Sept. 12, 1961 A. S. LEWIS 2,999,253

CONVERTIBLE CANOE AND KAYAK

Filed Aug. 25, 1958 3 Sheets-Sheet 1

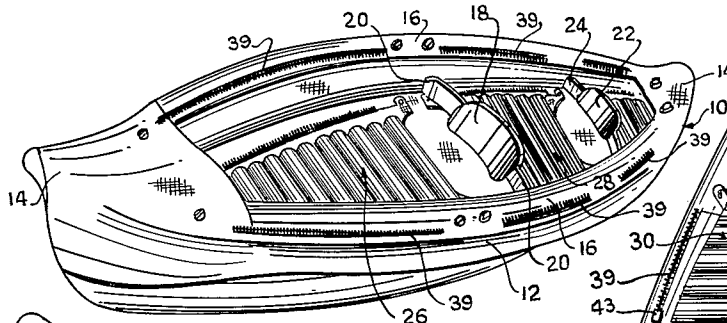


Fig. 1.

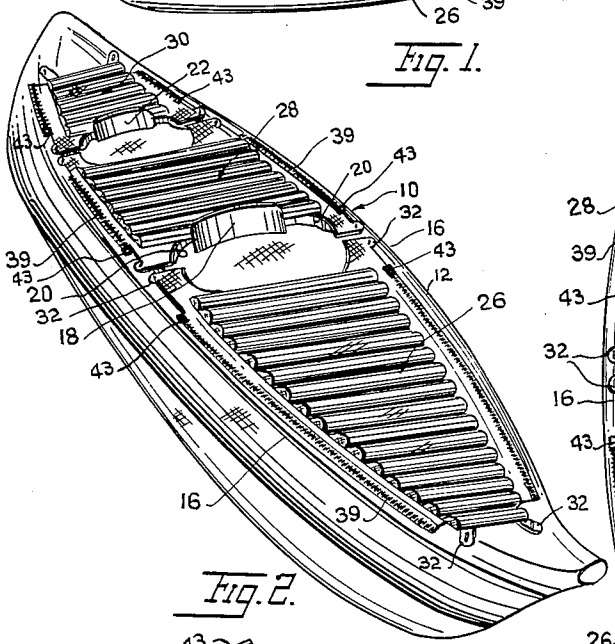


Fig. 2.

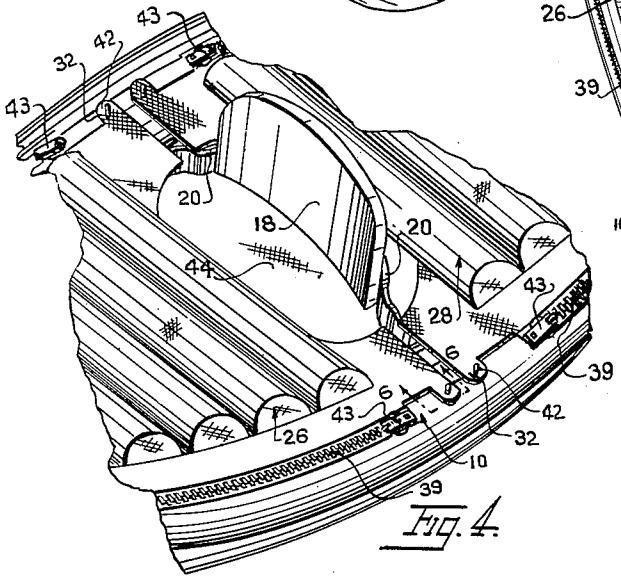


Fig. 4.

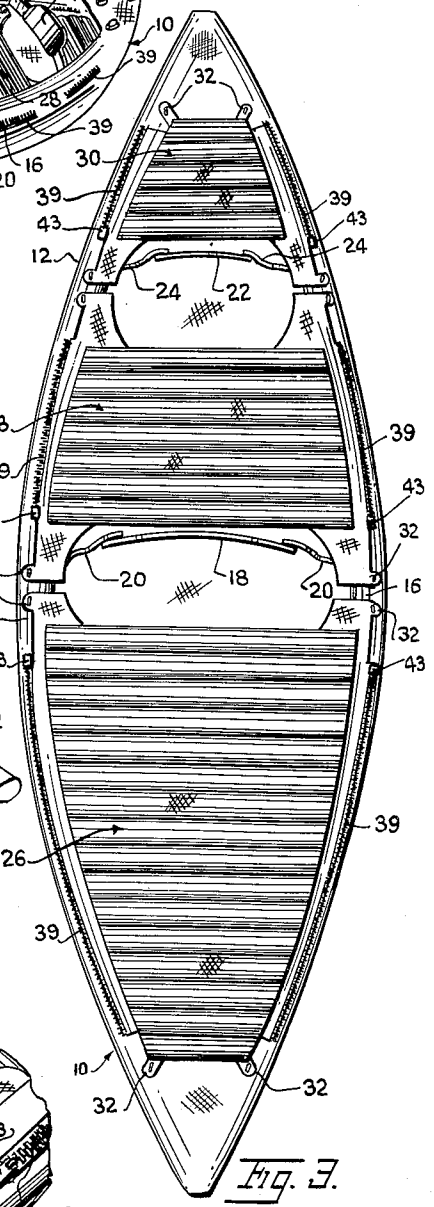


Fig. 3.

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CONVERTIBLE CANOE AND KAYAK

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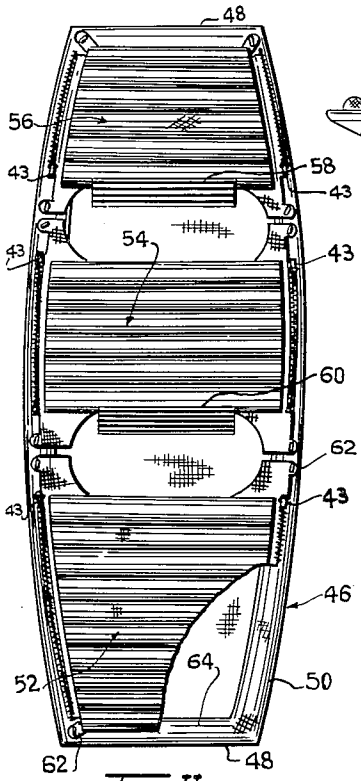



Fig. 11.

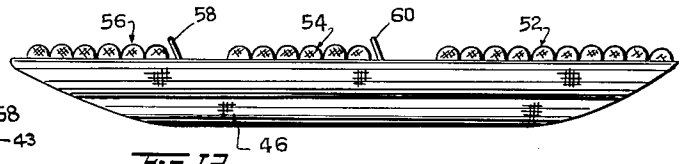



Fig. 12

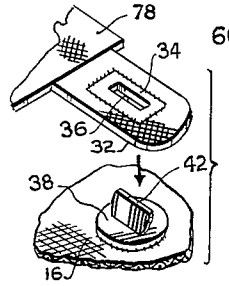



Fig. 5.

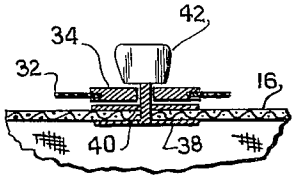



Fig. 6.

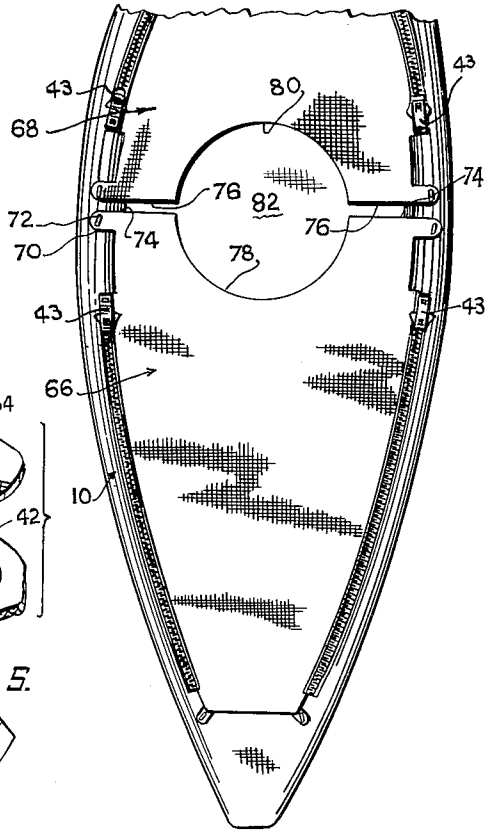



Fig. 14.

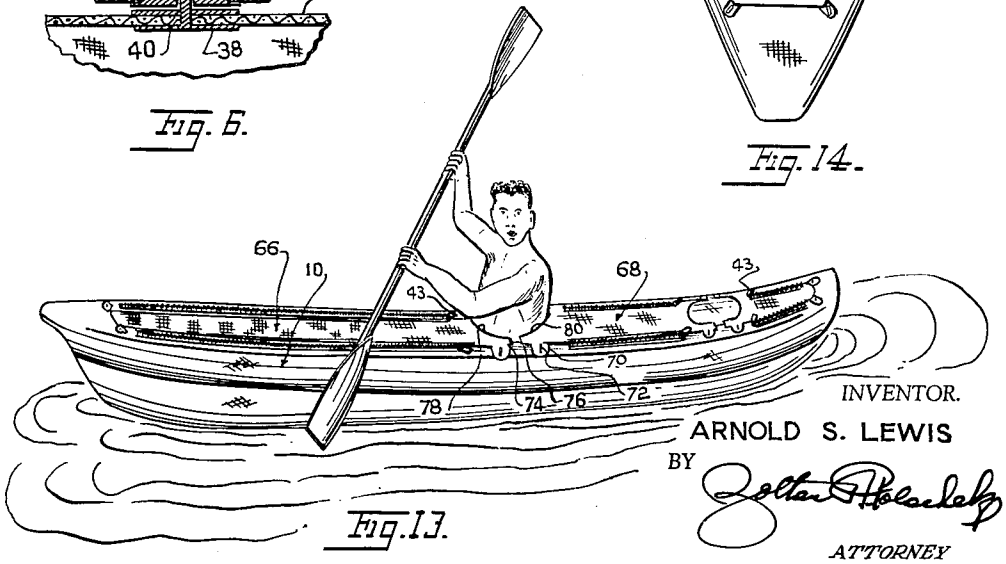



Fig. 13.

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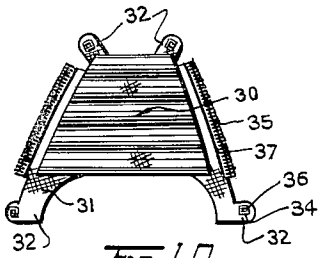



Fig. 10

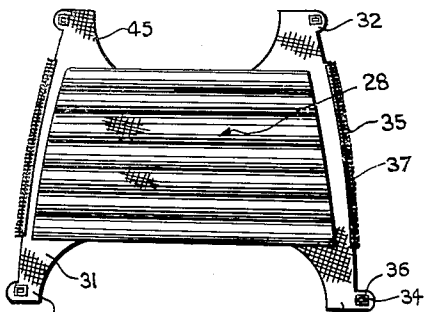



Fig. 9.

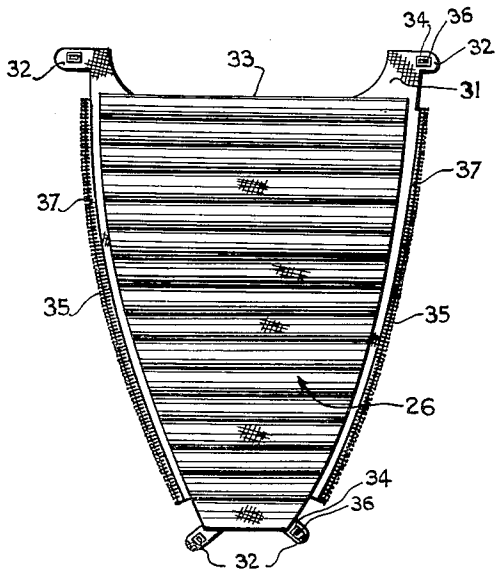



Fig. 8.

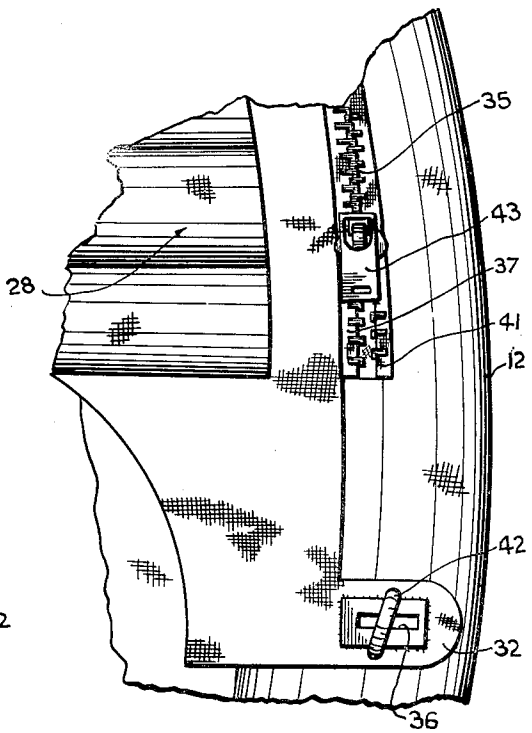



Fig. 7.

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2,999,253

# CONVERTIBLE CANOE AND KAYAK

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1 Claim. (Cl. 9—2)

This invention relates generally to watercraft. More particularly, the invention has reference to a boat which is of the collapsible type, the invention being designed to permit conversion of said boat into a kayak or similar craft.

A kayak is a light boat, as is well known, having an enclosed deck formed with an opening in which the rower is snugly fitted, with only the upper portion of the rower's body projecting through said opening. The lower portion of the body is disposed below the deck, within a cockpit defined between the deck and the bottom of the boat.

Such a boat is very seaworthy, in that water cannot splash into the same. In effect, when the rower is seated in the boat, the craft almost becomes a closed, hollow shell, since the only opening in the deck is substantially completely enclosed by the body of the rower.

Collapsible or inflatable boats have become increasingly popular and are made in many shapes and sizes. For example, inflatable canoes are provided, having pointed ends. Then again, there are inflatable row boats, and inflatable skiffs of the scow type, having squarely cut or blunt ends. The last-named boats are often used in duck hunting and in similar situations in which the water may be quite shallow and perhaps choked with weeds.

The main object of the present invention is to permit conversion of any of the collapsible, inflatable light boats described above, or any other types of generally related watercraft, from the ordinary use of the boat, into an enclosed boat of the kayak type. The word "kayak" as employed in this application, is used in the broad sense. In other words, the word is intended to refer to any type of small craft in which there is a top deck extending between the tops of the sides of the craft, said deck substantially completely closing the craft against the admission of water.

Another object is to permit the conversion to be effected by means of cover panels which themselves are flexible or collapsible. In this way, the seaworthiness of the vessel is increased measurably, since not only is the craft itself, that is, the hull, inflatable, but also, the decking or cover panels are also inflatable. This adds to the buoyancy of the watercraft.

Another object is to facilitate the attachment or detachment of the cover panels through the provision of cooperating fastening elements on the inflatable hull and cover panels, which elements are readily connectable or separable without the use of tools.

Another object is to provide, in at least one form of the invention, a means for converting a watercraft of the type described into a kayak, which means will ordinarily be usable as the bottom cushions of the watercraft, when not in use as the cover panels or decking.

Another object is to provide a convertible boat construction as stated which, when not in use as a kayak, will be available for regular use in the ordinary manner as a canoe, scow, or row boat, according to the type of watercraft.

Still another object is to provide a convertible watercraft as described that will be designed for manufacture at a very low cost, the cost of the inflatable cover panels being so small as to be comparatively immaterial, considering the wide range of possible uses of the device.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and



to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

FIG. 1 is a perspective view of a boat of the inflatable type, as it appears before conversion into a kayak, the illustrated boat being a canoe.

FIG. 2 is a perspective view of the inflatable canoe shown in FIG. 1, converted into a kayak.

FIG. 3 is an enlarged, top plan view of the inflatable canoe converted into a kayak.

FIG. 4 is a still further enlarged, fragmentary perspective view of the intermediate portion of the inflatable canoe converted into a kayak.

FIG. 5 is a still further enlarged, exploded, fragmentary perspective view of the fastening elements on the hull and cover panel, respectively.

FIG. 6 is a detail sectional view, the scale being enlarged above that of FIG. 4, taken substantially on line 6—6 of FIG. 4.

FIG. 7 is a fragmentary detail top plan view showing the means for fastening the cushions to the hull.

FIG. 8 is a top plan view of the front cushion.

FIG. 9 is a top plan view of the intermediate cushion.

FIG. 10 is a top plan view of the rear cushion.

FIG. 11 is a top plan view of a boat of the scow type, converted into a covered, kayak type of craft, a portion of one of the cover panels being broken away.

FIG. 12 is a side elevational view of the inflatable, converted scow shown in FIG. 11.

FIG. 13 is a perspective view showing an inflatable canoe converted into use as a kayak, illustrating a non-inflatable, flexible type of cover panel.

FIG. 14 is an enlarged, fragmentary top plan view of the converted canoe shown in FIG. 13, illustrating the modified cover panel.

Referring to the drawings in detail, in FIGS. 1–10 there is shown a conventional, inflatable canoe generally designated **10**. The basic construction of the canoe is completely conventional, and therefore, the detailed construction of the canoe proper need not be dwelled upon at length. It is believed sufficient to note that the inflatable canoe comprises a hull **12**, which may be formed entirely of any suitable waterproof, flexible material, such as a waterproof canvas, rubber, etc. The hull would, of course, be equipped with an inflating valve, etc., not shown. The hull has the usual pointed ends **14** and side walls **16**.

Further, as is completely conventional, there is provided a seat **18**, intermediate the ends, which may be slightly curved and can comprise a molded piece of plywood or the like. The seat back **18** is connected by flexible straps **20** to the respective sides **16**. A back seat **22** is formed similarly to the seat **18**, but may be slightly smaller due to its being located in a narrow portion of the craft. Seat **22** is connected by flexible straps **24** to the respective side walls **16**.

It is common practice to provide floor or bottom cushions in a canoe of the type shown. These are also inflatable and thus are completely flexible and collapsible when not in use. There is provided a front cushion generally designated **26**, an intermediate cushion **28**, and a rear cushion **30**. The cushions are removable and are spaced longitudinally of the vessel, and are provided with sides that follow the general curvature of the particular portions of the side walls **16** that border the cushions.

The bottom cushions are now only disposed directly in the bottom of the boat as shown in FIG. 1. Therefore, when the craft is in use as a conventional canoe as in FIG. 1, the rowers are seated directly in the bottom of the boat and are supported at least in part upon the cushions **26, 28**. The cushions are thus disposed under the legs and the

lower part of the body of the rowers in the circumstances.

It is thus seen that the craft shown in FIG. 1 can be used as a conventional canoe.

If, however, it is desired to convert the canoe **10** into a double kayak, that is, a two-seated kayak, the cushions **26, 28, 30** are lifted up off of the bottom or floor and are connected along their opposite side edges to the top surfaces of the side walls **16** in the manner shown in FIGS. 2–6. In this connection, the rear end of the front cushion **26** is formed with an inflated fabric extension **31** extending over the horizontal portion of seat **18**, the end edge of the extension being curved as indicated at **33** to provide clearance for the body of the rower on the seat. Fabric tapes **35** are secured along the long edges of the cushion **26** in any suitable manner and supported along the free outer edges of the tapes are interlocking fastening elements or teeth **37** adapted to mesh with fastening elements or teeth **39** on similar fabric tapes **41** secured along the top of the sides **16** of the hull **12**. The tapes **41** extend substantially the length of the sides **16**. The fastening elements or teeth **39, 41** extend to a point closely spaced from the end of the extension **31** and from the front end of the cushion **26**. In addition to the zipper closure, the front cushion **26** has laterally outwardly projecting transversely aligned, flexible integral tabs or ears **32** (FIG. 5) and clamped to or otherwise affixed to the ears, in the plane of the body of the ears are plates **34** having slots **36**. The plates are of metal. Similar lateral tabs are formed on the end of the extension **31**.

The intermediate cushion **28** is constructed similarly to cushion **26** but is shorter. The cushion **28** accordingly is provided with the side tapes **35**, interlocking teeth **37**, an extension **31** and tabs **32** and a slider **43** at each side. Cushion **28**, however, is formed with an extension **45** on the rear end thereof similar to extension **31** on its front end.

The rear cushion **30** is also constructed similarly to cushion **26** but is shorter than the cushions **26** and **28**. Cushion **30** is accordingly provided with an extension **31** on its front end and with tapes **35** and interlocking teeth **37** along its sides together with tabs **32** along its sides, and a slider **43** at each side.

The cushions **26, 28** and **30** are held in raised position to form a deck by the zipper closure members and can easily be detached from the top edge of the hull and lowered by moving the sliders **43**.

In addition to the sliding closure, the cushions may also be secured to the top of the sides of the hull by means of the tabs **32**. For this purpose, fixedly secured to the top surface of each side wall **16** are circular grommets or support plates **38** of metal material. Posts **40** project upwardly from said support plates, and swivelly mounted upon the upper ends of the posts are latch plates **42**, disposed on vertical planes.

A slider element **43** on each side of the cushion **26** moves the teeth **37, 39** into and out of closing engagement.

When the floor cushions are positioned as in FIGS. 2 and 4, the several ears **32** are disposed in overlying, registered relation to the several swivel latch plates **42**. With the latch plates adjusted to the FIG. 5 position thereof, the ears can be lowered to extend the latch plates **42** through the slots **36**. Thereafter, the latch plates are turned ninety degrees to the positions shown in FIGS. 4 and 6. The latch plates now lie in planes perpendicular to the lengths of the slots **36**. This prevents the ears from becoming disengaged from the side walls **16**.

In this way, the several cushions are secured firmly to the top surfaces of the side walls **16**, so as to cause the cushions to now constitute cover panels or decking for the craft. The cover panels are spaced upwardly from the bottom **44** of the hull. Therefore, the legs of the rower seated on the seats **18, 22** are extended under the cushion immediately in front of the seat.

It is seen that this provides a kayak type of boat, with the possibility of water splashing into the boat being reduced to a minimum. The only apertures in the decking are those in front of the seats for receiving the bodies of the rowers, and these are closed to a considerable degree by the extensions **31, 45** encircling the body of the rower.

By reason of the above, it will be seen that the inflatable canoe has collapsible cushions which at times are usable as the bottom cushions of the boat, and at other times are detachably connectable to the top surfaces of the side walls, in a manner to constitute removable, buoyant decking or cover panels converting the canoe into a kayak type vessel.

Referring now to FIG. 11, there is here shown a modified construction illustrating the application of the invention to a skiff generally designated **46**. The skiff is of the scow type, having blunt or square ends **48**. The skiff is inflatable similar to the canoe **10**, and thus has inflatable side walls **50**. The skiff, of course, would be of the same, flexible, collapsible, waterproof material as the canoe **10**.

In this form, the cushions **52, 54, 56** again may be disposed in the bottom of the skiff as bottom cushions. The seats have been designated **58, 60**. The cushions are so formed as to follow the general contour of the craft at the location where the cushions are disposed. Thus, the invention shown in FIG. 11 is similar in respect to the basic concept thereof to the invention shown in FIG. 3.

In this form of the invention, the skiff is converted into a kayak type craft. The cushions are constructed similarly to the cushions **26, 28** and **30**, with zipper closure and tab closures and similar numerals are used to indicate similar parts. It is not necessary, of course, that the tabs **32** be located exactly where shown in FIG. 11, and the number and location of the tabs would be at the option of the manufacturer. It is mainly important that the cushions be secured firmly to the hull, in such a manner as to insure to the maximum extent against water splashing therein.

Referring now to FIGS. 13 and 14, here again there is shown a canoe **10** by way of example. In this form, this invention differs from the first form in that instead of inflatable cover panels, there are provided fabric, non-inflatable panels **66, 68**. The panels **66, 68** can be waterproof or of water-repellent canvas, rubberized fabric, etc. In any event, the cover panels **66** in this form of the invention are designed to enclose the body of the wearer much more snugly than is true of the panels of the first and second forms of the invention. It may be noted, in this regard, that the panels **66, 68** are secured to the top of the sides **16** by zipper closures similar to the cushions **26, 28, 30** and also by ears **70** similar to ears **32** slotted in the same manner as shown in FIG. 5, to receive latch plates **72** swiveled and constructed like the plates **42**.

The panels **66, 68** have confronting, closely spaced inner end edges **74, 76**, respectively. Formed in said edges, medially between the opposite sides of the panels, are confronting, approximately semicircular recesses **78, 80**. These cooperate to define a substantially circular opening **82** intermediate the opposite ends of the vessel. The rower is snugly received in said opening **82**, as will be clearly seen in FIG. 13.

In this form of the invention, there is almost completely efficient closure of the hull, designed to facilitate maximum use thereof as a kayak.

Of course, the panels **66, 68** might be of the inflatable type and still have the exact configuration as shown in FIG. 14. In other words, inflatable panels might be provided that have the recesses **78, 80** and the closely spaced edges **74, 76**.

Conversely, non-inflatable panels such as have been shown in FIGS. 13 and 14 could be shaped like the panels shown in FIGS. 3 and 11. This is thought sufficiently obvious as not to require special illustration herein.

In all forms of the invention there is the common characteristic wherein a collapsible, inflatable watercraft of any type can be readily converted into a kayak-type boat, through the provision of flexible panels that are swiftly,

detachably connectable to the top surfaces of the hull of the craft. A wide range of uses of the watercraft thus becomes possible, whereas heretofore, said craft has only been usable for their main, designed initial purpose.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and that various changes and modifications may be made within the scope of the invention as defined in the appended claim.

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

A collapsible watercraft comprising a hull having an open top and inflatable side walls with slide fastener members disposed at the top of the side walls, a plurality of panels having edges terminating in end flaps forming concave arcuate end portions, slide fastener members secured along the panel edges terminating short of the flaps and cooperating with said fastener members at the side walls for connecting the panels to the side walls of the hull to form a deck and for connecting the panels in spaced end-to-end relationship to define openings in the deck for occupants of the craft, and latch means for connecting the flaps to the side walls and adapted to release such flaps to expand said openings and facilitate entrance and exit of the occupants of the craft leaving the panels and slide fastener undisturbed.



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