

Feb. 25, 1964

P. A. BARETTA  
PACKAGEABLE BOAT

3,121,887

Filed Oct. 31, 1962

2 Sheets-Sheet 1

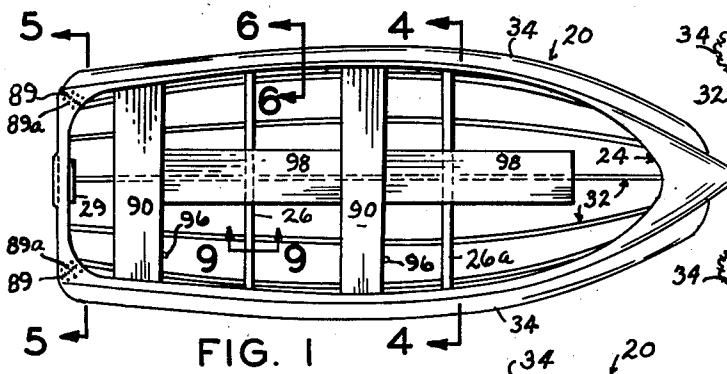


FIG. 1

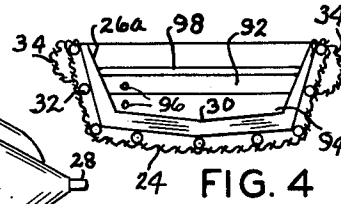


FIG. 4

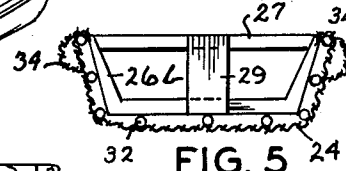


FIG. 5

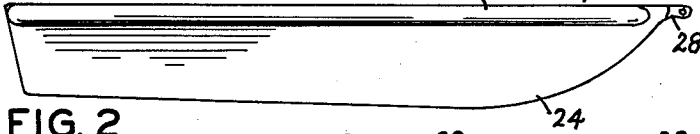


FIG. 2

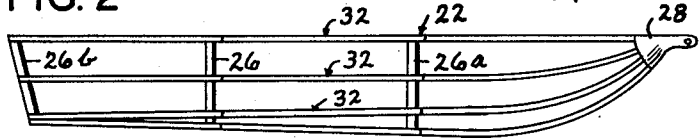


FIG. 3

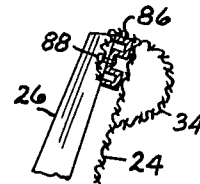


FIG. 6

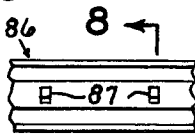


FIG. 7

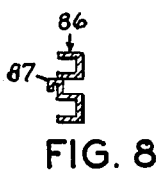


FIG. 8

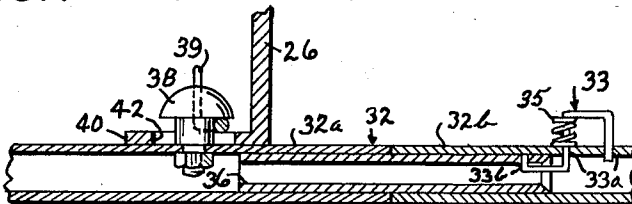


FIG. 9

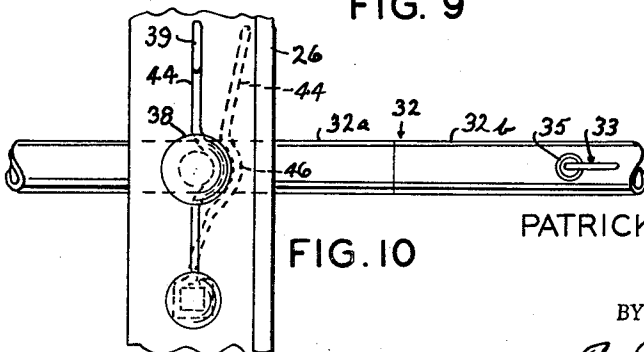


FIG. 10

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2 Sheets-Sheet 2

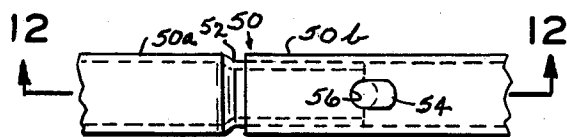


FIG. 11

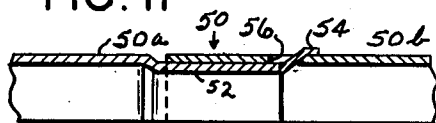


FIG. 12

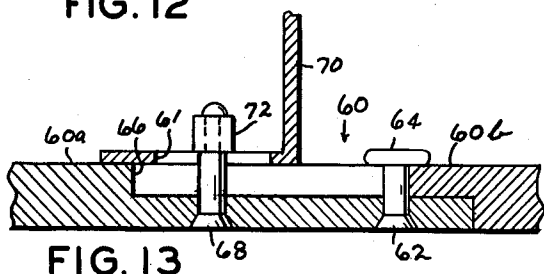


FIG. 13

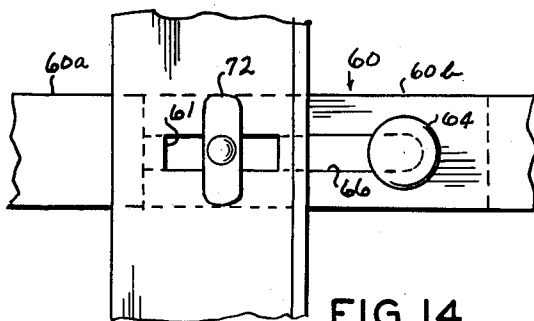


FIG. 14

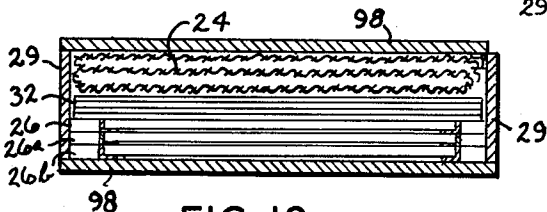


FIG. 19

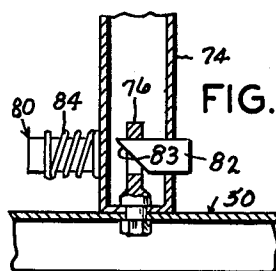


FIG. 15

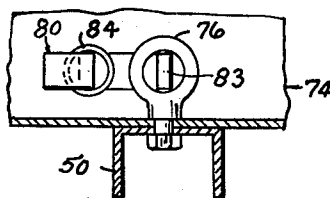


FIG. 17

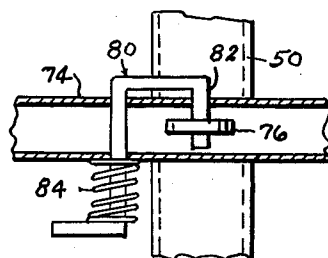


FIG. 16

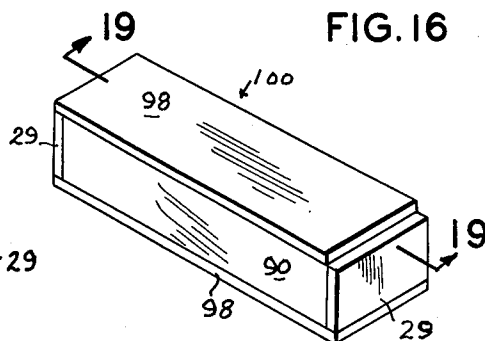


FIG. 18

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3,121,887

## PACKAGEABLE BOAT

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3 Claims. (Cl. 9-2)

The present invention relates to boats and more particularly to a collapsible and packageable boat.

The prior art reveals a number of collapsible boats or sectional canoes which are, for the most part, formed in sections resulting in forming a bulky package when disassembled. Furthermore, the collapsible boats of the prior art are not capable of supporting and using an outboard motor.

The principal object of the instant invention is to provide a collapsible boat in which all of the components thereof are separable, one from the other, for packaging the collapsed boat in a relatively small area.

Another object is to provide a boat of this class which is sufficiently rigid to permit towing water skiers and yet is quickly and easily assembled and disassembled.

Another object is providing a collapsible boat constructed with a V-shape or a flat bottom depending on the characteristics desired.

Another object is to provide a boat shaped flexible skin or cover for a collapsible boat which is formed in such a manner that not more than two fasteners are normally necessary to maintain the cover in place.

Another object is to provide a boat of this class wherein longitudinal members, defining the shape of the hull, are formed in sections and are removably attached to outer surfaces of transverse ribs.

Still another object is to provide a collapsible boat having inflatable compartments which will prevent the boat sinking if the hull is accidentally punctured.

A further object is to provide a boat of this class which includes floorboards and seat members which forms a box-like outer covering for the other components of the disassembled boat.

Still another object is to provide a lightweight packageable boat which is constructed in such a manner that an outboard motor may be connected to its stern.

Another object is to provide novel fastening means for joining components forming the boat at their point of contact.

The present invention accomplishes these and other objects by removably connecting a plurality of substantially U-shaped rib sections to a plurality of sectionally divided longitudinal members which are interconnected at their forward ends to a nose piece to form a frame or hull. A flexible skin or covering surrounds the hull and is attached along its marginal edges to the uppermost longitudinal member. Floorboard and seat means form a box-like container for packaging the components when disassembled.

Other objects will be apparent from the following description when taken in conjunction with the accompanying two sheets of drawings, wherein:

FIGURE 1 is a top plan view of the assembled boat;

FIGURE 2 is a side elevational view thereof;

FIGURE 3 is a view similar to FIG. 2 with the outer skin or covering removed;

FIGURES 4, 5 and 6 are vertical cross-sectional views taken substantially along the respective lines 4-4, 5-5 and 6-6 of FIG. 1;

FIGURE 7 is a fragmentary elevational view of an alternate longitudinal member;

FIGURE 8 is a vertical cross-sectional view taken substantially along the line 8-8 of FIG. 7;

FIGURE 9 is a fragmentary vertical cross-sectional view taken substantially along the line 9-9 of FIG. 1;

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FIGURE 10 is a top plan view of FIG. 9;

FIGURE 11 is a top view of an alternate manner of joining a longitudinal member;

FIGURE 12 is a vertical cross-sectional view taken substantially along the line 12-12 of FIG. 11;

FIGURE 13 is a view similar to FIG. 9 illustrating an alternate manner of joining a longitudinal member to a rib;

FIGURE 14 is a top view of FIG. 13;

FIGURE 15 is a view similar to FIGS. 9 and 13 illustrating an alternate manner of connecting the longitudinal members to a rib;

FIGURE 16 is a top plan view of FIG. 15;

FIGURE 17 is a front elevational view, partly in cross-section, of FIG. 16;

FIGURE 18 is a perspective view of the disassembled and packaged boat; and,

FIGURE 19 is a vertical cross-sectional view taken substantially along the line 19-19 of FIG. 18.

Like characters of reference designate like parts in those figures of the drawings in which they occur.

In the drawings:

The reference numeral 20 indicates the assembled boat, as a whole, having a framework, indicated generally by the numeral 22, covered by a skin or cover 24. The frame or hull 22 includes transverse ribs 26, 26a and 26b, a nose piece 28 and longitudinal members 32. These ribs are substantially of modified U-shape to achieve the desired cross-sectional configuration of the boat. The central and forward ribs 26 and 26a may be formed with a slightly V-shaped bottom or bight portion 30 (FIG. 4). The longitudinal rib members 32 are formed of a plurality of end interlocking sections 32a and 32b for the purposes which will presently be apparent.

The longitudinal members shown in FIGS. 1 through 5 are round but may be formed in any desired cross-sectional shape including channel, FIGS. 11, 12 and 17, hat channel or triangular, not shown, box or rectangular, FIGS. 13 and 14, or modified hat channel, as shown in FIGS. 6, 7 and 8. Similarly the cross-sectional configuration of the transverse ribs may be varied as desired.

The skin or covering 24 is preferably of one piece water proof material which is shaped to encompass the front or nose portion, bottom and all sides of the boat and, as a safety feature, may be secured by suitable fasteners along its marginal edges to the uppermost longitudinal member 32. Adjacent its marginal edges the opposing sides of the skin 24 is provided with a longitudinally extending inflatable compartment 34 which acts as buoyancy to keep the boat afloat if the skin becomes ruptured. The compartments 34 further serves as a buffer or bumper along the gunwale.

As shown in FIG. 9, the adjacent sections 32a and 32b of the longitudinal rib members are joined by a tube 36 secured by one end portion within the end portion of the section 32a. The other end portion of the tube 36 is removably inserted into the adjacent end of the section 32b.

The respective sections of the longitudinal members 32 are connected to prevent accidental or unauthorized separation at their juncture by a substantially S-shaped rod-like fastener 33 forming an outstanding U-shaped portion slidably received by its respective leg portions within a pair of cooperating longitudinally spaced-apart apertures 33a formed in the wall of the section 32b adjacent the inwardly disposed end of the tube 36. Adjacent its inwardly disposed end, the tube 36 is provided with an aperture 33b for receiving one leg of an opposite U-shaped end portion of the member 33. The inwardly disposed end of the tube 36 is beveled or chamfered for ease in assembling the tube sections 32a and 32b. A spring 35 surrounds one leg of the outwardly disposed U-shaped

portion of the member 33 to maintain the latter in locked relation with the tube 36.

A round headed screw 38 is permanently attached, at one end, to the member section 32a. A depending flange portion 40 of the rib 26 is provided with an enlarged aperture or opening 42 diametrically slightly greater than the diameter of the head of the screw 38. An elongated arm 44, of resilient material, is rigidly secured, at one end, to the upper surface of the rib flange 40 and extends across the opening 42 and is arcuately turned upwardly at its free end portion to form a loop 39. Intermediate its ends, the arm 44 is arcuately curved or bent, as at 46, on an arc which contiguously contacts a portion of the arc of the screw 38 between its head and connection with the member 32 so that when the screw head 38 is forced through the aperture 42 the round head of the screw forces the arm 44 laterally of the aperture for admission of the screw head. The resiliency of the arm then forces the arcuately bowed portion 46 into contact with the shank of the screw between its head and the adjacent surface of the rib flange 40.

Referring more particularly to FIGS. 11 and 12, an alternate manner of joining two sections 50a and 50b of the channel-shaped longitudinal member 50 is shown. A portion of the end of the section 50a is reduced, as at 52, to be contiguously received within the end portion of the section 50b. The free end of the reduced portion 52 is provided with an outwardly and upwardly projecting lug 54 which is cooperatively received within an aperture 56 formed in the section 50b which prevents longitudinal movement of the sections 50a and 50b relative to each other.

Referring more particularly to FIGS. 13 and 14, a rectangular longitudinal member 60, comprising sections 60a and 60b, is assembled in overlapping relation by mitering the respective upper and lower surfaces of the adjacent end portions of the two sections. Adjacent its free end the section 60a is provided with a permanently connected screw 62 having an enlarged head 64. The free end portion of the section 60b is provided with a longitudinal extending slot 66 for receiving the shank of the screw 62. A similar screw 68, permanently connected to the section 60a, passes through a suitable cooperating slot 61 in the flange of the rib 70 and is held in place by a nut or lug 72. A lug 72 is rotated 90° after passing through the slot 61.

FIGS. 15 to 17 illustrate an alternate manner of connecting the longitudinal member 50 to an alternate shaped rib 74. An eye bolt 76 is secured to the bight portion of the member 50 with the eye of the bolt projecting upwardly. A substantially Z-shaped member 80 is passed transversely through the rib 74 and turned back upon itself to form an arm 82 which removably enters the opening of the eye 76. A spring 84, surrounding an intermediate portion of the member 80 on that side of the rib opposite the arm 82, resiliently urges the arm into engagement with the eye of the screw. The end of the arm portion 82 is provided with a beveled surface 83 which is contacted by the eye bolt 76 to overcome the spring 84 and permit the bolt to be automatically engaged with the arm 82 when the bolt 76 is manually forced into position.

The rearward transverse rib 26b is interconnected at its upper ends by a cross member 27. A motor mounting board or member 29 extends vertically between the bight portion of the rib 26b and the cross member 27 in overlapping relation on the fore and aft sides of the rib. The motor mounts 28 are secured by one of the above type fasteners to the rib.

Eyelets or other suitable openings formed adjacent the marginal edges of the cover 24 engage with suitable fastening means on the uppermost longitudinal rib 32 to maintain the cover in place. For example, the alternate rib 86, shown in FIGS. 7 and 8, is provided with hook members 87 punched out of its bight portion for

engagement with the eyelet of the cover 24. As seen in FIG. 6 other type skin fasteners such as the screw or rivet 88 may be connected to the respective type rib member used. As shown in FIG. 1, the forward portion of the skin 24 overlaps the upper surface of the boat and rearwardly the skin is drawn up and over the respective opposing rear corner portions of the boat. Adjacent meeting edges of the fitted cover 24, at the rearward corners of the boat, are joined or held in place by slide fasteners 89. As an alternate and safety feature the slide fasteners 89 are supplemented by eyelet shielded apertures 89a for lacing the skin edges together.

One or more rectangular seats 90 extend transversely of the boat at selected locations. The seat is provided with upper and lower compartments 92 and 94, respectively, formed of suitable material which may be inflated through a valve 96 to add buoyancy to the boat. Floorboards 98 extend longitudinally of the boat and are supported and secured by one of the above described fasteners to the transverse ribs.

The boat 10 is dismantled and packaged, as shown by FIG. 18, by removing the covering 24 and disconnecting the seats and rib members from the longitudinal members after removing the seats 90 and floorboards 98.

As seen in FIG. 18, the floorboards 98 form the top and bottom of a box-like container 100. The motor mounts 29 form the ends of the box while the seats 90 form the respective sides of the box. The overall length of the box 100 is slightly greater than the greatest dimension of the transverse ribs. The width of the box is slightly greater than the depth of the foremost transverse rib while the height of the box is equal to the width of the seats 90 and motor mounts 29. One of the floorboards is preferably hingedly connected to one of the motor mounts 29 to facilitate opening and closing the box.

Obviously the invention is susceptible to some change or alteration without defeating its practicability, and I therefore do not wish to be confined to the preferred embodiment shown in the drawings and described herein, further than I am limited by the scope of the appended claims.

I claim:

1. A packageable boat, including: a plurality of sectionally divided interconnected longitudinal members; a plurality of substantially U-shaped unitary transverse ribs, a cross bar interconnecting the upper end portions of the rearwardmost transverse rib; a nose piece connected with the forward end portions of said longitudinal members; fastening means removably interconnecting said longitudinal members to said transverse ribs and said nose piece in spaced-apart relation to form a hull; a one-piece hull-shaped water tight flexible covering surrounding the outer surfaces of said hull, said covering having a marginal edge portion overlapping, inwardly, the respective uppermost longitudinal member and the upper surface of said cross bar, said covering having an inflatable airtight compartment positioned along and coextensive with the respective side of the gunwale portion of said boat, the forward end portion of said covering surrounding said nose piece in overlapping relation, the marginal edge portion of said covering having meeting edges positioned at the respective rearward corner portions of said hull; and fastening means connecting the meeting edges of said covering.

2. A packageable boat, including: a plurality of substantially U-shaped transverse ribs of unitary construction, the foremost one of said transverse ribs having a substantially V-shaped bight portion; a plurality of sectional longitudinal members removably connected to said ribs for forming a hull; a nose piece connected to the forward ends of said longitudinal members; and a hull-shaped flexible skin covering said hull, said skin surrounding said nose piece and overlapping along its marginal edge portions the remaining upper edges of said

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hull, said skin having a longitudinal extending airtight inflatable compartment forming a part of said skin along opposing sides of said hull adjacent the marginal edge of said skin.

3. A packageable boat, including: a plurality of sectional longitudinal members; a nose piece overlapping the forward end portions of said longitudinal members; a plurality of one-piece ribs transversely spanning said longitudinal members in spaced-apart relation and defining a hull; a boat-shaped one-piece flexible skin surrounding the outer surfaces of said hull and secured at its marginal edge portions around the upper limit of said hull; fastening means interconnecting said longitudinal members with said ribs and said nose piece; rectangular seats trans-

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versely supported by said hull; rectangular floorboards longitudinally supported by the upper surface of said ribs; and at least one rectangular motor mount secured to the rearwardmost said transverse rib, said seats, motor mounts and floorboards being removably interconnected to form a rectangular box-like container for receiving the remaining components of said boat.

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