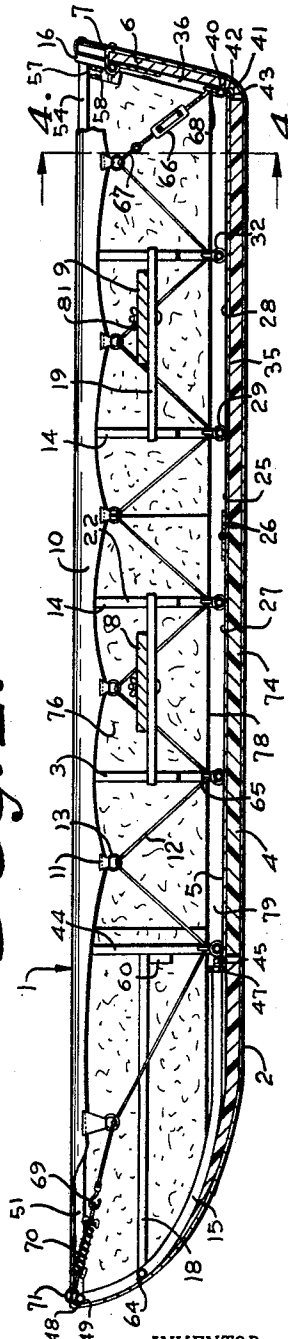


Fig. 2.



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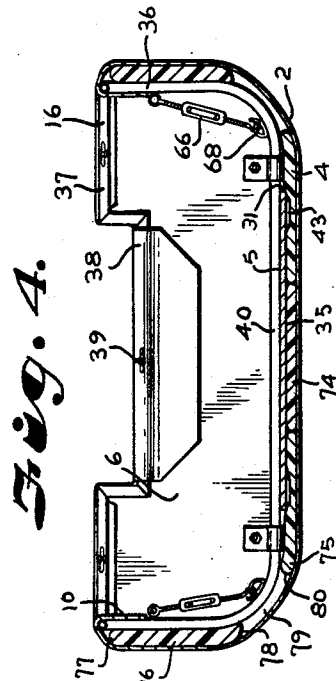
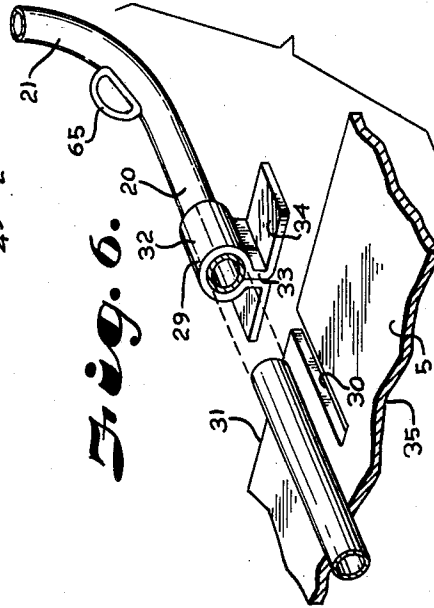
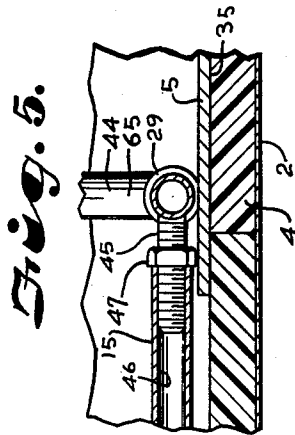
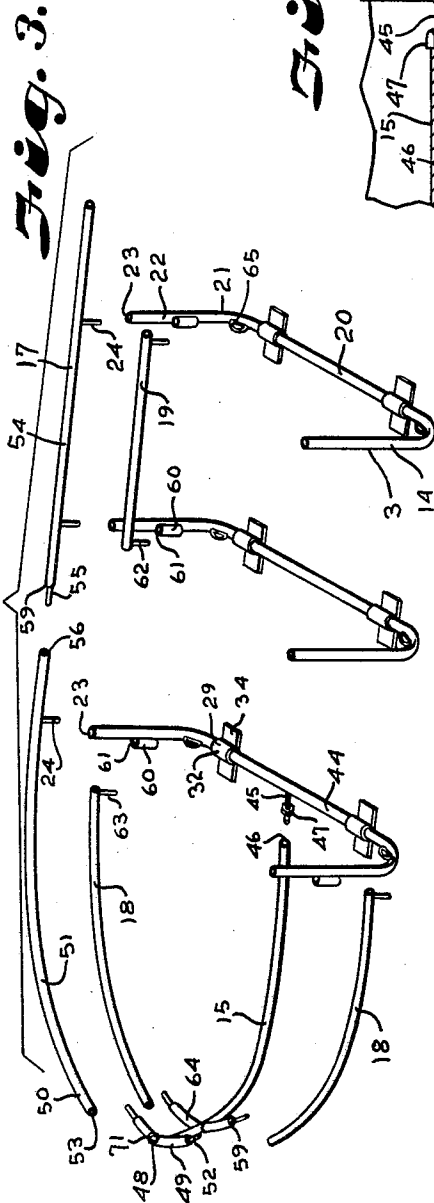
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2 Sheets-Sheet 2



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COLLAPSIBLE BOAT

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8 Claims. (Cl. 9-2)

This invention relates to collapsible boats, and more particularly to such boats that are portable and of the open type having a flexible covering or skin over a sectional frame.

The principal objects of the present invention are to provide a novel, collapsible boat having a sectional frame and floor boards with elastic plank-like members extending longitudinally exteriorly of the frame and a flexible waterproof covering or skin tensioned over the frame exteriorly of said elastic planks which, when erected, has cooperating connections whereby the parts cooperate to maintain their respective relative positions in a substantially rigid structure; to provide such a boat wherein the frame has a plurality of sections including U-shaped transverse rib members separably connected to the floor board with slidable connectors maintained in place by forces resulting from the tension of the skin or covering; to provide such a boat structure wherein the elastic planking is held in place between the skin and frame only by friction and compressive force applied by the skin tension; to provide a substantially keelless boat wherein the elastic planks are arranged to provide a substantially continuous surface for engagement by the skin except at the sides of the bottom whereby water pressure inwardly on the skin will deform same inwardly only at said sides of the bottom to provide for stability to the substantially keelless boat; to provide such a boat wherein the elastic planks are of resilient foam synthetic resin having unicellular structure to provide buoyancy and a yielding support for the tensioned skin; to provide such a boat that can be erected and disassembled without tools and when disassembled and collapsed occupies a comparatively small space; and to provide such a structure that is economically manufactured, easily transported and assembled into substantially rigid, sturdy, seaworthy boat.

Other objects and advantages of this invention will become apparent from the following description taken in connection with the accompanying drawings wherein are set forth by way of illustration and example certain embodiments of this invention.

FIG. 1 is a perspective view of a boat embodying the features of the present invention, with portions broken away to illustrate details of the structure thereof.

FIG. 2 is a longitudinal sectional view through the boat in erected position.

FIG. 3 is a fragmentary perspective view of portions of the framework including prow and rib sections in disassembled relation.

FIG. 4 is a transverse sectional view through the boat on the line 4-4, FIG. 2.

FIG. 5 is an enlarged detail sectional view through the frame expansion connection taken on the line 5-5, FIG. 1.

FIG. 6 is a fragmentary perspective view of a rib and floor board and connector therefor in disassembled relation.

Referring more in detail to the drawings:

The numeral 1 generally designates a collapsible substantially keelless boat which, in the illustrated structure, is in the form of an open type boat adapted to be propelled by oars or outboard motor; however, the structure is adaptable for various sizes and also partially enclosed or top covered boat structures. In the illustrated structure, the boat 1 includes a cover or skin 2 of flexible

waterproof material removably mounted on a sectional frame 3 and placed under tension whereby said skin tightly engages elastic plank-like members 4 lying in areas between the skin and frame members. The boat has a floor 5, a transom 6 at the stern 7 carried by said framework. The boat also has a plurality of spaced seats and, in illustrated structure, has seats 8 and 9.

The skin or covering 2 is preferably of suitable waterproof flexible fabric as, for example, a closely woven nylon fabric covered with a flexible waterproof coating such as Neoprene to provide a strong, durable skin that is resistant to abrading action and having long life even with rough handling. The skin or covering is shaped to conform substantially to the exterior contour of the boat bottom and sides, prow and stern, as a continuous skin with the marginal portions 10 defining the opening at the top of the skin and being adapted to extend over the upper portion of the framework and having spaced tabs or tongues 11 secured to said marginal portions for receiving a tensioning member 12 as later described. In the illustrated structure, the tabs 11 have rings or hooks 13 secured thereto and an elongate flexible cord of strand forms the tensioning member and extends through said rings 13, as later described.

The sectional framework 3 includes a series of U-shaped ribs 14, a curved prow member 15, a stern frame 16, a gunwale 17, forward side rail members 18, and seat support members 19, each preferably being of lightweight, tubular metal. The rib members 14 may vary in size to provide the desired transverse shape to the boat, and are preferably U-shaped with each having a cross bar portion 20 having upwardly curved ends 21 terminating in upstanding portions or legs 22 having openings 23 in the upper ends thereof forming sockets for receiving shanks or pins 24 on the gunwale 17, as later described.

The floor 5 cooperates with the ribs to retain the lower portions or cross bars thereof spaced one from the other, said floor preferably being sectional with adjacent transverse edge portions 25 connected by a suitable hinge member 26 adapted to extend transversely of the boat and arranged whereby the floor may be folded to position the forward section 27 in overlying relation to the rearward section 28 when in folded position, the hinge being such whereby the adjacent edge portions 25 abut when the floor sections are coplanar whereby the relative hinging movement of the floor sections is limited to upward swinging movement of one relative to the other when positioned horizontally. The floor sections are removably connected to the ribs 14 by connectors 29 which are preferably slidably mounted on the lower portion or bar 20 of the respective ribs. The floor sections have slots 30 extending inwardly from side edges 31 thereof, said slots underlying the respective ribs and adapted to receive the connectors 29. The connectors 29 in the illustrated structure have substantially cylindrical portions 32 sleeved on the bar portion 20 of the ribs with a depending leg 33 terminating in outwardly oppositely directed flanges or feet 34, said leg 32 being of a width and height to be slidably inserted in the respective slot 30 with the upper surfaces of the feet engaging the lower surface 35 of the floor adjacent the slot forwardly and rearwardly thereof. The connectors 29, in the illustrated structure, are each formed of a single piece of metal with a central portion formed to provide the cylindrical portion 32 and then bent downwardly to form contacting portions defining the leg 33 and then outwardly to define the feet 34.

The stern frame 16 is formed of tubular metal members arranged in a U-shaped substantially the same as the ribs 14 with the upper ends of the legs or upstanding portions 36 connected by a transverse bar 37 having a central downwardly offset portion 38 to conform substan-

tially to the shape of the supper portion of the transom 6, said transom being secured to the stern frame by suitable fastening devices such as screws or the like 39. The lower portion of the stern frame has a transverse bar 40 with a forwardly extending floor support 41 secured thereto. The floor support preferably has a vertical leg 42 secured to the bar 40 in depending relation with a forwardly extending lower flange 43 to engage under the rear edge of the floor rear section to support same.

The forward transverse rib 44 has a forwardly extending threaded shank 45 at the center of the transverse or cross bar with said threaded shank adapted to be slidably received in a bore 46 at the rear of the prow member 15, an adjusting member such as a nut 47 being threaded on the shank 45 and adapted to engage the rear edge of the prow member 15 to form an adjusting jack and an extensible connection between the forward rib 44 and the prow member 15. The prow member 15 curves forwardly and upwardly and, at its upper end 48, has rearwardly diverging portions 49 adapted for slip connection with forward ends 50 of forward gunwale sections 51. In the structure illustrated, the portions 49 terminate in pins 52 extending axially therefrom which are slidably received in the forward ends of bores or sockets 53 of the gunwale sections 51.

The gunwale sections 51 and rearward sections 54 curve outwardly and rearwardly and are adapted to be positioned in overlying relation to the upstanding legs 22 of the rib sections, the gunwale sections 51 and 54 having depending pins 24 adapted for slidable reception into the openings or sockets 23 at the upper ends of the legs of said rib sections forming the slip connections between the gunwale sections and the rib sections. The gunwales are preferably formed in sections 54 with slip connections therebetween whereby in adjacent ends of aligned sections one end has a pin portion 55 extending therefrom and adapted to be moved into and fit in the bore socket 56 of the other of said adjacent ends of the gunwale sections. The rearmost of the gunwale sections has a depending pin 57 adapted to be inserted into a socket member 58 secured to the forward portion of the stern frame 16 at the ends of the transverse bar 37. The gunwale sections 51 and 54 are each connected to adjacent sections by such slip joints and there are depending pins 24 on the gunwale sections that extend into the upper ends of each of the transverse rib sections 14 and 44 to position the gunwale sections and rib sections and retain the upper portions thereof in related position when erected. In each of the slip joints the pin portions that extend into the bores or sockets define a shoulder 59 adjacent the fixed end of the pin which shoulder will engage the end of the member surrounding the opening to the socket or bore adapted to receive said respective pin, thereby forming a stop with the adjacent ends of the sections abutted.

The side portions of the ribs 14 and forward rib 44 each have socket members 60 secured thereto in downwardly spaced relation relative to the upper ends thereof, said portions 60 being upwardly spaced from the cross bar of the respective ribs. The socket members 60 each have upwardly opening bores or sockets 61 whereby the sockets of the socket members 60 on the selected ribs 14 receive depending pins 62 on the seat supports 19, and the sockets of the socket members 60 on the rib 44 are adapted to receive depending pins 63 on the rear ends of the side rail members 18. The side rail members 18 are curved forwardly and inwardly from the forward rib section 44 and have slip joint connections with rearwardly diverging members 64 on the prow section 15 and spaced downwardly thereon from the portions 49 the connections of the forward ends of the section 18 with the portions 64 being substantially in the same manner as the connections of the forward ends of the gunwale sections with the portions 49.

The skin 2 is made up and shaped to conform to the shape and size of the outside of the boat when erected

whereby the skin is substantially one piece with the upper edge or marginal portion 10 adapted to extend over the gunwale transom 6 and stern frame 16. It is preferable that the skin be tensioned over the form of the boat by an elongate flexible member or cord 12 laced between the hooks or rings 13 and eyes or hooks 65 secured on the ribs 14 and 44 adjacent the ends of the respective cross bars thereof, as illustrated in FIGS. 1 and 3. At the stern of the boat, the skin is held to the transom and stern frame by suitable fastening devices as, for example, the screws 39. Tensioning devices such as turnbuckles 66 extend from the rearward end 67 of the cord or strand 12 to the eye 68 on the stern frame. Also, spring tension is applied to the cord or strand at the forward ends wherein said strands are connected by suitable fastening devices such as hooks 69 to a two-way spring tightener 70 which has its other end secured to an eye 71 on the upper end of the prow member 15. In the illustrated structure, a cover 72 is secured over the opening at the forward end of the boat, said cover being secured to the skin at the gunwale by suitable devices such as snap fasteners 73. The cover extends over the spring tightener 70 to substantially conceal same and enhance the appearance; however, the cover member 72 may be omitted if desired.

A plurality of yieldable or elastic plank-like members 4 are interposed between the frame floor and skin, as illustrated in FIGS. 1, 2 and 4. It is preferable that the plank-like members 4 be of low density lightweight material and have high buoyancy and that such members form bottom plank members 74 extending longitudinally of the boat in side by side relation at the bottom under the floor 5 and also forwardly under the prow member 15, it being preferable that the bottom plank members 74 have a combined width to extend laterally outwardly beyond the side edges 31 of the floor to the upwardly curved portion of the ribs as at 75. Side plank members 76 extend longitudinally of the boat in interposed relation between the upstanding portions 22 of the rib members 14 and 44 and the sides of the skin 2, said side plank members 76 preferably extending from the transom 6 to the forward end of the prow member with the upper edges 77 adjacent the gunwale and the lower edges 78 adjacent the upper portion of the curved connection between the cross bars and the upright portions 22 of the ribs as illustrated in FIG. 4 whereby said lower edges 78 of the side planks 76 are spaced as at 79 from the side edges 80 of the outermost bottom plank members. The plank members are preferably formed of a unicellular synthetic resin wherein the cells are separate or discrete with the synthetic resin having a resiliency as, for example, a cellular polyethylene, polyvinylchloride or other cellular or foam synthetic resin or elastic material such as rubber and the like. It is preferable that the planks of cellular synthetic resin each be in the nature of 10 inches wide and 2½ inches thick in static condition to provide buoyancy, cushioning and resiliency. With the cellular plank-like members 74 and 76 between the skin 2 and frame and floor of the boat, tensioning of the skin will compress the plank-like members between the skin and the frame or floor whereby the resiliency of the plank members tends to maintain the skin under tension. When assembled, the plank-like members are compressed against the floor, causing the feet 34 of the fasteners 29 to be depressed into the plank members 74 to securely hold the fasteners against lateral movement thereby maintaining them in position to hold the floor to the ribs. The spacing of the plank-like members at the lower sides of the boat allows external water pressure to cause the skin to be curved inwardly, forming concaved or downwardly and outwardly opening troughs which contribute to the stability of the boat, particularly on turns.

The seats 8 and 9 are preferably removably mounted by fastening devices 31 to the seat supports 19, and said seats may be moved or taken out as desired.

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In assembling a boat constructed as described, the nut 47 is threaded toward the cross bar of the rib 44. The skin 2 is then unfolded and laid out preferably on a flat surface. The bottom cellular planks 74 are then placed on the inner surface of the skin extending longitudinally thereof, and then the floor sections 27 and 28 are unfolded and placed on the bottom plank members. The U-shaped ribs 14 and 44 with the connectors 29 sleeved on the cross bars 20 thereof are placed on the floor in alignment with the slots 30, and the connectors 29 positioned beyond the lateral sides of the floor. The floor is then slightly raised and the connectors inserted into the slots 30 to secure the rib members to the floor. Then the prow member has the bore 46 at the rear thereof sleeved over the shank 45 and then the side rails 18 are assembled by the slip connections 64 and inserting the depending pins 63 into the socket 61 on the rib 44. The gunwale sections 51 are then connected to the prow portions and the depending portions of the pins 24 inserted into the openings 23 in the upstanding portions of the rib 44, and the other gunwale sections 54 are then assembled by inserting the pins 55 into the sockets 56 and the depending pins 24 into the openings 23 with the rearmost gunwale section connected by the slip joint to the stern frame. The seat supports 19 are then applied to the selected ribs by inserting the pins 62 into the sockets 61. The support 41 engages the rear of the floor 5 and said floor cooperates with the ribs in positioning same, and further cooperates with the prow member 15 to form a rigid beam-like structure from stern to the forward end of the boat. The skin is then pulled upwardly along the sides of the boat and also upwardly along the transom 6, and the upper marginal portion 10 secured to the transom by the fastening devices 39. The strands 12 are then connected by the turnbuckles 66 to the rear eyes 63 and extended through the rings 13 and eyes 65 in alternate relation to provide a lacing tending to pull the marginal portion of the skin over the gunwales and the forward ends of said strands are connected to the spring tightener 70. The nut 47 is rotated on the threaded shank 45 to provide some elongation of the frame to facilitate the fit of the skin. Then the turnbuckles 66 are actuated to apply tension to the strand, tensioning the spring tightener 70 until the skin is stretched taut over the outside of the boat, tending to compress the cellular planks 74 and 75 against the frame and floor and particularly applying a compression that tends to indent the feet 34 into the planks under the floor to hold the fastening devices 29 in place, thereby assuring cooperation between the floor and the gunwales to hold the ribs in position. The cover 72 is then applied by securing same in place with the fastening devices 73 and the seats 8 and 9 are then secured to the seat supports 19 in desired position. The spring tightener 70 keeps tension applied to the skin and frame at all times, and the adjustment is made at the back at both sides by the turnbuckles 66. This provides a strong, sturdy, lightweight boat wherein the parts all cooperate to maintain the connections in proper relationship.

When the boat is assembled as described, it is ready to be placed in the water and can be used as a rowboat or as a motor boat wherein an outboard motor may be secured in the usual manner to the transom. While the boat is substantially keelless, it has good stability and at high speeds and turns pressure of the water at the sides of the boat towards the boat tends to deform the skin in the area of the spacing 79 between the planks and the concavity of the trough formed by such deformation provides resistance against side slippage. Also, when the use of the boat is completed, it may be quickly and easily disassembled and arranged in a relatively small package for transportation.

It is to be understood that while I have illustrated and described one form of my invention, it is not to be limited to the specific form or arrangement of parts herein

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described and shown except insofar as such limitations are included in the claims.

What I claim and desire to secure by Letters Patent is:

1. A collapsible boat including, a framework having a plurality of spaced U-shaped rib members and a stern frame connected at upper side portions by a gunwale, a prow member connected to the gunwale at the forward end of the boat and extending downwardly and rearwardly therefrom, means connecting the prow member to the forwardmost U-shaped rib member, each of said U-shaped rib members having cross bars at the bottom portions thereof, a rigid floor member underlying said rib cross bars, fasteners on the cross bars of the ribs and engaging the under surface of the flooring to removably secure the ribs and flooring together, a flexible waterproof skin shaped to fit around the framework and having an upper margin turned inwardly over the gunwale and stern frame, a plurality of resilient planks of unicellular material extending longitudinally of the boat between the flooring and the skin for maintaining said skin in spaced relation to said flooring, and fastening means connecting the upper margins of the skin and the framework for tensioning the skin on the framework compressing the resilient planks into engagement with the floor to hold same in place.

2. A collapsible boat including, a framework having a plurality of spaced U-shaped rib members and a stern frame connected at upper side portions by a gunwale, a prow member connected to the gunwale at the forward end of the boat and extending downwardly and rearwardly therefrom, means connecting the prow member to the forwardmost U-shaped rib member, each of said U-shaped rib members having cross bars at the bottom portions thereof, a rigid floor member underlying said rib cross bars and having slots extending inwardly from side edges in the flooring in alignment with the respective cross bars, fasteners on the cross bars of the ribs having portions extending through said slots and engaging the under surface of the flooring to removably secure the ribs and flooring together, a flexible waterproof skin shaped to fit around the framework and having an upper margin turned inwardly over the gunwale and stern frame, a plurality of resilient planks of unicellular material extending longitudinally of the boat between the flooring and the skin for maintaining said skin in spaced relation to said flooring, resilient planks of unicellular material extending longitudinally of the boat between the skin and the rib members for maintaining said skin in spaced relation to said rib members at the sides of the boat, and means connecting the upper margins of the skin and the framework for tensioning the skin on the framework compressing the resilient planks into engagement with the floor fastening means to hold same in engagement with said flooring.

3. A collapsible boat including, a framework having a plurality of spaced U-shaped rib members and a stern frame connected at upper side portions by a gunwale, a prow member connected to the gunwale at the forward end of the boat and extending downwardly and rearwardly therefrom, means adjustably connecting the prow member to the forwardmost U-shaped rib member, each of said U-shaped rib members having cross bars at the bottom portions thereof, a rigid floor member underlying said rib cross bars and having slots extending inwardly from side edges of the flooring in alignment with the respective cross bars, fasteners slidable on the cross bars of the ribs having portions extending through said slots and engaging the under surface of the flooring to removably secure the ribs and flooring together, a flexible waterproof skin shaped to fit around the framework and having an upper margin turned inwardly over the gunwale and stern frame, a plurality of resilient planks of unicellular material extending longitudinally of the boat between the flooring and the skin, resilient planks of unicellular material extending longitudinally of the boat between the skin and the rib members at the sides of the boat, and elongate

fastening means laced between the upper margins of the skin and the framework for tensioning the skin on the framework compressing the resilient planks into engagement with the floor fastening means to hold same in engagement with said flooring.

4. A collapsible boat including, a framework having a plurality of spaced U-shaped rib members and a stern frame connected at upper side portions by a gunwale, a prow member connected to the gunwale at the forward end of the boat and extending downwardly and rearwardly therefrom, means adjustably connecting the prow member to the forwardmost U-shaped rib member, each of said U-shaped rib members having cross bars at the bottom portions thereof, a rigid floor member underlying said rib cross bars and having slots extending inwardly from side edges of the flooring in alignment with the respective cross bars, fasteners slidable on the cross bars of the ribs having portions extending through said slots and engaging the under surface of the flooring to removably secure the ribs and flooring together, a flexible waterproof skin shaped to fit around the framework and having an upper margin turned inwardly over the gunwale and stern frame, a plurality of resilient planks of unicellular material extending longitudinally of the boat between the flooring and the skin, resilient planks of unicellular material extending longitudinally of the boat between the skin and the rib members at the sides of the boat, elongate fastening means laced between the upper margins of the skin and the framework for tensioning the skin on the framework compressing the resilient planks into engagement with the floor fastening means to hold same in engagement with said flooring, resilient means connecting the elongate fastening means and the framework to maintain said elongate means and the skin under tension.

5. A collapsible boat including, a framework and a flexible waterproof skin, said framework comprising a plurality of tubular U-shaped rib members of a size to determine the transverse shape of the boat, said rib members each having a bottom cross bar and upstanding side portions, a stern frame, a prow member defining the forward end of the framework and extending downwardly and rearwardly therefrom, a sectional gunwale connecting the stern frame and the forward end of the prow member, means adjustably connecting the prow member with the forwardmost rib section cross bar, a rigid floor member underlying the cross bars of the U-shaped rib members, said floor having substantial width with side edges adjacent the upstanding portion of the ribs, said floor having slots extending therethrough adjacent the sides thereof and in alignment with the respective U-shaped rib member cross bars, connector members on the rib member cross bars and having portions extending through the slots in the flooring and engaging the flooring under surface adjacent said slots to secure the flooring to the ribs and retain said ribs in spaced relation, said skin having a fabric body adapted to fit around the framework in covering relation thereto, resilient planks of unicellular material extending longitudinally of the boat between the floor and the skin, and means having engagement with the skin and the ribs and prow and stern frame to apply tension to the skin to compress the resilient planks between the skin and the ribs and the floor and in engagement with the floor connector members to hold same in position.

6. A collapsible boat including, a framework and a flexible waterproof skin, said framework comprising a plurality of tubular U-shaped rib members of a size to determine the transverse shape of the boat, said rib members each having a bottom cross bar and upstanding side portions, a stern frame, a prow member defining the forward end of the framework and extending downwardly and rearwardly therefrom, a sectional gunwale connecting the stern frame and the forward end of the prow member, means adjustably connecting the prow member with the forwardmost rib section cross bar, a rigid floor member underlying the cross bars of the U-shaped rib members,

said floor having substantial width with side edges adjacent the upstanding portion of the ribs, said floor having slots extending inwardly from the sides thereof in alignment with the respective U-shaped rib member cross bars, connector members slidable on the rib member cross bars and having portions extending through the slots in the flooring and engaging the flooring under surface adjacent said slots to secure the flooring to the ribs and retain said ribs in spaced relation, pins and sockets on the gunwale sections and U-shaped ribs for connecting one to another, said skin having a fabric body adapted to fit around the framework in covering relation thereto, resilient planks of unicellular material extending longitudinally of the boat between the floor and the skin, and tensioning means having engagement with the skin and the ribs and prow and stern frame to apply tension to the skin to compress the resilient planks between the skin and the ribs and the floor and in engagement with the floor connector members to hold same in position.

7. A collapsible boat including, a framework and a flexible waterproof skin, said framework comprising a plurality of tubular U-shaped rib members of a size to determine the transverse shape of the boat, said rib members each having a bottom cross bar and upstanding side portions, a stern frame, a transom secured to said stern frame, a prow member defining the forward end of the framework and extending downwardly and rearwardly therefrom, a sectional gunwale connecting the stern frame and the forward end of the prow member, means adjustably connecting the prow member with the forwardmost rib section cross bar, a rigid floor member underlying the cross bars of the U-shaped rib members, support means on the stern frame engaging said floor at the rear thereof, said floor having substantial width with side edges adjacent the upstanding portion of the ribs, said floor having slots extending inwardly from the sides thereof in alignment with the respective U-shaped rib member cross bars, connector members slidable on the rib member cross bars and having portions extending through the slots in the flooring and engaging the flooring under surface adjacent said slots to secure the flooring to the ribs and retain said ribs in spaced relation, pins and sockets on the gunwale sections and U-shaped ribs for connecting one to the other, said skin having a fabric body adapted to fit around the framework in covering relation thereto, resilient planks of unicellular material extending longitudinally of the boat between the floor and the skin, resilient planks extending longitudinally of the boat between the skin and upstanding portions of the ribs, and tensioning means having engagement with the skin and the ribs and prow and stern frame to apply tension to the skin to compress the resilient planks between the skin and the ribs and the floor and in engagement with the floor connector means to hold same in position.

8. A collapsible boat including, a framework and a flexible waterproof skin, said framework comprising a plurality of tubular U-shaped rib members of a size to determine the transverse shape of the boat, said rib members each having a bottom cross bar and upstanding side portions, a stern frame, a transom secured to said stern frame, a prow member defining the forward end of the framework and extending downwardly and rearwardly therefrom, a sectional gunwale connecting the stern frame and the forward end of the prow member, means adjustably connecting the prow member with the forwardmost rib section cross bar, a rigid floor member underlying the cross bars of the U-shaped rib members, support means on the stern frame engaging said floor at the rear thereof, said floor having substantial width with side edges adjacent the upstanding portion of the ribs, said floor having slots extending inwardly from the sides thereof in alignment with the respective U-shaped rib member cross bars, connector members slidable on the rib member cross bars and having portions extending through the slots in the flooring and engaging the flooring under surface adjacent said slots

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to secure the flooring to the ribs and retain said ribs in spaced relation, pins and sockets on the gunwale sections and U-shaped ribs for connecting one to the other, said skin having a fabric body adapted to fit around the framework in covering relation thereto, resilient planks of unicellular material extending longitudinally of the boat between the floor and the skin, resilient planks extending longitudinally of the boat between the skin and upstanding portions of the ribs, tensioning means having engagement with the skin and the ribs and prow and stern frame to apply tension to the skin to compress the resilient planks between the skin and the ribs and the floor and in engage-

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ment with the floor connector members to hold same in position, resilient means engaging said tensioning means to maintain the skin taut, and spaced seat members removably engaging the selected ribs.

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