United States Patent

[11] 3,601,076

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[54] **SAIL BOAT**
9 Claims, 5 Drawing Figs.

[52] **U.S. Cl.** **114/39,** 9/2
[51] **Int. Cl.** **B63b 7/00,** B63b 35/00
[50] **Field of Search** ..... 9/2 I, 2, 1, 312; 114/39

[56] **References Cited**

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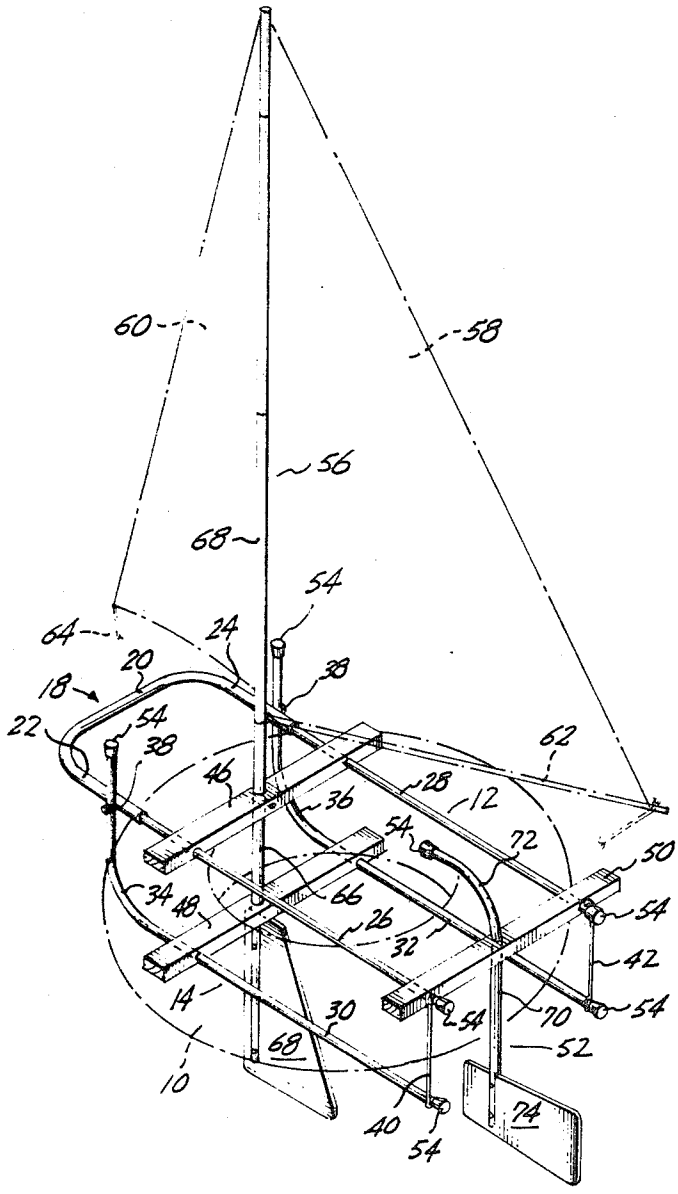
2,674,753	4/1954	Wood	9/1.5 X
3,139,057	6/1964	Black	114/43
3,390,656	7/1968	Flowers	114/39

FOREIGN PATENTS

878,286	9/1961	Great Britain	9/2 I

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ABSTRACT: An inflated annular tube (e.g. a truck tire inner tube) is clamped between upper and lower parts of a sail and rudder carrying frame. Each such frame part comprises a pair of laterally spaced longitudinal members. The lower longitudinal members include upwardly turned forward portions which meet and are secured to the forward end portions of the upper longitudinal members. Tension members are vertically interconnected between the upper and lower longitudinal members at the rear of the frame. Crosstie members extending between the longitudinal members support a sail mast generally at a location intermediate the ends of the boat. A rudder is supported by a crosstie at the rear of the boat.



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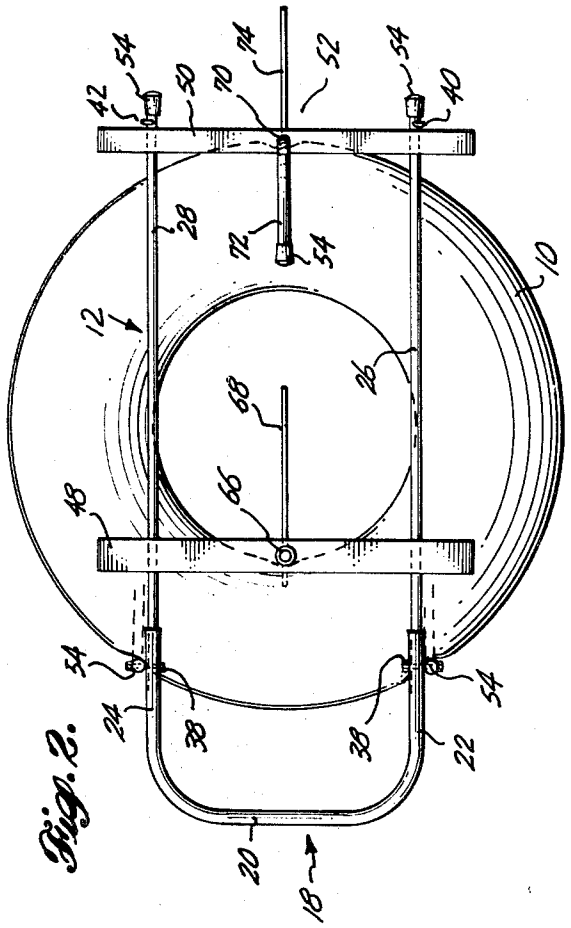


Fig. 2.

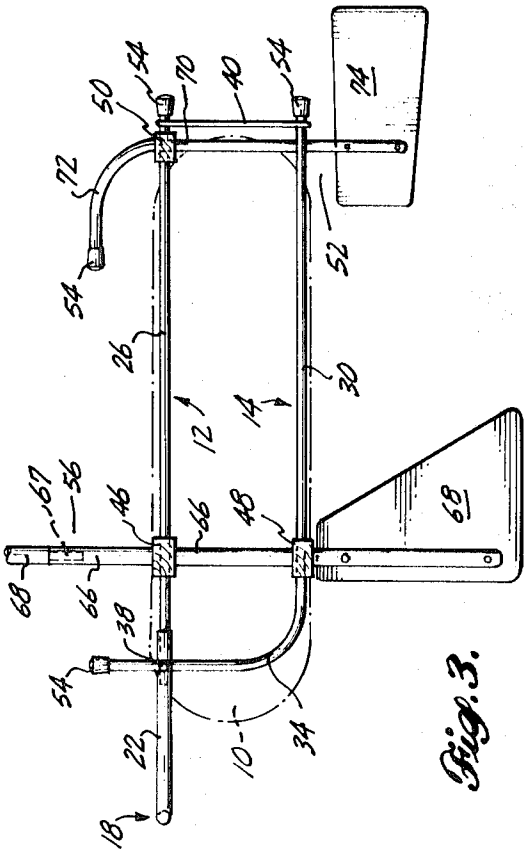


Fig. 3.

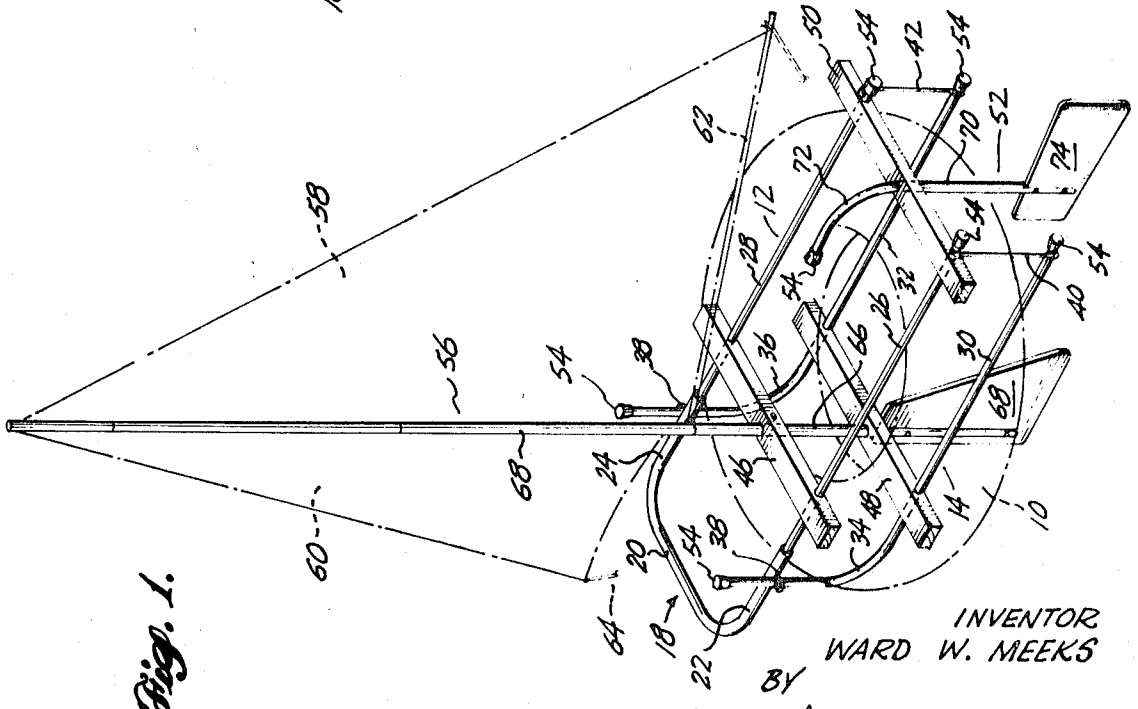


Fig. 1.

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2 Sheets-Sheet 2

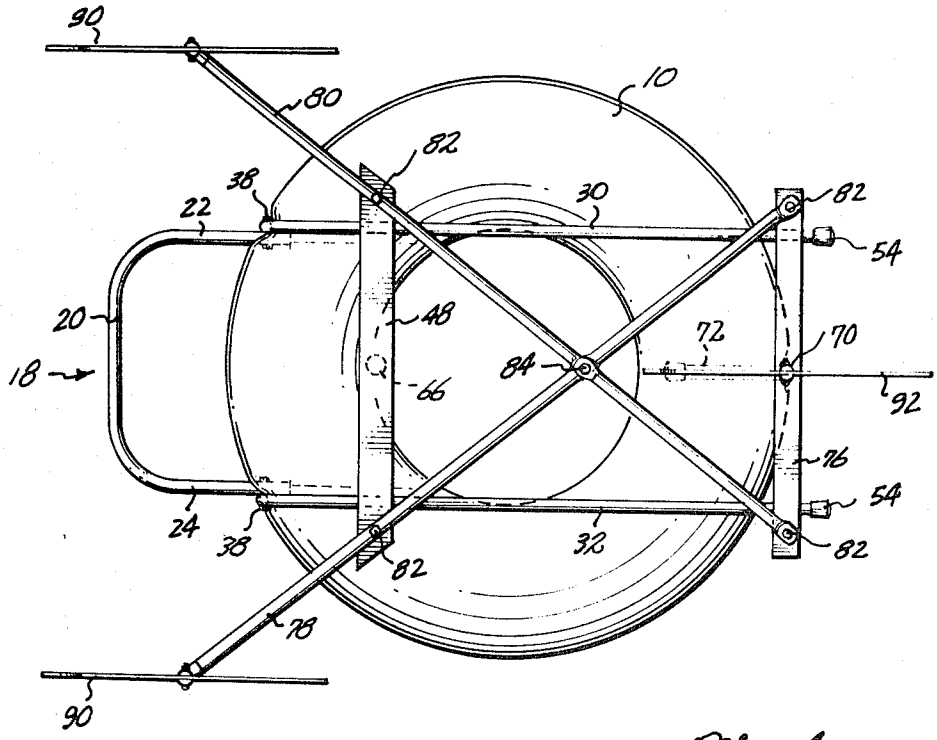


Fig. 4.

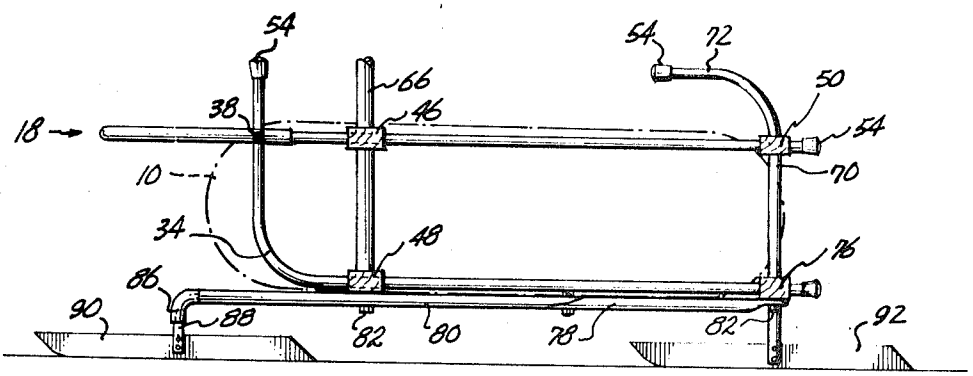


Fig. 5.

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SAIL BOAT

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to sail boats and particularly to small sail boats built around an inflated inner tube for a motor vehicle tire.

2. Description of the Prior Art

Walters, U.S. Pat. No. 1,625,579; Jantzen, U.S. Pat. No. 3,037,220 and Flowers, U.S. Pat. No. 3,390,656 relate to small boats having a small float body and an attachment for converting the float into a sail boat.

The float used by Walters is constructed from balsa wood or the like, and is of sectional construction so that it can be collapsed into a small package for transportation and storage when not in use. A disadvantage of this type of boat is that a substantial volume of buoyant material is needed to provide the necessary buoyant force. Hence, even when collapsed the buoyant body occupies a considerable amount of space.

Jantzen, U.S. Pat. No. 3,037,220 discloses the use of one piece, noncollapsible float. If this type of float is made small in size, it is not possible for the user to actually get up onto the boat. If the float is made large enough in size for the user to ride it, it occupies a large amount of space and becomes difficult to handle and store.

Flowers, U.S. Pat. No. 3,390,656 uses an inflatable ring-type float. Hence, during periods of nonuse the float body can be deflated, rendering it easy to handle and store. A disadvantage of this particular boat disclosed by this patent is that the only frame provided is located within the open center of the float, and such frame is lashed onto the float. Unless an extremely large ring is used it would not be possible for the user to actually sit himself on a frame portion of the boat. Also, it is believed that the lashing method of sail assembly attachment would afford insufficient stability.

SUMMARY OF THE INVENTION

The sail boat of the present invention is built around an inner tube for a pneumatic tire or a similar inflatable annular ring device. Hence, during periods of nonuse the flotation body can be deflated and folded into a relatively small package for easy transportation and storage.

The sail boat of the invention also comprises a skeleton-type support frame which is composed of a plurality of tubular frame members which have good structural characteristics when assembled and which occupy a minimum amount of space when disassembled. The frame members are assembled into upper and lower frame parts of substantial area, and the inner tube or other inflated ring float member is securely clamped in place between the upper and lower frame parts. A sail assembly is supported by rigid crosstie members at a location intermediate the length of the boat, and a crosstie member supports a rudder at the rear end of the boat.

The subject invention primarily relates to the construction of the support frame and the relationship of each of the frame parts, and of the sail assembly parts, to the inflated flotation member.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a pictorial view taken from above and looking towards one side and the stern of an embodiment of the sail boat of the present invention, with the various frame parts being shown by solid lines and the inflated flotation ring and the sail being depicted by broken lines;

FIG. 2 is a top plan view of the sail boat, with the sail mast shown in section; and

FIG. 3 is a side elevational view of the boat, with the upper portion of the sail mast and the sail omitted, and with the inflated flotation member depicted by broken lines.

FIG. 4 is a bottom plan view of an iceboat embodiment of the said boat according to the invention; and

FIG. 5 is a side elevational view of a runner attachment for the iceboat.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The sail boat of the invention comprises an inflatable ring-type inflation device **10**, e.g. an inner tube for a truck tire. The tube **10** is tightly clamped between upper and lower parts **12**, **14** of a frame which serves to stabilize a sail assembly **16** in position on the tube **10**.

The upper part of the frame comprises a U-shaped forward portion **18** fabricated from thin walled tubing, such as electrical wire conduit, for example. The member **18** has a forwardly directed bight portion **20** and rearwardly directed side portions **22**, **24**. Longitudinal stringers **26**, **28** are telescopically received at their forward's ends in the after portions of the side portions **22**, **24**.

The lower frame part **14** is composed of a pair of longitudinally extending tubular members (or stringers) **30**, **32** having upwardly turned forward portions **34**, **36**. In the preferred embodiment the upwardly turned portions **34**, **36** side lap the side portions **22**, **24** of member **18**, in the regions of the telescopic engagement of such parts **22**, **24** with the forward end portions **26**, **28**. At the meeting locations of the members **34**, **22**, **24** on the one side of the boat, and the members **24**, **36**, **28** on the opposite side of the boat, a transverse tie bolt (or an equivalent type fastener) **38** extends through all three members and secures them together. The transversely curving bight **18** and the upwardly curving portions **34**, **36** of the members **30**, **32** help provide the appearance of a "bow" at the forward end of the boat.

The upwardly turned forward portions **34**, **36** of the lower side members **30**, **32** constitute vertical ties between the two frame parts **12**, **14** at the forward or bow end of the boat. Vertically extending tension members, shown in the form of wires **40**, **42**, are interconnected between the vertically spaced end portions of the paired members **26**, **30** and **28**, **32** at the stern end of the boat. During assembly the inflated tube **10** is sandwiched between frame parts **12**, **14** and then the vertical ties **40**, **42** are applied and tightened so that the tube **10** is tightly held or clamped between the frame parts **12**, **14**.

The sail assembly is supported by a pair of crossties **46**, **48**, shown in the form of wood beams, e.g. 2 inch by 3 inch material. The lower longitudinal members **30**, **32** extend through parallel openings or passageways formed in member **48**. Member **46** is spaced vertically above member **48** and also includes drilled passageways for receiving the forward end portions of frame members **26**, **28**. Screws, pins, or merely a tight frictional fit, may be used for fixing the beams **46**, **48** in position relative to the frame members **26**, **28** and **30**, **32**.

By way of typical and therefore nonlimitive example, a single upper crosstie **50** may be provided at the stern of the boat to support a rudder **52**. The crosstie **50** is essentially identical to crosstie **46** and is secured to the members **26**, **28** in the same manner. Rubber or plastic tips **54** may be provided at each free end of each piece of tubing **26**, **28**, **30**, **32**.

The sail assembly **16** is shown to comprise a mast **56**, a main sail **58**, a jib sail **60**, and a support and control arm **62** for sail **58**. The jib sail **60** includes a tie **64** by which it is secured in place by being tied to frame part **20**. The mast **56** comprises a lower portion **66** which extends through aligned vertical openings formed in the crossties **46**, **48**. Here again, bolts, screws, cross pins, or merely a tight frictional fit, are employed for holding the lower post portions **66** fixed to relative to the crossties **46**, **48**. The lower portions **66** of the mast **56** depends below the crosstie **48** and supports at its lower end a stabilizer panel or centerboard **68**, shown in the form of a trapezoidal panel **68**. Panel **68** is located substantially in the longitudinal center plane of the boat.

The upper portion of mast part **66** projects upwardly above crosstie **46** and includes joint means **67** at its upper end for receiving the lower end portion of the mast section **68** to which the sails **58**, **60** are secured. The joint **67** between mast

portions **66**, **68** may be of a type which permits no rotation between parts **66** and **68**. Arm **62** is not connected to the mast, and the sail fabric forms a hinge between it and the mast part **68**. Preferably, the upper portion **68** of the mast **56** is of sectional construction so that it can be dismantled into pieces which are individually no longer than the longest component of the frame.

The rudder **56** is shown to comprise a post **70** having a vertical portion which depends below crosstie **50** and a horizontal handle portion **72** which curves inwardly of the tube **10** from above crosstie **50**. A rudder panel **74** is carried at the lower end of post **70**, in position to lay in the water below the tube **10**. The post **70** extends through a vertical opening in crossties **50**, and is rotatable in such vertical opening.

As best shown by FIG. **2**, the relative spacing of the upwardly turning forward portions **34**, **36** of frame members **30**, **32**, and the lower portion **66** of the mast **56**, is such that the forward arcuate portion of the tube **10** is firmly secured between these members. The mast part **66** contacts, or is contiguous to, a radially inner surface portion of tube **10**, and the frame parts **34**, **36** contact or are contiguous to radially outer surface portions of tube **10** which are annularly spaced outwardly from and on opposite sides of radial line on which post **66** lies. At the stern of the boat the rudder post **70** contacts or is contiguous to a radially outer surface portion of the tube **10**. Thus, the tube **10** is vertically trapped between the upper and lower frame parts **12**, **14**, and is horizontally trapped between the vertical tubing members **34**, **36**, **66** and **70**.

FIGS. **4** and **5** relate to a modified form of sail boat which is adapted for use on ice, i.e. it is an iceboat.

In this embodiment a second lower crosstie **76** is provided at the stern of the boat. First and second skate supports **78** and **80** are bolted to the crossties **48**, **76** in a crossing fashion. In other words, support **78** extends diagonally across the boat from one end of the lower rear crosstie **76** to the opposite end of the lower front crosstie **48**. Skate support **80** extends from the opposite end of lower rear crosstie **76** back across to the second end of the front lower crosstie **48**. A single vertical bolt **82** may be used for securing the supports **78**, **80** to the crossties **48**, **78** at the four points where such supports **78**, **80** underlie the end portions of the crossties **48**, **76**. Also, a vertical bolt **84** may be used to secure the supports **78**, **80** together where they cross below the inflated body **10** of the boat.

As best shown by FIG. **5**, each support **78**, **80** may be a length of pipe having an elbow fitting **86** at its forward end from which depends a short nipple **88** which is secured to a skate blade **90**.

In this form of the invention the rudder **77** is replaced by a rotatable rear skate **92**. The remaining portions of the boat remain unchanged from what is shown in FIGS. **1–3** in connection with a water boat. The rear skate **92** is located at the end of a vertical control shaft which extends through aligned vertical openings provided in the rear crossties **50**, **76**, and such support post includes a control handle **54** at its upper end.

In both forms of the invention a plywood board or the like can be slid sideways into a position between the upper surfaces of lower frame members **30**, **32** and the lower surface of the tube **10**, to serve as a bottom. If necessary, the rear portion of the centerboard or stabilizer **68** could be extended upwardly and connected to such board to provide rear support for the centerboard **68**. This could be simply done by cutting an opening or notch in the floorboard and having the upwardly extending rear portion of the centerboard **68** include a tongue which fits into such opening or notch.

What is claimed is:

1. Apparatus for use with an inflated annular tubular ring to form a sail boat, comprising:

a frame including upper rigid frame means positionable atop a horizontally disposed inflated annular tubular ring, said upper frame means comprising a pair of laterally spaced side members;

rigid frame means positionable below said tubular ring, said lower frame means also comprising a pair of laterally spaced side members;

tie means interconnectable vertically between said upper and lower frame means for drawing such frame means together and into tight engagement with said tubular ring;

a sail assembly including a mast, means on said frame for supporting the mast in a vertical position relative to the horizontal tubular ring, said means comprising an upper crosstie member extending laterally between and interconnecting the two upper side members, and a lower crosstie member extending laterally between and interconnecting the two lower side members at a position substantially vertically below said upper crosstie member, with said mast extending vertically between both of said crosstie members and being connected to each of them; and

a sail securable to said mast.

2. Apparatus according to claim **1**, further comprising a rudder assembly including a rudder post, a control handle at one end of said post and a rudder member at the opposite end of said post; means on said frame rearwardly of said mast for supporting the rudder post in a generally vertical position relative to the horizontal tubular ring with the control handle disposed upwardly and the rudder member disposed downwardly.

3. Apparatus according to claim **2**, wherein said mast includes a lower portion which depends from said frame, vertically below said tubular ring, and said apparatus further includes stabilizer panel means positionable on the lower portion of said mast.

4. Apparatus according to claim **1**, wherein each lower side member has an upwardly turned forward portion which extends upwardly to the upper side member on its side of the said boat, to constitute at least a portion of said vertical tie means, and the apparatus also includes means for connecting said upwardly turned portions to the upper side members where they meet.

5. Apparatus according to claim **4**, wherein the mast is located between the two upper side members and rearwardly of the upwardly turned forward portions of the lower side members, and the mast and said upper turned forward portions are spaced relative to each other and to the inflated ring such that an arcuate portion of the ring is disposed forwardly of the mast, with a rear surface portion of said ring being contiguous the mast, and with forward surface portions of the ring being contiguous the two upwardly turned forward portions of the lower side members.

6. Apparatus according to claim **4**, wherein said vertical tie means include tension members interconnected vertically between the rearward portions of the upper and lower frame means.

7. Apparatus according to claim **1**, further comprising skate support members secured to the lower frame means and having forward end portions, and ice skate means at the forward end of each such support.

8. Apparatus according to claim **7**, further comprising a rear skate assembly including a vertical post, a control handle at one end of said post and a skate at the opposite end of said post; means on said frame rearwardly of the mast for supporting the skate post in a generally vertical position relative to the horizontal tubular ring, with the control handle disposed upwardly and the skate disposed downwardly.

9. Apparatus according to claim **7**, wherein said skate supports are elongated pieces of tubing, commencing at the opposite rear corners of the boat and each extending diagonally across the boat to the opposite front corner of the boat and then forwardly therefrom to a position forwardly of the boat.