United States Patent [19]

Scholle

[11] **3,902,441**

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[54] **SAILBOAT HAVING RETRACTABLE AND SELF-EJECTABLE HYDRAULIC CONTROLS**

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[51] **Int. Cl.²** **B63B 41/00;** B63H 25/06

[58] **Field of Search** 114/127, 130, 132, 138, 114/129, 162, 165, 167, 39

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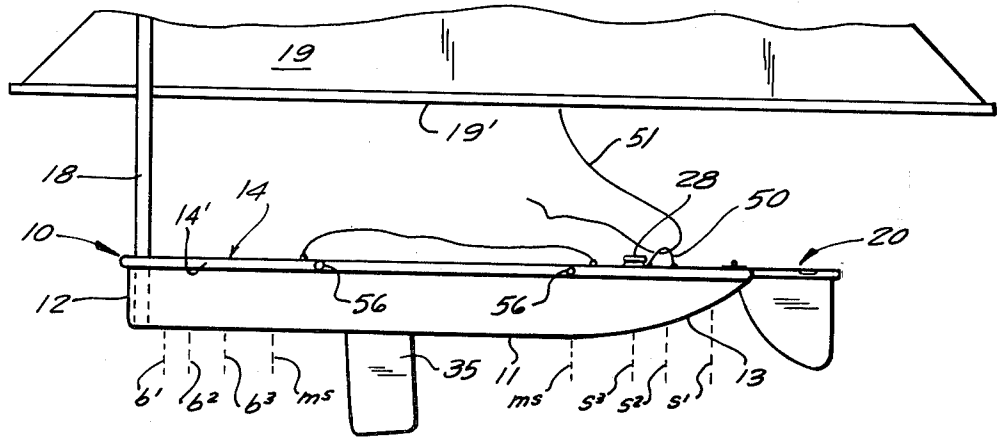
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Attorney, Agent, or Firm—Howard E. Thompson, Jr.

[57] **ABSTRACT**

A small lightweight sailboat enabling it to be readily transported in passenger vehicles such as station wagons and the like is provided with hydraulic controls integrally and movably coupled to the hull of the sailboat. The hydraulic controls comprise rudder and centerboard assemblages, each of which are pivotally coupled to the hull of the sailboat in a manner enabling them to be retracted and self-ejected when maneuvering the boat through shallow waters or over submerged obstacles. Due to the manner in which these hydraulic control assemblages are pivotally coupled to the hull of the sailboat, they can be fully retracted within the sailboat hull and onto the deck of the sailboat and secured in their fully retracted positions for storage when the sailboat is not in use or when preparing the sailboat for overland transport. Retraction and storage of the rudder assemblage is achieved by pivotally mounting the rudder at the stern of the sailboat in a manner which permits the rudder to be rotated onto and laid flat upon the deck. Retraction and storage of the centerboard assemblage is achieved by pivotally mounting a centerboard within a removable centerboard trunk in a manner which permits the centerboard to be locked within the centerboard trunk and released therefrom by controls housed within the trunk.

In sizes up to about eight feet in length the boat will comprise a unitary hull. For ease of transport and storage, however, longer boats can comprise bow and stern sections joined together at transverse bulkheads. In such event one hydraulic control is in each section; and the two sections are preferably hingedly coupled together and provided with integrally mounted and hingedly coupled members for stiffening the extended hull sections.

18 Claims, 14 Drawing Figures



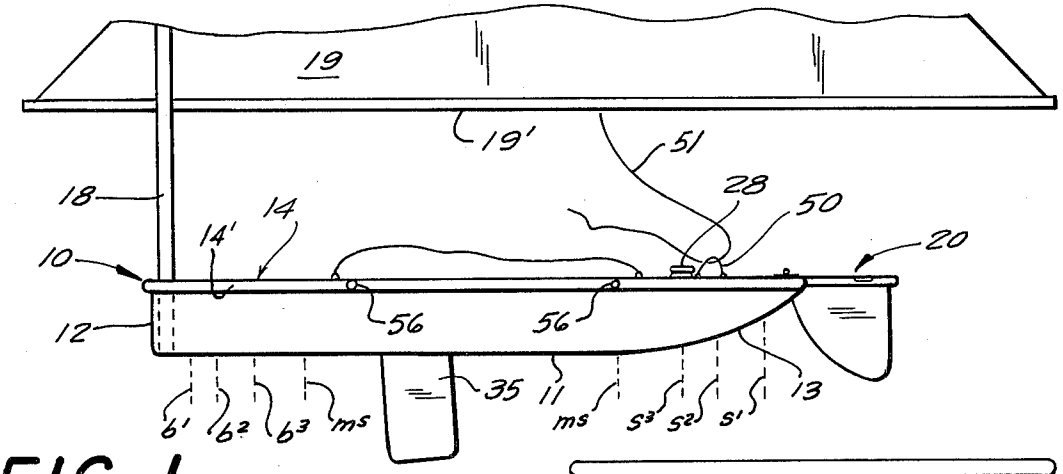


FIG. 1

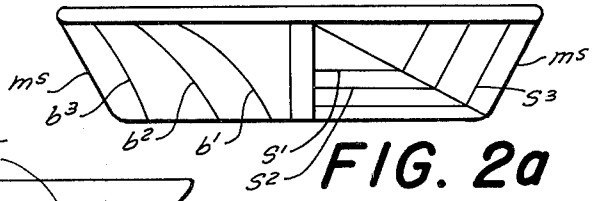


FIG. 2a

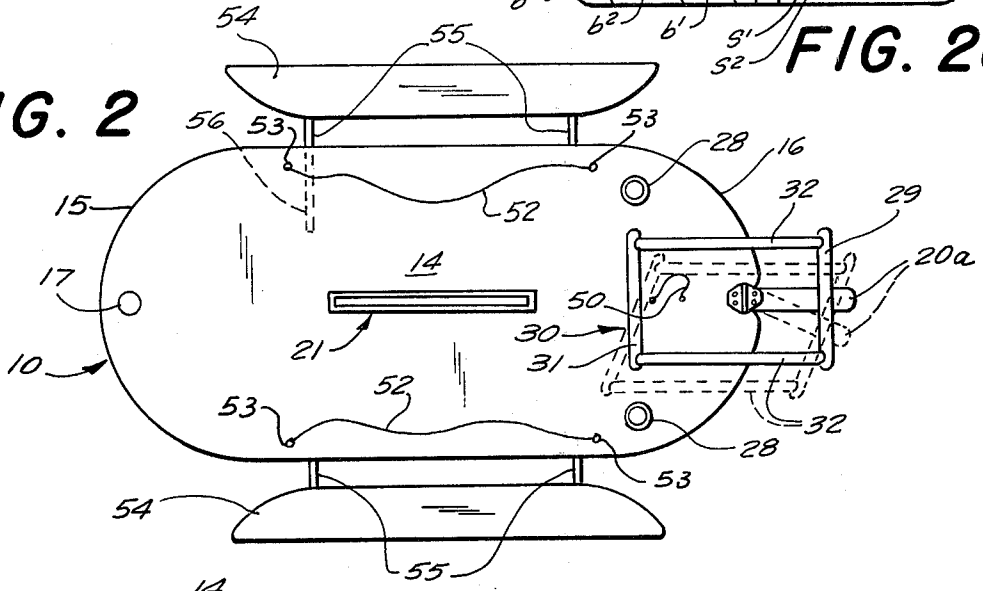


FIG. 2

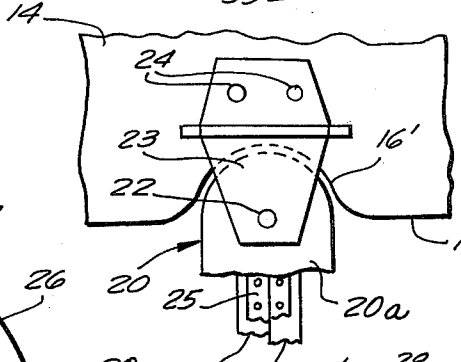
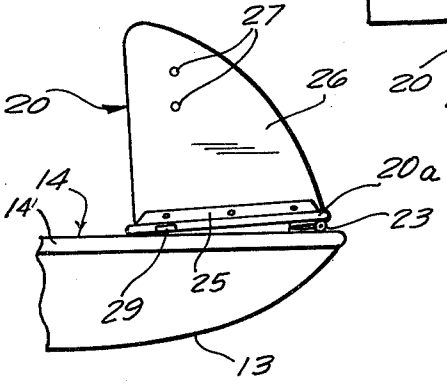


FIG. 3

FIG. 4



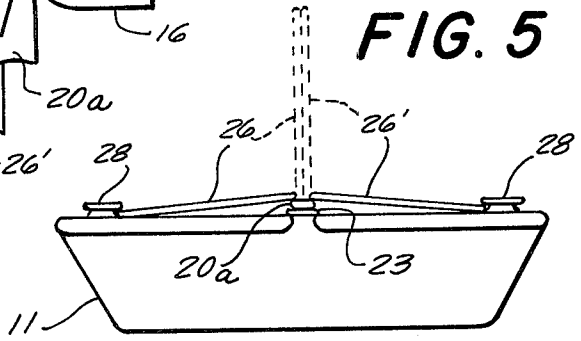


FIG. 5

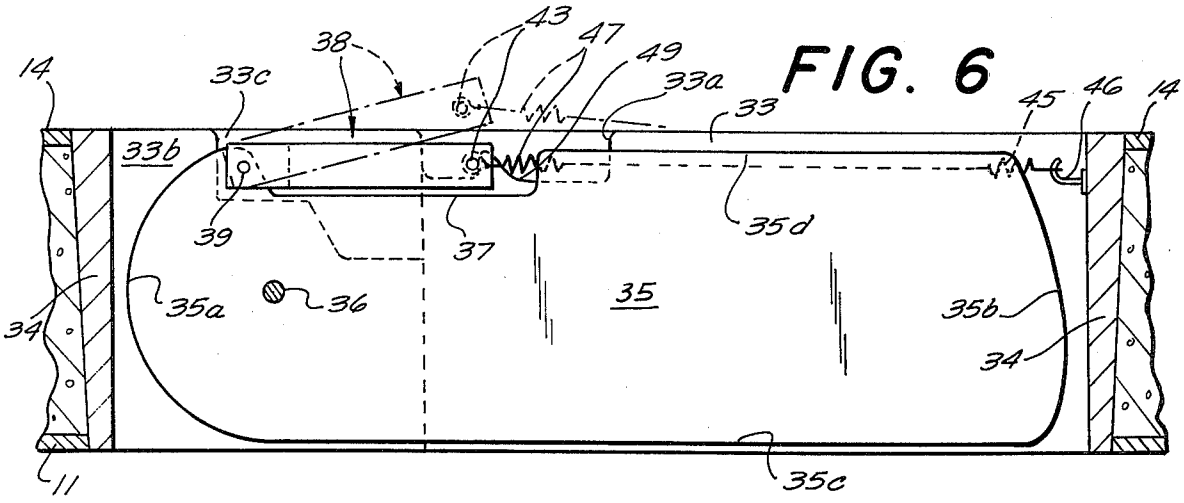


FIG. 6

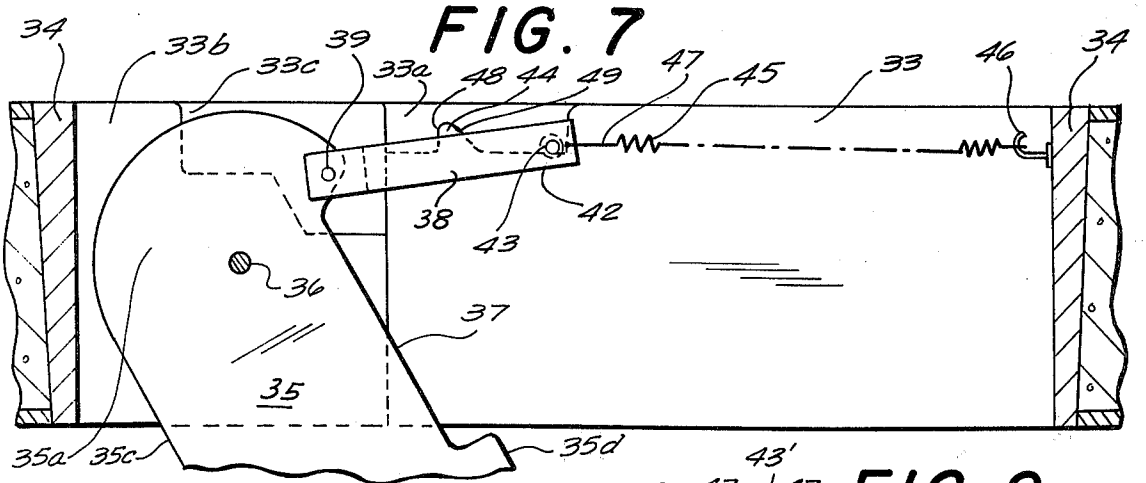


FIG. 7

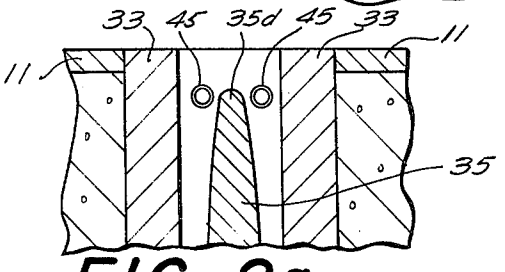


FIG. 9a

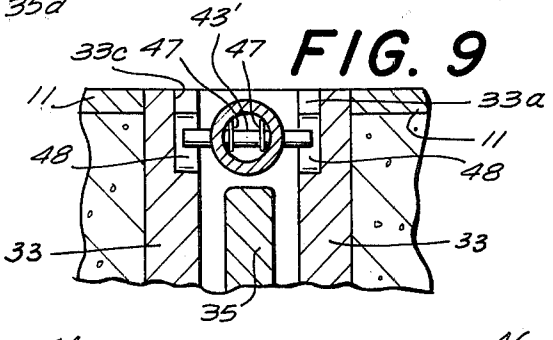


FIG. 9

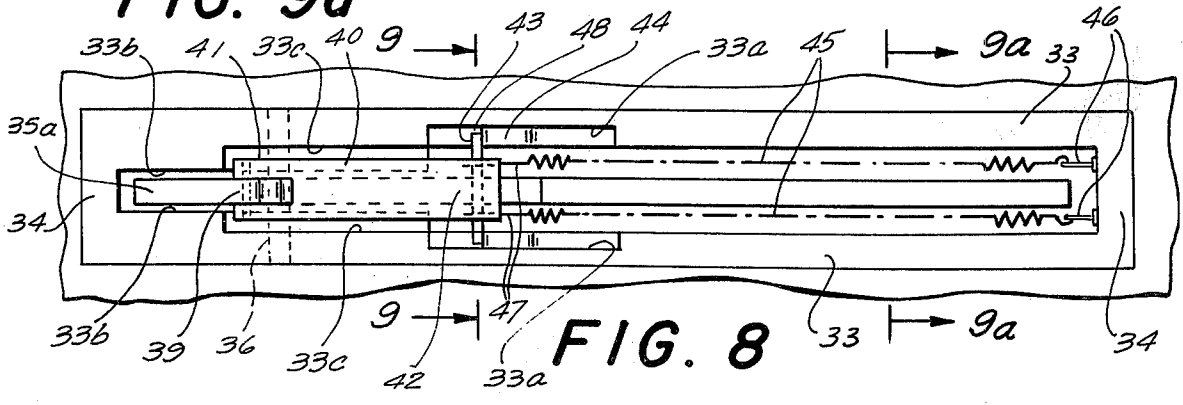


FIG. 8

FIG. 10

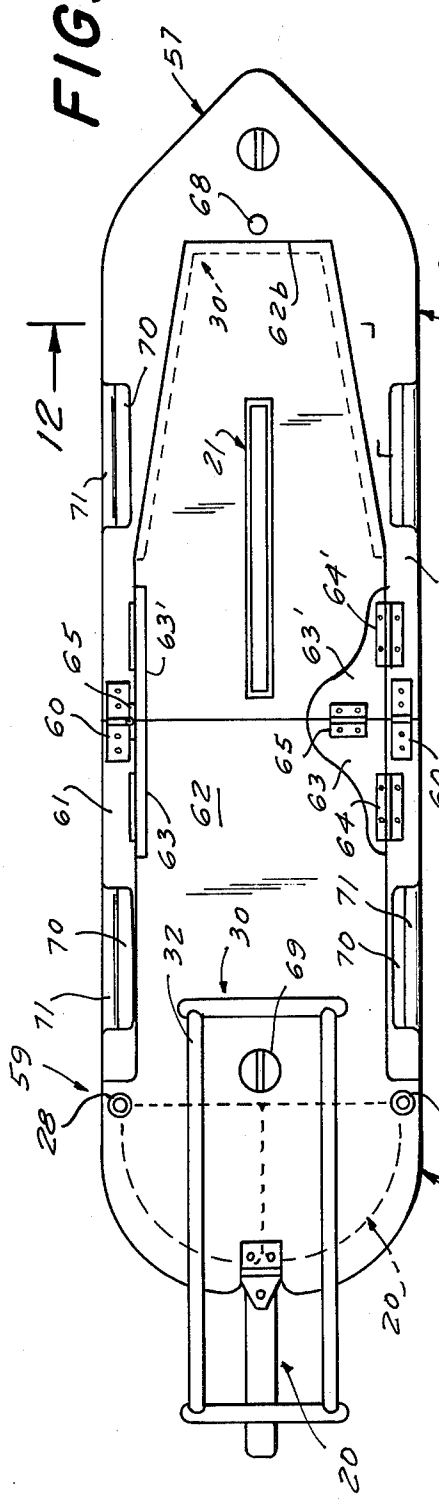


FIG. 11

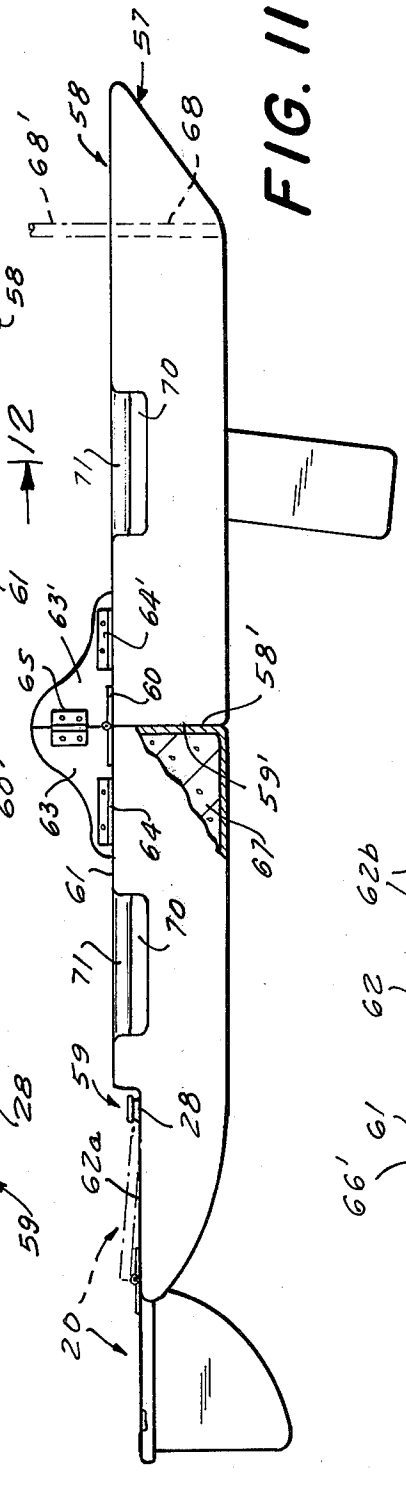
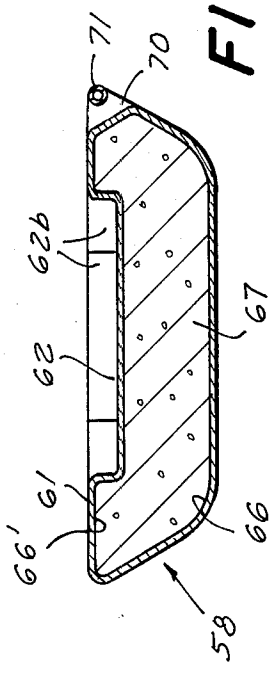


FIG. 12



SAILBOAT HAVING RETRACTABLE AND SELF-EJECTABLE HYDRAULIC CONTROLS

This invention relates to small, lightweight sailboats having integral therewith pivotally mounted retractable and self-ejectable hydraulic controls.

The sailboats are of a size and weight enabling them to be transported overland in passenger vehicles such as station wagons. Boats up to about eight feet in length can have unitary hulls but longer boats preferably comprise separate bow and stern sections joined at transverse central bulkheads. Such separate sections can be joined in various ways; but consistent with the integral mounting of the hydraulic controls, they are preferably pivotally joined and equipped with integral foldable stiffening means of the type shown in my prior U.S. Pat. No. 3,724,011, the disclosure of which is hereby made part of the present application.

The hydraulic controls comprise rudder and centerboard assemblages pivotally coupled to the hull of the sailboat so that they are an integral part of the boat and the pivotal mounting of the hydraulic controls permits the boat to be sailed in shallow waters or over submerged obstacles without endangering the boat, its user, or the hydraulic controls. The manner in which these assemblages are pivotally mounted also permits them to be retracted and secured to the sailboat hull when not in use without the need for any tools or supplemental equipment.

Retraction, self-ejection and storage of the rudder assemblage is achieved by pivotally mounting a rudder arm carrying a rudder blade at the stern of the boat so that the entire assemblage is integral with the boat and can be pivotally rotated toward and away from the bow of the boat in general alignment with its longitudinal axis. Means are also provided for compactly collapsing the rudder blade onto the boat deck and securing it there when it is not being used.

Retraction, self-ejection and storage of the centerboard assemblage is achieved by pivotally mounting the centerboard within a centerboard trunk which extends through and is detachably supported in the boat hull. The centerboard pivot extends completely through the centerboard trunk for easy access when the centerboard trunk is detached from the hull. A tensioning linkage is provided to maintain the centerboard in its operative position when in use, and a rigid element of this linkage provides means for locking the centerboard in the retracted position.

Since these hydraulic control assemblages are retractable and self-ejectable, they enhance the safety of the sailboat as it can readily be sailed over shallow or shoaled bottoms or submerged obstacles without fear of damaging the boat or endangering its user since the rudder and centerboard will freely rotate and retract until the obstacle has been cleared and then return to their normal, operative positions. Furthermore, with the rudder and centerboard fully retracted and secured in their inoperative positions, the sailboat can serve as a surfboard, aquaplane, raft, and the like.

In further embodiments the sailboat can be provided with outrigger assemblages to impart greater stability particularly when the operator is seated rather than lying on the deck. Also in the small, unitary hull, adaptation a unique mounting of the mast at the forward extremity of the bow provided a maximum of deck space while supporting a sail of substantial size.

The novel features of the invention will become more apparent from the ensuing description when considered together with the accompanying drawing wherein the several FIGURES illustrate various embodiments thereof and wherein:

FIG. 1 is a side view of a sailboat of the invention with the hydraulic rudder and centerboard assemblages shown in operative position;

FIG. 2 is a plan view of the sailboat shown in FIG. 1 with the mast removed and illustrating a tiller device for controlling the rudder, and showing optional outriggers in place;

FIG. 2*a* is a diagrammatical view of the hull profiles at various points longitudinally of the boat shown in FIGS. 1 and 2;

FIG. 3 is a fragmentary plan view of the rudder assemblage of the invention;

FIG. 4 is a fragmentary side view of the rudder assemblage of the invention in partially retracted position;

FIG. 5 is an end view of the rudder assemblage shown in FIG. 4, but in fully collapsed or stored position;

FIGS. 6 and 7 are side views with a portion of the hull of the sailboat eliminated to illustrate details of the centerboard assemblage of the invention in stored and operative positions, respectively;

FIG. 8 is a plan view of the centerboard assemblage shown in FIGS. 6 and 7;

FIGS. 9 and 9*a* are views taken substantially on the lines 9—9 and 9*a*—9*a* of FIG. 8.

FIG. 10 is a plan view of a boat incorporating the hydraulic controls in the bow and stern sections of a two-part hull;

FIG. 11 is a side elevation of the boat shown in FIG. 11 with parts of the structure broken away and in sections; and

FIG. 12 is a sectional view substantially on the broken line 12—12 of FIG. 10.

As shown in FIGS. 1 and 2 of the drawing, a small sailboat 10 in accordance with the present invention comprises a hull 11 having a bow end 12 and a stern end 13 of quite different contours and a generally flat deck portion 14 having bow end 15 and stern end 16 of generally similar rounded contour. A well 17 in the bow end of the deck 14 and extending the full depth of the hull at the bow end 12 thereof provides support for a removable mast 18 and sail 19.

The stern end 16 of the deck has a central notch or depression 16′ for receiving a rudder assemblage 29 as hereinafter described; and centrally of the deck 14 and extending the full depth of the hull 11 is a centerboard well or trunk 21, details of which are more fully hereinafter described.

The mid-section of the hull 11 has a generally flat bottom and angularly disposed sides smoothly joining a stiffening gunwale 14′ extending peripherally of the deck 14. In order to visualize the approximate hull contours at different points between the mid-section and the bow and stern ends 12 and 13 respectively, FIG. 2*a* diagrammatically illustrates the approximate profiles at positions B-1, B-2 and B-3 in the bow section and S-1, S-2 and S-3 in the stern section having reference to the location of these indicia in FIG. 1 of the drawing.

The hull and deck assemblage should be of lightweight construction to provide maximum flotation. According to older construction methods, the hull could be fashioned from lightweight wood suitably sealed

with coatings of paint of lacquer or combinations of a fabric skin with paint or lacquer. The boat lends itself, however, to be fashioned from molded fiber glass with the hull and deck portions being separately molded and peripherally assembled, suitably with a filling of foamed plastic therebetween to provide lightweight flotation characteristics.

The boat is provided wit a unique rudder assemblage **20** having a rudder arm **20***a* pivotally coupled at **22** to a hinge **23** secured as at **24** to the deck **14.** Secured to the rudder arm **20***a* by hinge means **25** are two blades **26, 26'** which collectively form a rudder when arranged in juxtaposition and extended perpendicularly to the rudder arm **21** as shown in FIGS. **1, 3** and **4** and in the dotted line showing in FIG. **5.** The juxtaposed blades **26, 26'** are secured together by magnetic or other fastening means diagrammatically indicated at **27** in FIG. **4** of the drawing.

When in use, the rudder arm **21** projects rearwardly in substantial alignment with the deck **14** with the blade assemblage **26, 26'** extending downwardly as shown in FIGS. **1–3.** When it is desired to store or transport the boat, the rudder assemblage **20** is pivoted onto the deck **14** at hinge **23** as shown in FIGS. **4** and **5** and the fastening means **27** is released so that the blades **26, 26'** can be separately folded onto the deck **14** as shown in FIG. **5** and secured in this position by adjustable clamps **28.** The folding of the rudder assemblage onto the deck **14** in this manner not only provides a unitary assemblage for transport and storage purposes but also permits the boat to be used for other purposes such as a raft, aquaplane or the like.

The rudder assemblage **20** includes a cross member **29** at the outer end of the rudder arm **20***a* which extends peripherally to the rudder arm **20***a* and permits an individual lying on the deck **14** to easily manipulate the rudder assemblage by means of the feet for steering the boat. It will be noted in this connection that the pivot mounting **22** of the rudder arm **20***a* is in substantial alignment with the edge **16** of the boat stern so that wide swinging movement of the rudder arm **20***a* about the pivot **22** is possible in maneuvering the boat.

For steering when operating the boat from a seated position a control rig **30** is employed having a member **31** corresponding in length to the cross member **29** and pivotally joined at its ends to elongated members **32** having their free ends detachably pivoted to the cross member **29** forming a parallelogram as shown in FIG. **2** of the drawing. By grasping the member **31** and twisting it to vary the orientation of its longitudinal axis this imparts steering movement to the rudder assemblage through the cross member **29** as diagrammatically indicated in the dotted line showing of FIG. **2.** It will be understood, however, that various other means could be provided for operating the rudder assemblage **20** from a seated position such for example as a short tiller arm detachably coupled to the rudder arm **21**; but the rig **30** has the advantage of being easily operated without the need of shifting position on the deck **14,** and without interfereing with a line **51** passing through traveler **50** for control of the sail boom **19'** as hereinafter described.

As shown in FIG. **1** of the drawing, the rudder assemblage **20** extends substantially below the bottom of the hull **11** permitting the hull to negotiate much shallower water than the rudder assemblage **20.** Here the pivot mounting of the rudder assemblage **20** provides a real advantage as the entire assemblage **20** can simply swing about the hinge **23** so that the rudder blades **26, 26'** can ride over any bottom obstruction that the hull bottom **11** has cleared and can return again to the fully extended position when reentering deeper water. In this connection, the couplings of the elongated members **32** with the cross member **29** should be of a sufficiently flexible nature to provide no interference with such upward tilting of the rudder assemblage; and if desired, these couplings can be of a nature to permit rotation of the elongated members **32** about the axis of the cross member **29** so that the rig **30** can be left coupled with the rudder assemblage as the rudder assemblage is moved onto the deck for storage as shown in FIGS. **4** and **5.**

The centerboard well or trunk **21** comprises a structure having rigid side walls **33** and tapered end walls **34** extending from the deck **14** to the hull **11** to provide an elongated opening through the boat in which the centerboard **35** is mounted on a pivot **36** extending through the side walls **33.** The mounting end **35***a* of the centerboard has a substantially circular curvature about the pivot **36** so that the centerboard **35** can be moved freely from a stowed position as shown in FIG. **6** to an extended or operative position as shown in FIG. **7.** The opposed end **35***b* of the centerboard is also suitably curved to permit free movement into and out of the centerboard well **21.** The tapered contour of the end walls **34** facilitate firm setting of the centerboard trunk **21** in the boat hull while permitting easy removal of the centerboard trunk for servicing or repair. Thus, for example, after removal of the centerboard trunk from the boat hull pivot **36** which extends through the side walls **33** thereof can readily be removed to permit replacement of a damaged centerboard.

It will be noted that the lower edge **35***c* of the centerboard as shown in FIG. **6,** which becomes the lead edge in the operative position shown in FIG. **7** is wholly within the centerboard trunk, as is the following edge **35***d* when the centerboard is in the stored position. The upper edge **35***d* has an elongated cutout **37** adjacent the mounting end **35***a* for receiving a control assemblage **38** movably secured to the centerboard at pivot **39.**

The assemblage **38** comprises a rigid arm **40** suitably having a forked end **41** for engagement with the pivot **39** and having at the other end portion **42** thereof protruding transverse studs **43** movable in lateral offsets **33***a* in the side walls **33** of the centerboard trunk for locking engagement with stopping blocks **44** within said offsets. Also secured to the end portion **42** is elongated tensioning means **45** which is mounted as at **46** to the opposed end wall **34** as shown in FIGS. **9, 9***a* and **10.** The tensioning means may suitably comprise two coil springs arranged at opposite sides of the trailing edge **35***d* of the stowed centerboard. If the rigid member **40** has an end **42** of tubular construction, and the studs **43** comprise ends of a pin passing through the tubular structure, hook ends **47** of the tensioning means **45** can suitably engage the pin portion **43'** within said tubular structure.

The stopping blocks **44** are contoured at the side adjacent the pivot **38** to form a notch or recess **48** to receive the studs **43** for locking the centerboard assemblage in the fully retracted position shown in FIG. **6.** To release the centerboard from this stored or retracted position, the rigid member **40** is pivotally raised to lift

the studs **43** over the stopping blocks, whereupon the spring element **45** urges the rigid member **40** to the right as shown in FIGS. **6** and **7** to thereby extend or lower the centerboard **35.** Note that the rigid member **40** can freely move between the stopping blocks **44** once the studs have been moved past the stopping blocks as above-described.

In order that the stopping blocks **44** provide no interference with raising or retracting movement of the centerboard **35** as when moving into shallow water or hitting a submerged object, the opposed sides of the stopping blocks **44** are preferably provided with inclined surfaces **49** which permit the studs **43** to ride past the stopping blocks **44** so that the centerboard can move completely into the centerboard trunk **21,** and yet be free to move again to the extended or operative position as the boat moves into deeper water or clears the submerged object which raised the centerboard. In most instances passing through shallow waters will not raise the centerboard sufficiently to carry the studs **43** to locking engagement with the recesses **48.** If this should happen, however, the centerboard can be quickly lowered, when reentering deeper water, by merely raising the rigid member **40** to disengage the studs **43** from the recess **48.**

The tensioning means **45** can be coil spring, elastic member of the appropriate yieldable tension, or any other appropriate means for providing the desired force to yieldably project the centerboard **35** to operative position while at the same time being sufficiently extensible to permit easy engagement of the studs **43** with the recess **48** when the centerboard is to be locked in the retracted position. Even in instances in which the weight of the centerboard **35** may be sufficient to assure its proper lowering by gravity action, the tensioning means **45** provides the further advantage of supporting the rigid member **40** within the centerboard trunk at all times except when it is being intentionally lifted to engage or disengage the locking recess **48** provided by the stopping blocks **44.**

Another detail of the centerboard trunk which should be noted is that the side walls **33** in the area of general alignment with pivot **36** are quite closely spaced as seen at **33***b* to provide support for the mounting end **35***a* of the centerboard against lateral stresses when the centerboard is extended and in use. On the other hand, throughout the major portion of the centerboard trunk the side walls **33** are more widely spaced from each other and from the centerboard **35** so that possible entanglement with seaweed and the like will not interfere with raising of the centerboard. In the closely spaced wall portions **33***b*, appropriate cutouts **33***c* are provided to receive and permit grasping of the rigid member **40.**

The boat as shown in FIGS. **1** and **2** is provided at the rear portion of the deck **14** with a traveler **50** through which a line **51** extending to the sail boom **19'** can be passed to facilitate manipulation of the sail **19** when the operator is lying on the deck. Safety ropes **52** are also preferably secured at spaced points **53** at opposed sides of the deck **14.** Also, for greater stability, particularly when the boat is to be operated from a seated position, outrigger floats **54** can be provided suitably detachably mounted by means of rods **55** extending into wells or sockets **56** in the side gunwales of the boat.

While the description thus far has been related to boats having a relatively small unitary hull, it is to be understood that the novel rudder and centerboard assemblages can be also effectively utilized in longer boats in which ease of transport and storage requires a sectional construction. To illustrate such adaptation of the invention, FIGS. **10–12** show a sailboat **57** comprising a bow section **58** and a stern section **59** having transverse bulk heads **58'**, **59'** which are joined together by hinges **60** secured to a peripheral deck portion **61.** The main or central deck portion **62** is substantially lower than the peripheral deck portion **61** as clearly seen in FIGS. **11** and **12**; and for reasons more fully hereinafter described, the portion **62***a* extends to the full width of the boat at the stern portion thereof and is specially contoured as seen at **62***b* and terminates short of the bow end of the boat.

The stern section **59** is provided with a rudder assemblage **20,** the components and mounting of which correspond with the structure previously described in connection with FIGS. **1–5** and no repitition of the detailed description is considered necessary at this point. Note, however, that as the rudder assemblage is stowed on the deck portion **62***a* as indicated in the dotted line position in FIGS. **10** and **11,** it does not protrude above the peripheral deck **61** and hence does not interfere with a folding together of the boat sections **58, 59.** The steering rig **30** having somewhat longer members **32** than shown in FIG. **2** of the drawing can be stowed peripherally of the deck portion **62***b* as shown in FIGS. **10** and **12,** again without protruding above the peripheral deck portion **61.**

The bow section **58** is provided with a centerboard well or trunk **21** in all respects similar to that described in connection with FIGS. **6–9** of the drawing and as with the earlier described construction, the entire centerboard assemblage is below the level of the main or central deck **62.**

Various means can be employed for supporting the boat sections **58, 59** in the extended or operative position but one preferred means of accomplishing this is to employ the hingedly coupled stiffening means disclosed in my prior U.S. Pat. No. **3,724,011.** This type stiffening means comprises pairs of essentially triangular members **63, 63'** hinged as at **64, 64'** to the peripheral deck **61** and hinged together as at **65** by hinge means having a pivot axis in common alignment with the axes of the hinges **60.** When aligned with the deck **61** as shown in FIG. **10** of the drawing the triangular parts **63, 63'** can fold readily with the boat sections. When raised to the elevated position shown in FIG. **11,** however, the triangular members **63, 63'** provide a most effective brace and stiffening means for the extended boat sections **58, 59.** It will be noted in this connection that the lower level of the central deck portion **62** automatically provides the necessary clearance for folding the brace members **63, 63'** to a position of alignment with the peripheral deck **61.**

With the sectional boat as shown in FIGS. **10–12,** as with the smaller boat previously described, various type constructions can be employed. As diagrammatically shown in FIGS. **11** and **12,** however, the deck portion **61, 62** and the hull portions **66, 66'** can suitably be fashioned from molded fiber glass or the like and peripherally secured together with a suitable filling **67** of foamed plastic or the like therebetween. With any type of construction a suitably reenforced well **68** will be provided in the bow section to detachably receive a mast **68'**; and the boat sections can be provided with

other structural details adding to their utility. For example, the stern section **59** should include a traveler **69** suitably recessed in the deck portion **62***a* and if desired, the boat sections can be provided with elongated cutouts **70** providing rails **71** to be grasped by the occupants while sailing in rough water or as an aid in boarding the boat from the water. As clearly seen in FIG. **12** of the drawing, this safety feature can be provided without in any way interfering with the folding together of the boat sections **58, 59.**

Even with the foldable construction as shown in FIGS. **10–12,** it will be understood that we are talking of relatively small, lightweight boats which can be easily transported in station wagons and the like and which will inherently be used in areas where shallow water and underwater obstructions may be frequently encountered; and it is considered that the novel rudder and centerboard assemblages provide safety factors equally important for the sectional boat as for the unitary boat structure earlier described.

Various changes and modifications in the novel rudder and centerboard assemblages for sailboats as herein described may occur to those versed in the art and to the extent that such changes and modifications are embraced by the appended claims, it is to be understood that they constitute part of the present invention.

What is claimed is:

1. A lightweight sailboat capable of transport in a station wagon or like vehicle, said sailboat comprising a hull having integrally and movably coupled thereto a rudder assemblage and a centerboard assemblage both characterized as being automatically retractable and self-ejectable when maneuvering the boat over shallow waters or submerged obstacles, and means comprising integral parts of said boat providing, during periods of storage and transport of the boat, for collapsed reorientation or the rudder assemblage on the boat deck and locked retraction of the centerboard assemblage within the hull, said last named means being such as to permit interchange of said rudder and centerboard between the operative and stored positions without detachment from said hull and without the use of any supplementary tools, said rudder assemblage comprising a rudder arm mounted to the boat deck at the stern portion thereof by double pivot means providing both swinging movement of the rudder arm between positions of alignment with and superimposed engagement with said deck, and swinging movement of said rudder arm, when aligned with said deck, about an axis which is substantially perpendicular to said deck, and said rudder arm hingedly supporting a pair of similar rudder blades collectively forming a complete rudder when arranged in juxtaposition and extending perpendicularly to the rudder arm, and the hinge mounting of said rudder blades providing, when said rudder arm is in the retracted position in superimposed engagement with said deck, for the collapsed orientation of said rudder blades in substantial alignment with said deck at opposed sides of the rudder arm.

2. A lightweight sailboat as defined in claim **1** wherein means is provided integrally with said rudder blades for detachably securing the same in juxtaposed, rudder forming position.

3. A lightweight sailboat as defined in claim **1** wherein said means for supporting the rudder assemblage in collapsed position comprises movable clamp means projecting upwardly from the boat deck adapted to engage portions of said rudder blades adjacent the free ends thereof.

4. A lightweight sailboat as defined in claim **1** wherein said rudder arm fits loosely within a notch at the stern of said boat and the axis of the pivot means perpendicular to said boat deck is in substantial alignment with the stern extremity of the boat deck.

5. A lightweight sailboat as defined in claim **1** wherein said rudder arm carries at the end portion remote from the pivot mounting thereof a cross member extending perpendicularly to said rudder arm facilitating control of said rudder as by engagement with the feet of a sailor lying prone upon the boat deck.

6. A lightweight sailboat as defined in claim **5** wherein means is provided at the ends of said cross member for detachably coupling of control means for actuation of the rudder by a sailor sitting on the boat deck.

7. A lightweight sailboat as defined in claim **6** wherein said last named means comprises two elongated rails pivotally joined at one end by a cross member of substantially the same length as the cross member of said rudder arm, and said rails having means at the free ends thereof for detachable engagement with the coupling means at the ends of said rudder arm cross member.

8. A lightweight sailboat as defined in claim **6** wherein said last named means comprises two elongated rails pivotally joined at one end by a cross member of substantially the same length as the cross member of said rudder arm, and said rails having means at the free ends thereof for detachable engagement with the coupling means at the ends of said rudder arm cross member, and said last named means permitting rotation of said rails about the axis of said rudder arm cross member as the rudder assemblage may be pivotally elevated in negotiating shallow waters.

9. A lightweight sailboat as defined in claim **1** wherein both the rudder assemblage and centerboard assemblage are in a small unitary hull, and a vertical well is provided at the forwardmost portion of said hull for detachably mounting a mast and sail assemblage on said hull.

10. A lightweight sailboat as defined in claim **1** wherein both the rudder and centerboard assemblages are in a small unitary hull, said hull having a deck portion with substantially parallel sides and substantially semi-circular bow and stern contours, and the bottom contour of said hull varying from a downwardly curved contour at the stern portion through an angularly sided flat bottomed mid-section and bow section to a vertically disposed extremity at the bow housing and enveloping a vertical well in said hull for detachable mounting of a mast and sail assemblage.

11. A lightweight sailboat as defined in claim **10** wherein means is provided at the side gunwales of the boat for detachably securing outriggers for lending stability to the boat when it is to be operated from a seated position or in strong wind conditions.

12. A lightweight sailboat as defined in claim **10** wherein the boat without the mast and sail assemblage, and with the rudder and centerboard assemblages in retracted, stored position, provides for alternative usage as surfboard, aquaplane or raft.

13. A lightweight sailboat as defined in claim **1** wherein said boat comprises bow and stern sections joined together at transverse bulkheads at substantially

the longitudinal center of said boat, said rudder assemblage being carried by said stern section and said centerboard assemblage being located in said bow section closely adjacent the transverse bulkhead thereof, said bow and stern sections being pivotally joined adjacent the gunwales at peripheral deck portions thereof outlining a coextensive lower deck portion of substantially uniform width throughout the mid-section of said boat, said lower deck portion terminating short of the bow of said boat, and said lower deck portion extending the full width of the stern portion of said boat to accommodate said rudder assemblage when in stored position.

14. A lightweight sailboat as defined in claim **13** wherein said lower deck portion accommodates movable stiffening means comprising pairs of essentially triangular members at opposed sides of said boat having aligned hinges securing the same to said peripheral deck portions at abutting ends of said boat sections, each pair of triangular members having juxtaposed portions thereof pivotally coupled by hinge means having pivot axes in common alignment with the axes of the hinges joining said boat sections, said stiffening means, when oriented in alignment with said peripheral deck portion being foldable with said boat sections, and when disposed perpendicularly to said peripheral deck portion providing rigid support of said boat sections in the extended position.

15. A lightweight sailboat capable of transport in a station wagon or like vehicle, said sailboat comprising a hull having integrally and movably coupled thereto a rudder assemblage and a centerboard assemblage both characterized as being automatically retractable and self-ejectable when maneuvering the boat over shallow waters or submerged obstacles, and means comprising integral parts of said boat providing, during periods of storage and transport of the boat, for collapsed reorientation of the rudder assemblage on the boat deck and locked retraction of the centerboard assemblage within the hull, said last named means being such as to permit interchange of said rudder and centerboard between the operative and stored positions without detachment from said hull and without the use of any supplementary tools, said centerboard assemblage comprising a centerboard trunk extending vertically through and detachably mounted in the boat hull, a centerboard pivoted at the forward portion of said trunk in a manner to permit swinging movement from a stored position completely within said trunk to an operative position wherein the centerboard projects from the hull at variable angles not greater than **90°**, the pivot of said centerboard extending through said trunk for easy access when the trunk is removed from said hull, said centerboard having at its upper edge, in substantial alignment with a perpendicular to the center line thereof passing through said pivot, a cutout providing for the pivotal mounting of a control linkage comprising a short rigid member having one forked end in pivotal engagement with the centerboard and its opposed end in engagement with an elongated tension means extending to the opposite end of said centerboard trunk, and interengageable means on said rigid member and centerboard trunk for supporting said rigid member in a forward, centerboard retracting, position against the action of said tension means.

16. A lightweight sailboat as defined in claim **15** wherein said interengaging means comprises transversely projecting lugs on said rigid member riding in lateral offsets at the upper edge of said centerboard trunk and projecting stop members within and intermediate the ends of said offsets.

17. A lightweight sailboat as defined in claim **16** wherein said stop members have in the upwardly and forwardly disposed portions thereof notches for engagement by said lugs whereby engagement and disengagement is accomplished by pivotally raising said rigid member against the action of said tension means.

18. A lightweight sailboat as defined in claim **16** wherein said stop members have in the upwardly and forwardly disposed portions thereof notches for engagement by said lugs whereby engagement and disengagement is accomplished by pivotally raising said rigid member against the action of said tension means, and the rearwardly oriented portions of said stop members having inclined cam surfaces permitting movement of said lugs past said stop members, thereby facilitating full retraction of said centerboard as needed when negotiating shallow waters.

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