Sept. 10, 1968 W. W. WINDLE 3,400,414

SECTIONAL BOAT CONSTRUCTION

Filed Feb. 6, 1967

Fig. 1

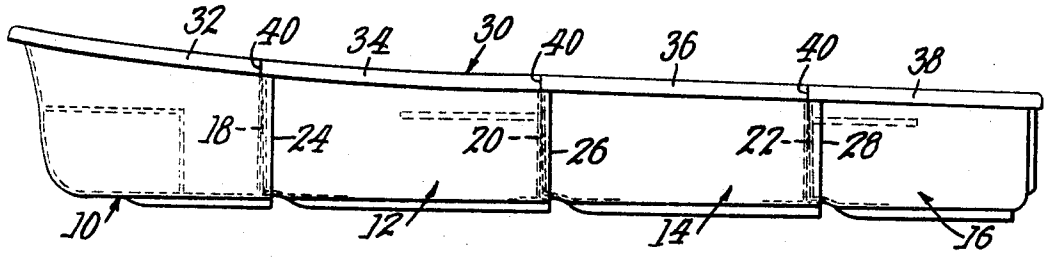


Fig. 2

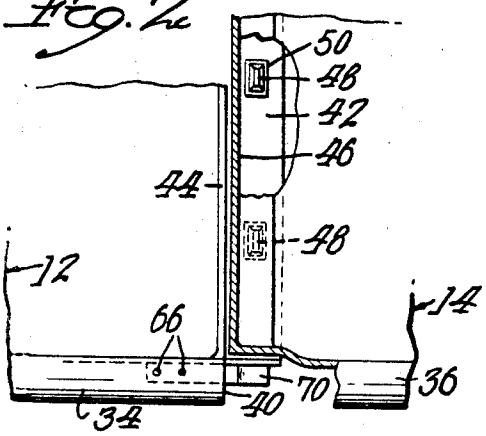


Fig. 4

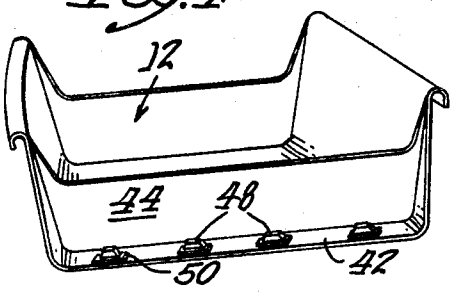


Fig. 5

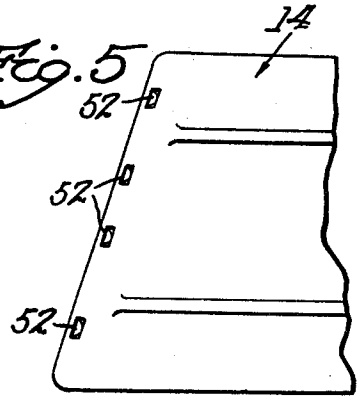


Fig. 3

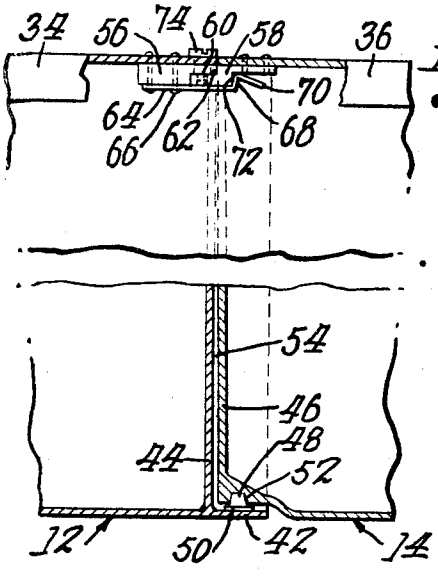
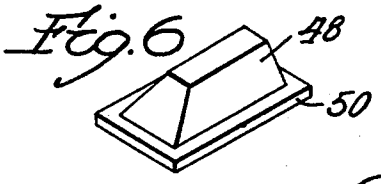


Fig. 6



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SECTIONAL BOAT CONSTRUCTION

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ABSTRACT OF THE DISCLOSURE

A sectional boat including a series of separate nesting boat forming sections which are to be connected together, each section having a bottom, side walls, and a front and a rear partition, with means to secure the same substantially rigidly together but in partially spaced relation providing a Venturi effect of induced air which tends to break the suction between the boat bottom and the water as the boat progresses, including the improvement that there are means substantially rigidly connecting the sections together in spite of the Venturi spaces, said means being quickly attachable and detachable for efficient fast set-up and take-down of the boat.

This invention relates to a sectional boat construction and more particularly to a construction for securing the sections of a boat together in firm, non-weaving condition such that the sections are securely fastened and will not come apart regardless of the severity of conditions under which the boat is used, and at the same time the parts can all be put together and taken apart without the use of any tools.

A further object of the invention resides in the provision of a boat as aforesaid in which the various parts of the boat are secured together such that they cannot move relatively to each other in any direction once having been assembled, but at the same time are easily taken apart without the use of tools; and the provision of special new and improved means for maintaining the various parts of the boat against motion in a vertical direction or in a lateral direction, regardless of the fluid or wind forces imposed upon adjacent or different sections of the boat.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings in which:

FIG. 1 is a view in elevation illustrating the boat;

FIG. 2 is a plan view of a joint between two sections thereof with parts broken away and in section;

FIG. 3 is a vertical section between two sections of the boat with parts broken away and in section;

FIG. 4 is a perspective view of the rear wall of the forward section;

FIG. 5 is a similar view of the forward wall of a front section; and

FIG. 6 is a perspective view of the holding studs.

Attention is directed to my United States Patent 3,266,067. The present invention presents an improvement over the construction shown in my previous patent because of the fact that a construction is here provided in which the various sectional portions of the boat are secured together with greater firmness and strength and in which the various parts cannot move relative to each other under any conditions, but still at the same time no tools or separate fastenings of any kind are necessary to assemble or disassemble the boat sections.

The boat comprises a series of fore-and-aft sections which are adapted to be nested one within the other for storage in a small space and also for easy manipulation. The sections are preferably made of glass fabric but may be made essentially of any materials, and it is to be pointed out that the various parts of the boat may assume

many different shapes and forms without departing from the scope of the invention.

In this instance, however, as shown in the illustration of the invention in this application, there is a bow section **10**, a second section **12**, a third section **14**, and a stern section **16**, the transom of which may be strengthened to support an outboard motor. There are also seats as may be desired or convenient and these seats may be set upon the partitions between certain sections.

Each section comprises a forward end and a rear end and in sections **10**, **12** and **14** these sections are each provided with a rear wall **18**, **20** and **22** which is in effect inset from a rim **24**, **26**, **28** extending around three sides of the same, i.e., on the bottom and side walls. Each forward portion of each section has a plain box front which is adapted to be secured in position relative thereto but if desired in slightly spaced condition therefrom except that it is preferred that certain areas of the front wall of a rear section shall abut or almost abut the rear wall of the front section preferably adjacent the top portion thereof. At the same time, however, means is provided for securing the parts rigidly in position. Thus it will be seen that the forward edge portion of any section except the bow is neatly nested within the three-part rim extending to the rear of any forward section except the stern section. The boat is provided with a gunwale generally indicated at **30** and this in turn is provided of several different but alignable gunwale parts **32**, **34**, **36**, **38**. These gunwales abut as shown at **40** in FIG. 2.

The side edge portions of the rearwardly extending rims are not fastened in any way to the forward edge portion of the rear sections of the boat but the gunwales as will be described hereinafter are secured together in a certain new and improved manner and include means for preventing any vertical motion between the respective sections of the boat.

Referring now to FIG. 3, there is shown at **42** the portion of the rearwardly extending rim, say for instance **26** as described above, which forms a bottom portion of the boat and it will be seen that this extends to the rear from the partition **44** which is the rear wall for the forward section **12**. The partition **46** which is the forward wall of the rear section **14** nests neatly within the area but with a very small separation therefrom to provide the Venturi effect described in my above identified patent.

In this case the portion or rim at **42** is provided with a series of upstanding male studs which are in the form of elongated pyramids and these are integral with the rim portion at **42**, there being a row of these provided in mutually spaced relationship as shown in FIG. 4. These studs are generally indicated at **48** and each is provided with a very small bottom rim **50**.

Mating with these upstanding studs are a series of sockets **52** of exactly similar shape and which just fit the studs, so that when the sockets are applied to the studs, they very firmly hold the two parts of the boat against any sidewise or back-and-forth motion, and the rim at **50** maintains a slight spacing between the bottom **52** of the rearward section **14** for instance from the rearwardly projecting portion **42** of rim **26**, etc.

The drawings are exaggerated and the parts fit closer than as shown but this is done in order ot illustrate the invention clearly.

With the parts in position as shown in FIGS. 2 and 3, it will be seen that there is no possible relative motion between the fore-and-aft sections of the boat in a fore-and-aft direction or in a sidewise direction; and that additionally if there were any failure of the studs, any such lateral motion is still stopped by the contact between the forward portion of the rear section of the boat and the inside surface of the rearwardly extending rim on the forward section of the boat, these parts being very closely

associated and preferably touching at their top points or substantially so, while at the same time leaving the Venturi tube effect as at **54** in FIG. 3.

The gunwale **36** of rear section **14** abuts at its forward edge the rear end of gunwale **34** of section **12** approximately at the point of contact of the two partitions **44** and **46** and this is the point of forwardmost extent of the front portion of the rear section which in effect is more or less of a plain box formation except as described. However, the entire three-part rim at **26**, **42**, etc. extends rearwardly past the front wall **46** of the rear section **14** as clearly shown forming a neat nesting arrangement as aforesaid.

Under the gunwale **34** at its rearwardmost area there is provided a block **56** and there is a complementary block **58** under the gunwale **36** at the forward edge portion thereof, these blocks having offset portions as is indicated at **60** and **62**. The offset portion **60** of the block **58** extends forwardly and under part **62** of the block **56** at its rear edge and it will be seen, of course, that in this condition there can be no upward vertical motion of either part relative to the other. The rear boat section **14** cannot move upwardly because its block **50** underlies a portion of block **56**, and the bottom of the boat section **14** rests on the rim **42** (or on the stud rim **50**) so that there can be no motion in the opposite direction. Therefore all that is necessary to do is to prevent the blocks **56** and **58** from separating and this is easily accomplished by any means such as a leaf spring generally indicated at **64**. This leaf spring is mounted at **66** at one end on block **56** and extends toward the rear having a jog **68** and a thumbpiece **70**. The jog just fits behind the shoulder **72** of the offset projection **60** of the block **58** locking the parts together when the spring is merely allowed to snap in behind the shoulder. At the same time the thumbpiece at **70** can be used to release this locking effect so that the two boat sections can be taken apart merely by unlatching two springs, one at each side of the boat between the respective sections, and then lifting the rearward section from the front section. Also the parts are put together simply by aligning the sockets **52** with the studs **48** and pivoting the parts in such a way as to cause the thumbpiece **70** to snap over the forward portion of the block **58** and into the shoulder **72** as clearly shown in FIG. 3.

It will be seen that the sectional boat as described is extremely strongly constructed and the parts are very firmly connected together and the boat will not weave or twist to any appreciable extent even in very heavy weather but at the same time the parts are very easily snapped together without the use of any tools and as easily released to be taken apart and stacked.

Alternatively a screw which is operable by a coin could be used to secure the blocks **56** and **58** together as is indicated at **74** but it is not necessary to fasten the parts together in this way as it has been determined that the spring-type clip fastener described above adequately and fully connects the parts together as described without possibility of accidental detachment or relative motion of the sections.

What I claim is:

1. A sectional boat comprising a series of separate boat forming sections each of which includes a bottom, a side wall at each side edge of each bottom, and front and rear partitions connecting the side walls in each section, said section being adapted to be connected together seriatim,

means securing and holding in spaced relation at least one of said front partitions with respect to the rear partition of the next forward boat forming section, the front and rear partitions which are next to each other forming a passage for the induction of air downwardly from the top edges of said partitions to the bottom of the boat, the induced air tending to break suction between the boat bottom and the water as the boat progresses,

means forming a rim about portions of certain of the rear partitions, the front partition of the next rearward boat forming section partially nesting therein,

the means securing and holding said boat forming secitons comprising in part said rim, and including automatically engaging connecting means temporarily holding the boat forming sections against motion in a fore-and-aft direction,

and means securing the sections against relative lateral and vertical motions.

2. The sectional boat of claim **1** wherein the rim overlaps the side wall of an adjacent member.

3. The sectional boat of claim **1** wherein the rim on a forward member overlaps the forward edge of the bottom of an adjacent member located to the rear, and interengaging means on the rim and bottom.

4. The sectional boat of claim **1** wherein said connecting means includes a spring, there being a shoulder on one member, the spring being on another adjacent member, and including a portion releasably engageable behind said shoulder.

5. The sectional boat of claim **1** wherein said connecting means includes a spring, there being a shoulder on one member, the spring being on another adjacent member, and including a portion releasably engageable behind said shoulder, said spring having an offset for location behind said shoulder.

6. The sectional boat of claim **1** wherein said connecting means includes a spring, there being a shoulder on one member, the spring being on another adjacent member, and including a portion releasably engageable behind said shoulder, said spring having an offset for location behind said shoulder, and a free-ended cam-type offset to allow snapping together of said parts.

7. The sectional boat of claim **1** wherein said connecting means includes a spring, there being a shoulder on one member, the spring being on another adjacent member, and including a portion releasably engageable behind said shoulder, said spring having an offset for location behind said shoulder, and a free-ended cam-type offset to allow snapping together of said parts and to provide a convenient handle by which to release the spring from the shoulder.

8. The sectional boat of claim **1** including cooperating gunwale sections on the members, said automatically engaging connecting means being located at adjacent sections of the gunwale.

9. The sectional boat of claim **1** including cooperating gunwale sections on the members, said automatically engaging connecting means being located under adjacent sections of the gunwale, the gunwale sections contacting in end-to-end relation to form a continuous gunwale.

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