United States Patent

Thompson

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[54] **TUBE FLOAT OR BOAT**

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[52] **U.S. Cl.** .....**9/2 A**
[51] **Int. Cl.** **B63b 7/08**
[58] **Field of Search**.....9/2 R, 2 A, 2 C, 2 S, 11 A, 9/5, 347, 311

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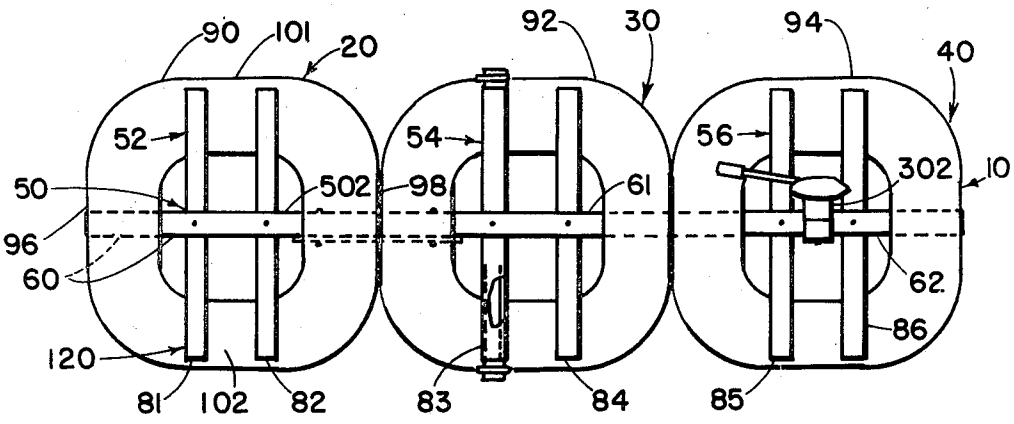
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[57] **ABSTRACT**

A floatation unit which can form a part of a boat or raft comprising a frame having longitudinal and transverse frame members, and an inflatable flexible tube of annular shape in top plan view having forward and rearward portions disposed above the longitudinal frame member when it is in a horizontal position, and having right and left portions disposed below the horizontal transverse frame member.

A boat or raft formed of multiple floatation units disposed side by side or forwardly and rearwardly of each other.

10 Claims, 4 Drawing Figures



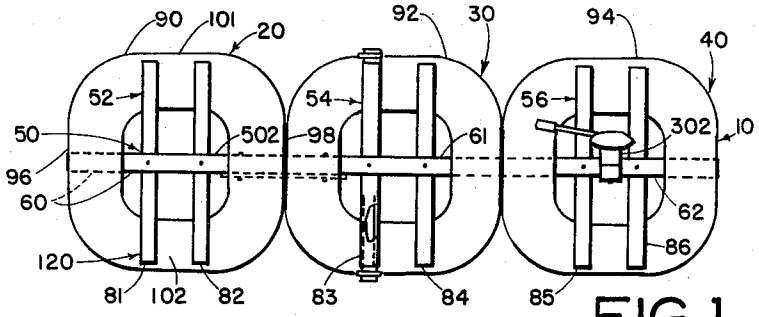


FIG. 1

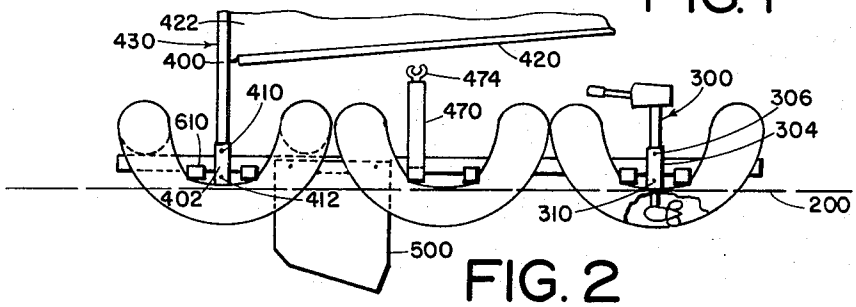


FIG. 2

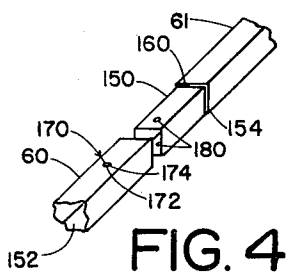


FIG. 4

FIG. 3

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TUBE FLOAT OR BOAT

FIELD OF THE INVENTION

This invention is in the field of floats such as boats and rafts made from inflatable tubes.

DESCRIPTION OF THE PRIOR ART

In the prior art, no floatation units for boats or rafts made from inner tubes in a manner involving longitudinal and transverse frame members are to be found, even though it is well-known that automobile inner tubes are available at low price in all localities and are commonly used without frames as floats in swimming areas.

Inflatable annular tubes have been proposed in the prior art for providing floats using a tube with always was of large size for larger than an automobile inner tube and which could be manufactured only with great expense and with special molds.

Prior art floats or boats made from single tubes have had the further disadvantage that forward and rearward portions of the tubes would hit the water with resistance as the boat moved forward since they are on the same horizontal level as the sides of the tubes.

SUMMARY OF THE INVENTION

A floatation unit which can form a part of a boar or raft comprising a frame having longitudinal and transverse frame members, and an inflatable flexible tube of annular shape in top plan view having forward and rearward portions disposed above the longitudinal frame member when it is in a horizontal position, and having right and left portions disposed below the horizontal transverse frame member, the dimensions of the tube being such that in the described position, its upper side is pressed firmly against the transverse frame means for serving to hold the tube firmly in place on the frame.

A floatation structure for use as a boat or raft comprising a plurality of the floatation units described disposed forwardly and rearwardly of each other when seen in side elevation, the frames of the floatation units being interconnected.

A plurality of units as described disposed one behind another with outermost parts of the right and left side portions of each unit disposed in two straight lines respectively.

A combination of flotation units disposed with two units alongside each other and a third unit disposed with its area center, as seen in top plan view, arranged rearwardly of a midpoint between two front units.

The flotation unit described in which the transverse frame means comprises two parallel spaced apart transverse frame members.

A boat having propulsion means such as an outboard motor or a sail and formed from the floatation units described.

The combination in which certain of the frame members are notched to receive portions of other frame members for helping to form a rigid frame.

A particular object is to provide a quick way to attach inner tubes to a boat frame whereby tedious attaching is unnecessary, the method of attachment being to either put them in place while deflated or to assemble tubes on floatation unit frames as disconnectable frame portions are assembled.

A further object is to provide a boat having only rubber parts or synthetic rubber parts on its lowermost surfaces whereby the boat can be placed on the top of an automobile without damage to the finish and whereby a cartop carrier is not necessary, and so the nuisance of attaching and unattaching a cartop carrier is eliminated.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a top plan view of a boat of this invention shown with an outboard motor mounted thereon, and also with means for mounting oarts thereon for rowing the boat. A portion of a longitudinal frame member in FIG. 1 is broken away to show its hollow construction.

FIG. 2 is a side elevation of the boat of FIG. 1 but with mast, boom, and sail assembly mounted thereon, and with a center board attached thereto, a portion of an inner tube being broken away to show the propeller.

FIG. 3 is a boat or raft diagramatically shown in perspective, and being a modification in which three inner tubes are used, the inner tube of each of three floatation unit not being shown.

FIG. 4 is a detail in perspective of a disconnectable joint in disconnected position and as used between two longitudinal frame members.

DESCRIPTION OF THE PREFERRED EMBODIMENT

In FIG. 1 a boat is shown generally at **10** and it can also be called a floatation structure **10**, since a similar construction could also be referred to as a raft, if one prefers.

The boat **10** comprises three floatation units generally indicated at **20, 30, 40**. Each flotation unit comprises a frame, and the main or entire frame **50** of the entire boat **10** will be understood to be composed of a plurality of separate frames shown at **52, 54,** and **56** for the respective floatation units **20, 30,** and **40**.

Each frame **52, 54,** or **56** will be seen to have at least one longitudinal frame member **60, 61,** or **62**, respectively, for each floatation unit **20, 30,** and **40**.

Each longitudinal frame member **60, 61,** or **62** has at least one elongated transverse frame member horizontally disposed and attached to the horizontal longitudinal frame member **60, 61,** or **62,** and extending transversely to the latter respectively, such elongated transverse frame member being **81** and **82** in the case of the floatation unit **20, 83** and **84** in the case of the floatation unit **30,** and **85** and **86** in the case of the floatation unit **40.**

The transverse frame members of each floatation unit are substantially spaced apart a distance that can vary considerably and still work. For example, the distance of one foot is practical with the most common available automobile inner tubes of full-size American passenger cars. The transverse frame members are preferably disposed at a right angle with the respect to the longitudinal frame member of each floatation unit.

Each floatation unit **20, 30,** or **40** has an inflatable flexible tube of annular shape in top plan view and which can be an inner tube of an automobile as described.

The tubes are shown at **90, 92,** and **94** for the units **20, 30,** and **40**. Each tube has its forward and rearward ends **96** and **98,** in the case of the unit **20,** disposed above the longitudinal frame member **60** thereof and

has right and left side portions **101** and **102** disposed below the transverse frame member **81** and also below the transverse frame member **82**. It is to be understood that one or more transverse frame members can be used and that for most effective use, the forward edge of a forward transverse frame member should be spaced from the rearward edge of a rearward transverse frame member a distance of 8 inches or 1 foot, for example, when an ordinary automobile inner tube as above described is used.

The dimensions of the tube **90** are such that in the described position, the top of the right and left sides **101** and **102** of the tube are pressed firmly against the undersides of the transverse frame means or transverse frame assembly generally indicated at **120** and which comprises the transverse frame members **81** and **82**, taken together.

In FIGS. **1** and **2**, the floatation units **90**, **92**, and **94** are disposed in a row forwardly and rearwardly of each other respectively. The frames **60**, **61**, and **62** are secured together in a row to form a single longitudinal frame member for an enitre float or boat or raft, as the resultant structure could be variously called.

The method of securing sections **60**, **61**, and **62** together can be as shown in FIG. **3** in which the frame members **60** and **61** are hollow, as preferably also are the transverse frame members above described. A bridging member **150** preferably is squared shaped in cross-section and elongated and is inserted into the square cross-section openings **152** and **154** of the frame members **61** and **62**, and securing means such as welding at **160** of the bridge member **150** to the frame member **61** and a bolt means or assembly **170** can be employed to secure the bridge member **150** to the frame member **60**. The bolt assembly **170** comprises a bolt **172** adapted to extend through suitable holes **174** in opposite sides of the frame member **60** and through other suitable holes registering therewith and shown at **180** in opposite sides of the bridge member **150**. This method will make it possible to removably attach the frame members together so that this assembly is easy, when desired.

As best seen in FIG. **1**, the outermost part of the right and left side portions of each unit **20**, **30** and **40** are disposed in two straight lines respectively, whereby the alignment of the right and left side portions of the tubes which would also be the undermost portions of the tubes, tends to make less resistance in the water than would be the case if these tubes had their side portions not in alignment.

The forward and rearward ends of each tube, those ends of the tube are held above the water line shown at **200** because they extend across the top of the longitudinal frame members **60**, **61**, and **62** respectively.

Referring to FIG. **4**, it can be seen that the frame **250** of the float there shown provides the frames of three floatation units connected together, these floatation units are right and left forward floatation unit frames **260** and **262** disposed alongside each other at the forward end of the float frame **250** and a third floatation unit frame **264** disposed with its area center as seen in top plan view arranged directly rearward of a midpoint between the two front units **260** and **262** along a common longitudinal frame assembly **270** having a forward part **272** and a rearward part **274**, the longitudinal frame members of the forward floatation unit frames **260** and **262** being shown respectively at **280** and **282** parallel to and spaced from the longitudinal frame assembly **270**.

It will be understood that the way the frame of FIG. **4** is used is to put on it tubes in the same fashion as for each of the floatation units of FIG. **1**.

It is to be further understood that in merchandising, it may be desirable to sell the frames alone at lesser price to those customers who prefer to provide their own inner tubes.

Referring now to FIG. **1**, it will be seen that an outboard motor is shown at **300** attached to a first block **302**.

The block **302** extends vertically along one side of the frame member **62** and a companion block **304** extends vertically along the opposite side thereof, on the right and left sides respectfully, the blocks **302** and **304** being secured together by bolts **306** and **310** at the bottom and top of the frame member **62** and extending through the blocks **302** and **304** for firmly fixing the motor **300** to the frame member **62** at the rear of the float.

In similar manner, a mast **400** can extend down the long one side of the frame member **60** and a mast block **402** can extend along the opposite side of the frame member **60** with bolts **410** and **412** disposed above and below the frame member **60** and extending horizontally as are the bolts **306** and **310** for securing the block **402** to the mast **400** and firmly anchoring the mast to the frame member **60**.

On the mast **400** is a boom pivoted thereto. A sail **422** mounted on the mast and boom completes the mast, boom, sail assembly **430**.

Vertical oarlock supports **470** extend upwardly from opposite ends of the transverse frame member **83** a suitable distance so that a rider seated with his buttox partly on the rearward portion of tube **90** and partly on the forward portion of tube **92** can handle a row with oars not shown carried in oarlock **474** mounted in the top of the members **470**.

A center board to prevent slide slip is shown at **500** and is suitably attached to the left side of the main frame assembly **502**, which latter comprises longitudinal frame sections **60**, **61**, and **62**.

Referring to FIG. **4**, it will be seen that each transverse member extends through a closely fitting notch **600** and each longitudinal frame member which they intersect, each notch **600** being on the underside of a respective longitudinal frame member and being of rectangular shape in side elevation as seen in FIG. **2** at **610**, whereby a rigid frame is provided because of the close fit, at each intersection of a longitudinal frame member with a transverse frame member a bolt and nut assembly **630** extends through the upper longitudinal frame member and down through the lower transverse frame member to fix the two firmly together.

It is important to realize the great comfort for a rider who is seated on the upper parts of two adjacent inner tubes since the inner tubes will yield readily to conform to the buttox.

I claim:

1. A floatation unit comprising: a frame having at least one elongated longitudinal frame member and having at least one horizontally elongated transverse

frame member attached to the longitudinal frame member and extending transversely thereto, and an inflatable flexible tube of annular shape in top plan view, said tube having forward and rearward portions disposed above said longitudinal frame member and also having right and left portions disposed below said transverse frame member.

2. The combination of claim 1 in which the dimensions of said tube are such that in the described position the top of its right and left sides are pressed firmly against said transverse frame means.

3. A floatation structure comprising a plurality of the floatation units of claim 1, said floatation units being disposed forwardly and rearwardly of each other when seen in side elevation, the frames of said floatation units being interconnected.

4. The combination of claim 3 in which the said plurality of floatation units are disposed one behind another with outermost parts of the right and left side portions of each unit disposed in two straight lines respectively.

5. The combination of claim 3 in which said units are disposed with two of said units alongside each other and a third unit disposed with its area center as seen in top plan view arranged directly rearward of a midpoint between the said two front units.

6. The combination of claim 1 in which said transverse frame means comprises two parallel spaced apart transverse frame members.

7. The combination of claim 3 in further combination with an outboard motor attached thereto.

8. The combination of claim 3 in further combination with a mast, boom, and sail assembly attached thereto.

9. The combination of claim 3 in which the means of connecting said units together comprises said longitudinal frame members of said units being aligned and having adjacent tubular end portions which are provided with rectangular inner surfaces as seen in cross-section, an elongated insert having a cross-section of a uniform rectangular shape along its length and of a size adapted to snugly fit in said longitudinal frame members, said insert being disposed partly in the longitudinal frame member of one of said units and partly in the longitudinal frame member of one of said units, and means connecting said insert to the said adjacent longitudinal frame members of said units.

10. The combination of claim 1 in which said floatation units are constructed so that their transverse and longitudinal frame members lap each other to form an intersection, and at each intersection one of the intersecting frame members having a notch therein receiving an adjacent portion of the other intersecting frame member, and means securing the transverse and longitudinal frame members together to form a rigid structure, such means being a bolt extended vertically through the intersecting frame members, said frame members being of rectangular shape in cross-section, said notch having edges closely fitting the opposite intersecting frame member.

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