United States Patent [19]

Syfritt

[11] **3,846,858**

[45] **Nov. 12, 1974**

[54] **ASSEMBLY FOR USE IN RECREATIONAL ACTIVITIES**

[76] Inventor: **Harold A. Syfritt,** 1025 Somera Rd., Los Angeles, Calif. 90024

[22] Filed: **Feb. 18, 1972**

[21] Appl. No.: **229,096**

[52] **U.S. Cl.** **9/25,** 114/61

[51] **Int. Cl.** **B63b 7/00**

[58] **Field of Search** ..... 9/2, 1; 114/61, 66.5 F

[56] **References Cited**

UNITED STATES PATENTS

2,745,118	5/1956	Potts et al.	114/61
3,076,204	2/1963	Nowak	9/6
3,414,916	12/1968	Mantin et al.	9/1 T
3,473,502	10/1969	Wittkamp	9/2 A

FOREIGN PATENTS OR APPLICATIONS

853,559	12/1939	France	9/2 R

Primary Examiner—George E. A. Halvosa
Assistant Examiner—Sherman D. Basinger
Attorney, Agent, or Firm—Markva & Smith

[57] **ABSTRACT**

The assembly includes at least two elongated units mounted on a rigid support means. The units are parallel and laterally displaced with respect to each other. At least one of the units is detachably connected to the rigid support means. Each of the units includes a collapsible, elongated container adapted to receive a fluid medium therein and an elongated frame structure having an open configuration to receive the collapsible container. At least one of the containers is adapted to hold either a liquid fluid medium or a gas fluid medium. The basic assembly may be used as a boat on water or a recreational vehicle on land or ice. When the container of the detachably connected unit is separated from the rigid support means, it may be employed in other uses such as a fresh water reservoir, a ballast, a sea anchor, a pitch and roll stabilizer, etc. A further feature of the invention is directed to an assembly having a convertible frame structure and a means for attaching pontoons along two opposing longitudinal sides of the frame structure. The frame structure is convertible between various single hull constructions and various multi-hull constructions.

12 Claims, 12 Drawing Figures

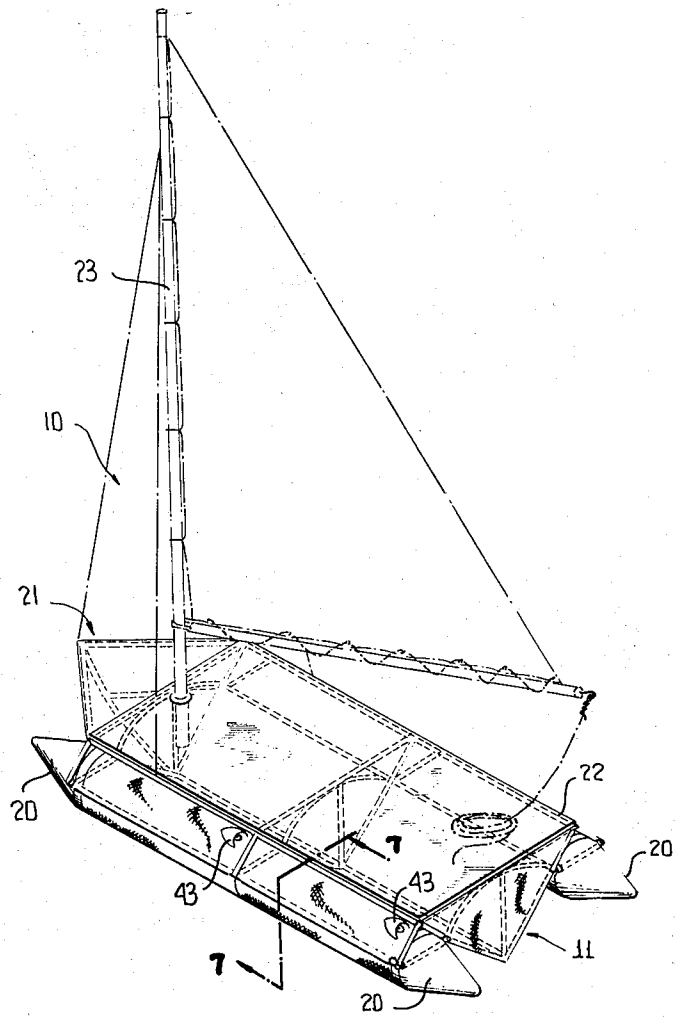
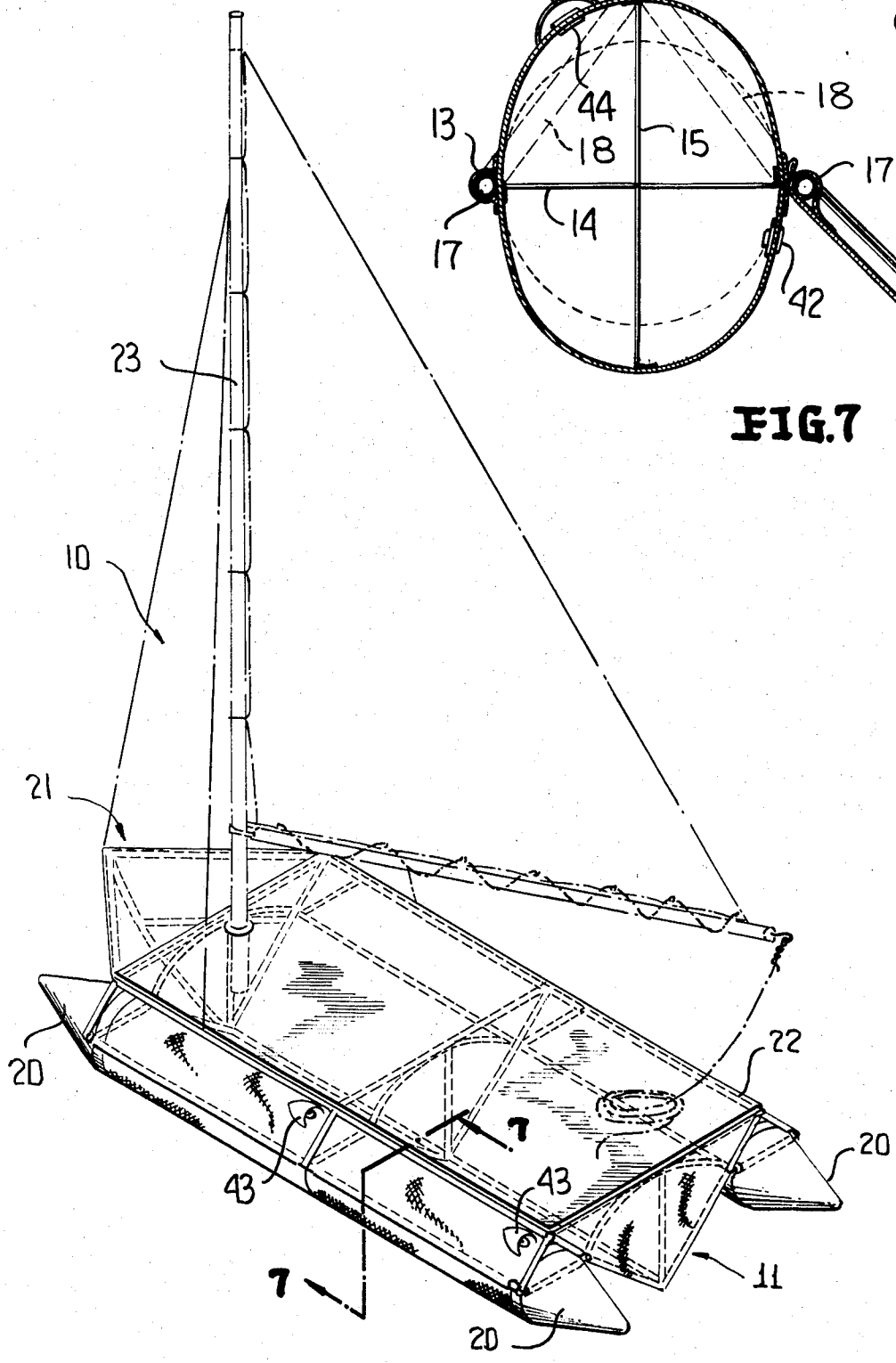
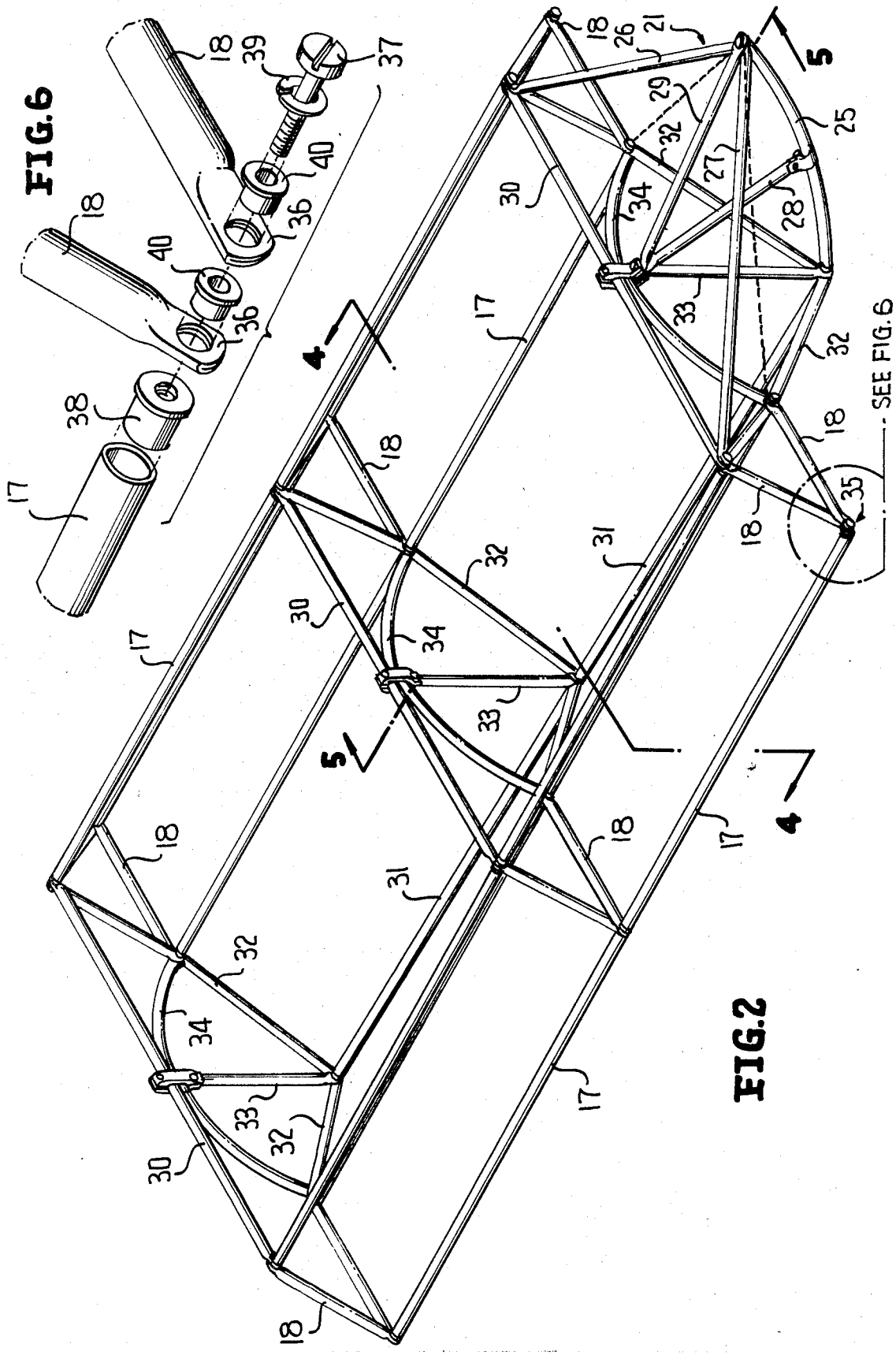


FIG. 1


23
10
21
20
43
7
7
43
22
20
11
20

22
43
13
30
44
18
13
18
15
17
14
17
32
42
45

FIG. 7


FIG.6
FIG.2
SEE FIG.6
4
5
17
18
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40

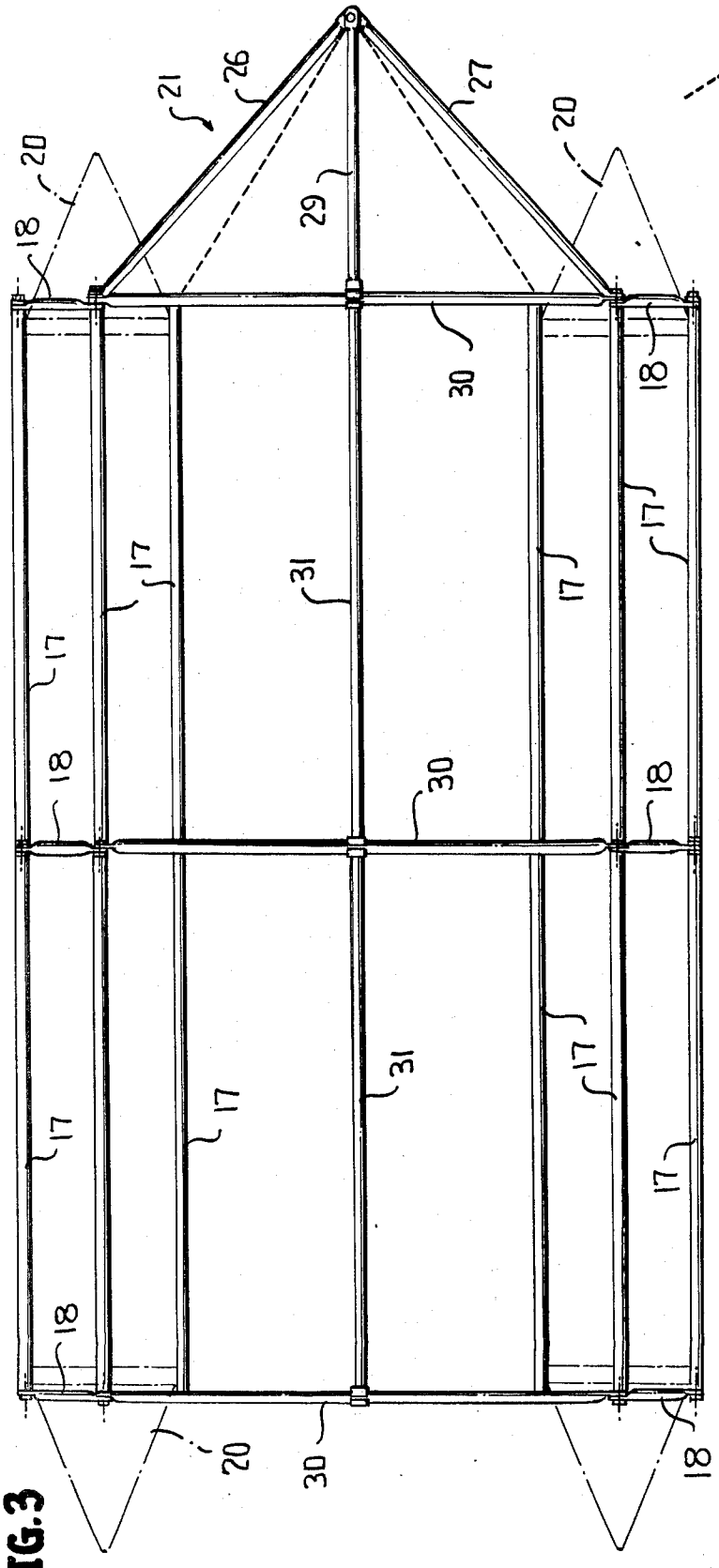


FIG.3

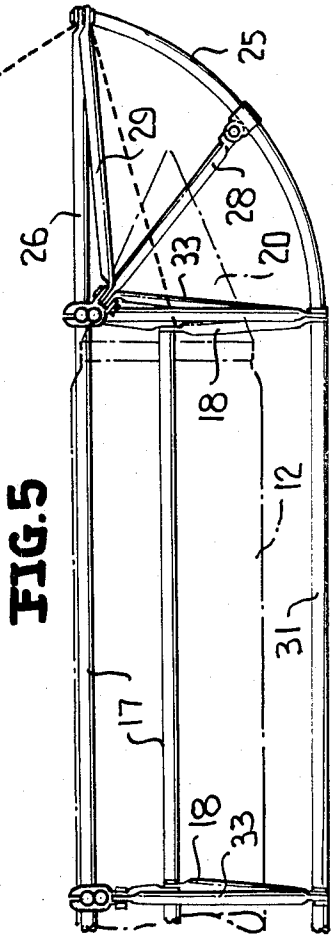


FIG.5

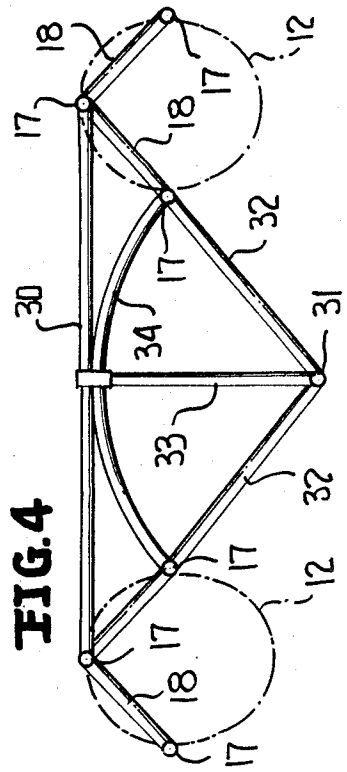


FIG.4

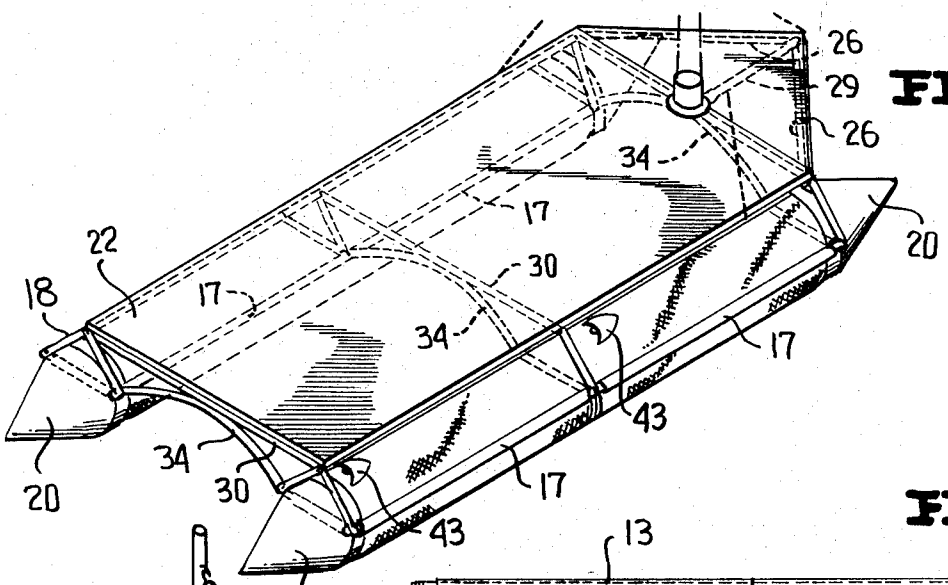


FIG.8

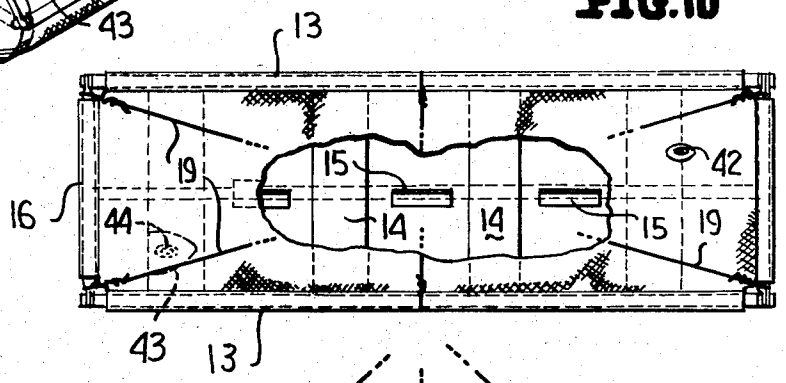


FIG.10



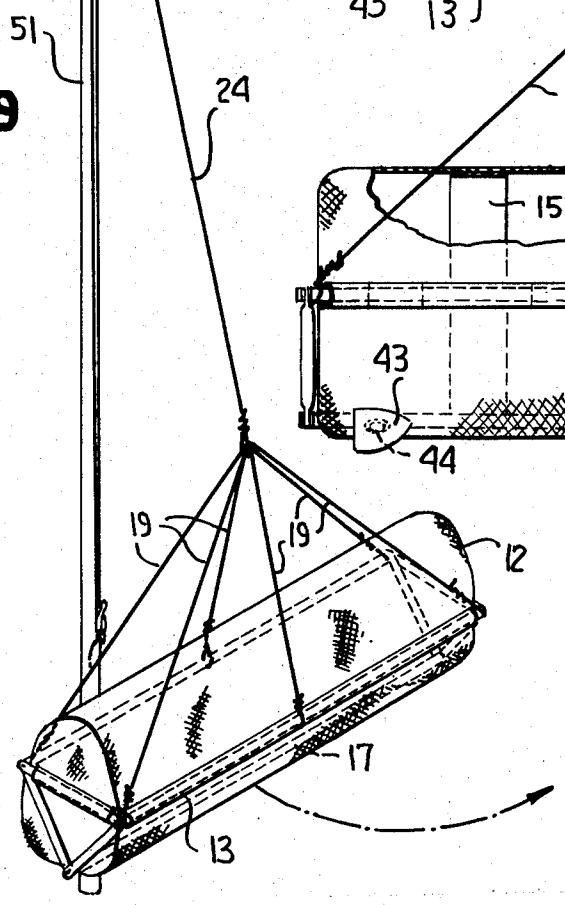


FIG.9

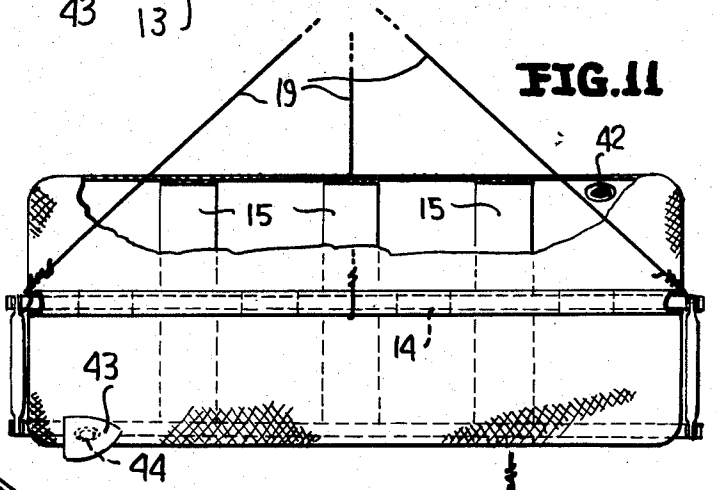


FIG.11

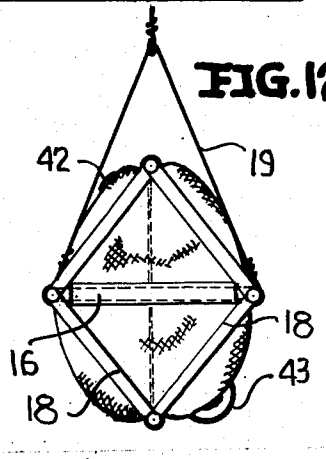


FIG.12

ASSEMBLY FOR USE IN RECREATIONAL ACTIVITIES

BACKGROUND OF THE INVENTION

This invention relates to an assembly usable as a boat or as an accessory with sailboats and powerboats and may be employed for many purposes to add to the comfort, convenience and safety of the boating public. The assembly may also be used as a vehicle on land or ice.

It is known in the prior art to use the weight of water as a counterbalance or ballast in a sailboat. Furthermore, there are many different types of accessories which may be employed for different uses. For example, liquid storage tanks, portable showers, pontoons, lifting mechanisms, sea anchors and pitch and roll stabilizers are all available in the prior art. A boatsman who wishes to have the benefits of all these accessories must necessarily have the storage room available on board his boat. The presence of all these different types of accessories creates an obvious problem aboard whether the boat is at dock or underway. Therefore, it is likely that some of these items would not be placed on board by the boatsman. Consequently, it is very likely that safety risks would not be mitigated in any way and that some inconveniences would be suffered by the boatman.

Where a boat is anchored offshore, it is necessary to have some sort of dinghy so that the boatsman may get back and forth between the shore and his boat. Until now, it was necessary for the boatsman to purchase an additional small boat which must be either placed on board or left anchored at the offshore location. When left at the offshore location, there is obviously no further use that may be attributed to such an accessory.

Finally, there is a marked increase in the number of people who are water sport enthusiasts. Consequently, there are many unskilled people participating in activities in this area. They are demanding equipment which will provide them both with fun and relaxation without their being exposed to a high safety risk. In addition, it is human nature to tire quickly of performing the same kind of activity again and again. In other words, people maintain their interest in certain activities when there is a variety of experiences opened to them. For example, the prior art now provides inflatable boats on which a motor or a sail may be placed for movement. Collapsible catamaran assemblies are available. Collapsible pontoon structures which may be inflated on location are also available in the prior art. These prior art structures provide a means for the consumer to have a fairly small investment and provide him with a highly transportable device for enjoying his water sports. However, each of these prior art assemblies provides only one type of activity. Until now, no construction has been available wherein the recreational enthusiast may also perform several different functions by effecting a simple mechanical manipulation thereto.

PURPOSE OF THE INVENTION

The primary object of this invention is to provide a convertible assembly which may provide a variety of experiences to the water enthusiast along with enhancing the convenience and safety of the boating public and also provide a vehicle for land and ice.

Another object of this invention is to provide a convertible assembly which may be used to effectuate desired results requiring the use of a large number of individual devices now available on the commercial market.

Another object of this invention is to provide a boat construction which may be used separately for water sports as well as for transportation between shore and a boat anchored offshore.

A still further object of this invention is to provide a convertible boat construction which may be used for transportation, as a life raft, has a size and shape suitable for storage on board a larger boat and may be broken down into its component parts whereby the component parts may be used to serve useful functions on board a larger boat in place of a multiple number of accessories.

It is still a further object of this invention to provide a boat construction that is convertible between various multi-hull vessels and various deep-hull vessels.

Another object of this invention is to provide a convertible assembly which may be used as a pontoon when filled with a gas fluid medium or as a stabilization unit when containing a liquid fluid medium.

SUMMARY OF THE INVENTION

The assembly of this invention includes at least two elongated units mounted on a rigid support means. One feature of this invention is directed to the specific structure of at least one of the units. This unit is a combination of a collapsible, elongated container adapted to receive a fluid medium therein and an elongated frame structure having an open configuration for receiving the collapsible container. Fastening means are provided for attaching the container within the frame structure during use. The container being attached to the frame structure forms a combination that may be used as a pontoon when the container is inflated with a gas fluid medium and may be employed in other uses when the container holds a liquid fluid medium.

When the two elongated units are mounted on a rigid support means, the assembly may be used as a dinghy or boat on the water surface. Because the assembly may be broken down into its component parts, it may be easily stored on board a larger boat. Once broken down, the separated unit or units may be used for various other functions. Wheels or runners may also be placed on the support means to provide a vehicle for land or ice.

Another feature of the invention is directed to a particular type of assembly for use on a water surface wherein pontoons are attached along two opposing longitudinal sides of a convertible frame structure. The frame structure includes a removably mounted bow portion and a structural means to provide a deep-hull portion between the pontoons. The frame structure of this convertible assembly further includes means to transform the configuration of the deephull into a through-passage configuration thereby forming a catamaran when the bow portion is removed.

Other features of the invention are directed to the manner in which the separated units may be attached to the mast of a sailboat for providing additional support thereto and effecting the hiking-out of additional weight from the side of a sailboat that is underway.

BRIEF DESCRIPTION OF DRAWINGS

Other objects of this invention will appear in the following description and appended claims, reference being made to the accompanying drawings forming a part of the specification wherein like reference characters designate corresponding parts in the several views.

FIG. 1 is a perspective view of an assembly made in accordance with this invention;

FIG. 2 is a perspective view of the assembly of FIG. 3;

FIG. 3 is a top plan view of the assembly of FIG. 2;

FIG. 4 is a sectional view along line 4—4 of FIG. 2;

FIG. 5 is a sectional view along line 5—5 of FIG. 2;

FIG. 6 is an exploded view of the connection as shown in FIG. 2;

FIG. 7 is a sectional view showing detail of an assembly made in accordance with this invention;

FIG. 8 is a perspective view of another embodiment of this invention;

FIG. 9 is a perspective view of a module made in accordance with this invention;

FIG. 10 is a top plan view of the module of FIG. 9;

FIG. 11 is a side elevational view of the module as shown in FIG. 9, and

FIG. 12 is an end view of another embodiment of a module made in accordance with this invention.

DESCRIPTION OF SPECIFIC EMBODIMENTS

More specifically, a boat assembly, generally designated **10**, incorporates the structure made in accordance with this invention. The boat assembly **10** includes a hull **11**, a bow portion **21**, a deck portion **22** and a mast **23**. A pontoon construction extends along both sides of the assembly **10** and includes a plurality of flexible containers **12** filled with a fluid medium. In this particular embodiment, the fluid medium is air and the containers **12** provide buoyancy to the assembly **10**. Cones **20** are disposed at the front and rear ends of the pontoon assembly in a manner that is known in the prior art. The mast **23** may be connected to the support members of the assembly **10** in any known manner. The construction as shown in FIG. **1** may be elongated or shortened by simply adding or eliminating more pontoon modules and support members as desired. The width or beam may also be modified when lengthening the boat by either using a different length of transverse support member between the parallel pontoons, or by having telescoping cross members.

The hull **11** as shown in the assembly **10** is a single hull construction known in the prior art as a cathedral hull. The single hull assembly as shown in FIG. **1** may be converted to a multi-hulled assembly as shown in FIG. **8**. This convertibility characteristic is accomplished through the unique superstructure as described hereinbelow. A hull covering **45** is used to complete the deep hull configuration. The hull covering may also be inflatable. The boat assembly of this invention is also capable of achieving all known forms of single hull designs, e.g., the deep V; semi-V; modified V; cathedral (also known as the tri-hull); tunnel hull; round bottom boat; flat bottom boat; as well as all of the multihulled configurations of a trimaran and a catamaran.

The superstructure of assembly **10** is shown in perspective in FIG. **2** and includes a simple fastening together of pontoon modules in any desired configuration. The basic module of the instant invention includes linear longitudinal support members **17** and short transverse support members **18** which are interconnected at their ends through the joint fastening mechanism **35**. As is evident in the drawings, the elongated frame structure has a plurality of parallel, linear support members **17** that are laterally spaced with respect to each other and an end frame portion including transverse support members **18**. An end frame portion is shown located at each end of the support members **17**. The flexible containers **12** include longitudinal fabric tunnels **13** through which the longitudinal support members **17** extend. The outer end tunnel **16** encases a short transverse support member **18**. The sectional view as shown in FIG. **7** shows the relationship existing between the longitudinal support member **17** and the outer longitudinal tunnels **13** which are connected to the flexible container **12**. A horizontal web **14** and a vertical web **15** are connected to the inside of the flexible container **12** to provide support therein. The container **12** will retain its shape much more effectively through the use of the webs **14** and **15**. If desired, it is possible to form either one of these webs as a single solid piece to compartmentalize the inside of the container.

The pontoon modules are connected by the cross members **30** and curved support members **34**. In the embodiment as shown in FIG. **1** and FIG. **2**, the single hull configuration includes longitudinal keel members **31**, side support members **32** and keel braces **33**. In addition, the bow portion **21** includes a front bow support member **25**, top side support members **26** and **27** and bow braces **28** and **29**. When it is desired to have a multi-hulled configuration as shown in FIG. **8**, it is simply necessary to remove the bow portion **21** which includes braces **28** and **29** and support members **25**, **26** and **27** together with the longitudinal keel support members **31**, side support members **32** and keel brace members **33**. When these braces and support members are removed, the resultant structure will be a through-passage configuration which is commonly referred to as a catamaran. Alternatively, it is simply necessary to remove the bow member **25**, brace **28**, and keel braces **33** then swing upwardly longitudinal keel support members **31** and side support members **32**, to awaiting fasteners in the center of members **34**. The boat will move about on the surface of the water through the buoyancy provided by the flexible containers **12** that have been filled by air.

The convertibility of the assembly made in accordance with this invention has been facilitated through the use of a fastening mechanism **35** as shown in FIG. **6**. The flattened end portions **36** on each one of the support brace members may be placed in juxtaposed relationship with a bolt **37** extending therethrough into a plug **38**. A grommet **40** and washer **41** are used to separate each of the flattened ends **36**. A lock washer **39** will maintain the bolt **37** in place while the assembly is in use. When it is desired to remove a pontoon module from the assembly or to convert from between a single hull and double hull construction, it is simply a matter of making the simple manipulation of the fastening

means to effectuate the desired results. Other types of fasteners such as set screws, bolts, snap-out pins placed into pre-drilled holes might also be used for strength and rigidity as alternatives to the fastening mechanism of this embodiment.

The deck covering **22** may include any snap-on fastening mechanism available in the prior art. That is, it is simply a matter of manipulating a simple fastening mechanism to remove the covering from the assembly of this invention for its other uses, e.g., when it is to be used for a shower curtain; for a cockpit tent which converts the cockpit into additional cabin and sleeping facilities; for an air ventilator covering, etc.

It is within the contemplation of this invention to provide a set of wheels or a set of runners onto the support structure so as to enable the assembly to be used for travel over land or over the surface of ice or snow. Any conventional mechanisms might be used to attach wheels or runners to the basic frame construction to effectuate the desired results.

The assembly **10** may be dismantled into its component parts such as shown in the construction of the module of FIG. **9.** In this specific embodiment, the module is being used as a ballast on board a sailboat. That is, the container **12** is filled with liquid medium and the additional weight is used to offset the tilting of the sailboat when underway. Connecting lines **19** extend from the module and attach to the shroud line **24.** The shroud line **24** is attached over a pulley **50** located toward the top of the mast **51** on the sailboat in a manner known in the prior art. The line **24** would extend through pulley **50** and back downwardly to a winch, block and tackle or a cleat **52.** The amount of displacement of the module may be controlled with respect to the gunwales of the sailboat in this manner. The module may be used as a ballast by having the module disposed along the deck of the sailboat itself. It need not be connected to the shroud **24** for this use. It may also be pushed or carried outwardly from the side of the boat to effectuate the same result as a man hiking outwardly from the gunwales as is well known in the sport of sailing.

The cross members **30, 34,** can be the extendible support of the module used as a stabilizer. The cross members **30, 34,** used in conjunction with a cable and winch, give the option of utilizing at least two methods or principles to extend the ballast outwardly from the gunwales of the boat: first, the simple principle of a crane, and second, the principle of scissors wherein one end of the two cross members is allowed to run smoothly along the angles of connecting lines **19.** The other end of the two cross members **30** and **34** can be attached to the gunwales of the sailboat, being allowed to pivot horizontally like the center of a pair of scissors.

When filled with water, the module may very well be used as a sea anchor by simply dropping the same over the side and maintaining a connecting line to the boat itself. Once the boat is anchored, it is possible to utilize the same ballast or trim stabilizer as an underwater stabilizer and reduce the boat's pitch and roll. In this instance, the module is detached and partially emptied so that the top has a flat or concave configuration. At least one of the modules is submerged into the water using the same cross members, or any pole, to extend the shroud away from the gunwales. In other words, it is possible to use the module made in accordance with this invention to stabilize any type of boat while it is either at anchor or while it is underway. This is a capability that is shared by no other structure available in the prior art.

The flexible container module may be made any desired length, width, height and shape, depending upon the desired size and weight when filled with a medium such as air or liquid. Such a module as described hereinabove has been constructed in accordance with this invention with length L of four feet, and overall width W of 15 inches and an overall height H of 18 inches. Straps (not shown) may be used to support the container **12** along its length. Such straps would extend underneath the container **12** and between parallel support members **17.**

It is seen that the container of the module as shown in FIG. **9** may be used to provide additional water storage. The frame structure may be used in conjunction with a block and tackle for lifting material on board the ship. The flexible container **12** would be deflated in such an instance. It would also be possible to mount a module with water located in the flexible container **12** in such a way as to provide a shower facility on board ship. It would simply be necessary to place a curtain structure such as the deck portion **22** to form a shower stall underneath the upraised module and place a shower head onto a valve allowing the water to run out of the flexible container **12** as desired. It is clear that the structure of the module of FIG. **9** might also be used as a boatswain's chair. Many other uses may be made of such a module structure as may be deemed appropriate by the user.

It is clear that the use of a frame structure in combination with an inflatable capacity for the assembly as disclosed herein has many advantages over a purely inflatable boat as is available in the prior art. Such purely inflatable boats may not be used to effectuate the desired conversion between single hull and multi-hulled boats nor are they readily adaptable to use on land or ice. Furthermore, the completely inflatable boats of the prior art may not be dismantled in such a way as to provide the additional accessory items as are provided by the module that is disclosed herein and shown specifically in FIG. **9.** At the same time, the disclosed assembly retains the advantages of an inflatable boat when compared to one made out of less flexible material such as fiberglass or wood.

The container **12** includes a standard air valve **42,** a scoop structure **43** and a one-way valve **44.** With this structural configuration, the container **12** may be placed over the side of a boat while underway to scoop water into the oneway valve **44.**

In the embodiment of FIG. **12,** a longitudinal member **17** and four transverse support members **18** are taken from another pontoon cylinder and attached as shown. It is also possible to secure a member **17** to the center of member **18,** making a flat or concave top configuration, thereby providing a further strengthening effect. In this embodiment, members **32** could be extended and attached to the very bottom of the container, thereby allowing the formation of a very deep V-hull configuration.

While an assembly for use in recreational activities has been shown and described in detail, it is obvious that this invention is not to be considered as being limited to the exact form disclosed, and that changes in detail and construction may be made therein within the

scope of the invention, without departing from the spirit thereof.

Having thus set forth and disclosed the nature of this invention, what is claimed is:

1. An assembly for use in recreational activities comprising:

a. at least two elongated units mounted on a rigid support means,

b. said units being parallel and laterally displaced with respect to each other,

c. at least one of the units being detachably connected to the rigid support means,

d. each said unit including a collapsible, elongated container adapted to receive a fluid medium therein and an elongated frame structure having a plurality of parallel linear support members wherein each support member is laterally spaced with respect to any other lateral support member and a separate end frame portion connected at each end of said support members to form an open structural configuration to receive the collapsible container,

e. said detachably connected unit having a collapsible, elongated container adapted to hold either a liquid fluid medium or a gas fluid medium whereby the detachably connected unit may be used as a pontoon when the container is inflated with a gas fluid medium and is employable in other uses when the container is not inflated or holds a liquid fluid medium.

2. An assembly as defined in claim **1** wherein

the collapsible, elongated container in the detachably connected unit is removably fastened within said elongated frame structure.

3. An assembly as defined in claim **1** wherein

the collapsible container includes a means for introducing and exhausting a liquid medium and a means for introducing and exhausting a gas medium.

4. An assembly as defined in claim **1** wherein

the collapsible container includes a flexible support means located inside the container so that the shape of the container will be maintained in a desired configuration when filled with a fluid medium.

5. An assembly as defined in claim **1** wherein

the linear support members extend longitudinally along the outside of the collapsible container in the detachably connected unit

whereby when the detachably connected unit is detached and the collapsible container in said detached unit is filled with a liquid medium, one of the support members is disposed underneath the container to support the weight of the liquid fluid medium held within the container so that the assembly is usable as a ballast, and

whereby when the container in the detached unit is inflated with a gas medium, one of the support members is located on the top of the container so that the assembly may be used as a pontoon.

6. An assembly for use in recreational activities comprising:

a. at least two elongated units mounted on a rigid support means,

b. said units being parallel and laterally displaced with respect to each other,

c. at least one of the units including two modules wherein at least one of the modules is detachably connected to the rigid support means,

d. said detachably connected module including a collapsible, elongated container adapted to receive a fluid medium therein and an elongated frame structure having a plurality of parallel linear support members wherein each support member is laterally spaced with respect to any other lateral support member and a separate end frame portion connected at each end of said support members to form an open structural configuration to receive the collapsible container,

e. said collapsible, elongated container being adapted to hold either a liquid fluid medium or a gas fluid medium whereby the detachably connected module may be used as a pontoon when the container is inflated with a gas fluid medium and is employable in other uses when the container is not inflated or holds a liquid fluid medium.

7. An assembly as defined in claim **6** wherein each unit includes two modules.

8. An assembly as defined in claim **7** wherein all the modules are detachably connected to the rigid support means.

9. An assembly as defined in claim **6** wherein the rigid support means includes a convertible frame structure having a removably mounted bow portion and a structural means to form a single hull portion between the two elongated units.

10. An assembly as defined in claim **6** wherein the collapsible, elongated container in the detachably connected module is removably fastened within said elongated frame structure.

11. An assembly as defined in claim **6** wherein

the linear support members extend longitudinally along the outside of the collapsible container in the detachably connected module

whereby when the detachably connected module is detached and the collapsible container in said detached module is filled with a liquid medium, one of the support members is disposed underneath the container to support the weight of the liquid fluid medium held within the container so that the assembly is usable as a ballast, and

whereby when the container in the detached module is inflated with a gas medium, one of the support members is located on the top of the container so that the assembly may be used as a pontoon.

12. An assembly for use on a water surface comprising:

a. a convertible frame structure,

b. means for attaching pontoons along two opposing longitudinal sides of the frame structure,

c. said pontoons comprising elongated units mounted on the convertible frame structure,

d. said units being parallel and laterally displaced with respect to each other,

e. at least one of the units being detachably connected to the convertible frame structure,

f. each said unit including a collapsible, elongated container adapted to receive a fluid medium therein and an elongated frame structure having a plurality of parallel linear support members and an end frame portion disposed at each end of the support members to form an open configuration to receive the collapsible container,

g. said container of the detachable unit being adapted to hold either a liquid fluid medium or a gas fluid medium whereby when the collapsible container contains gas fluid medium the assembly may be used as a floating device and when the container of the detachably connected unit holds a liquid fluid medium and the unit is separated from the convertible frame structure, the unit may be employed in other uses such as a fresh water reservoir, a ballast, a sea anchor, and a pitch and roll stabilizer and the like,

h. said frame structure including a removably mounted bow portion and a structural means to provide a single hull portion between the pontoons,

i. said frame structure further including means to transform the configuration of the single hull portion into a multi-hull configuration.

* * * * *