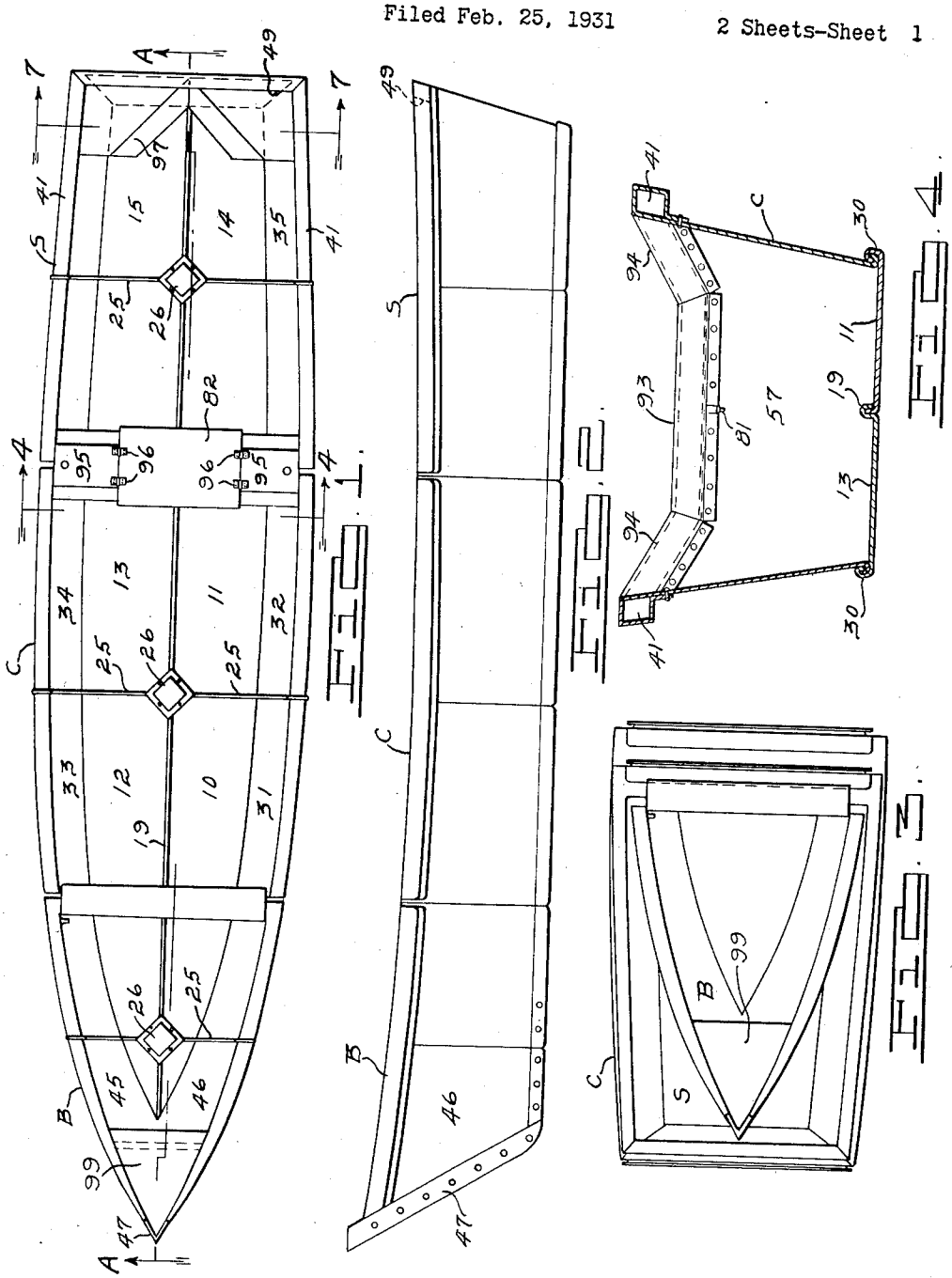
Feb. 27, 1934. A. J. SOBIERALSKI 1,948,831

BOAT AND CARRIER

Filed Feb. 25, 1931 2 Sheets-Sheet 1



INVENTOR.
Anton J. Sobieralski.
BY
Harness, Dickey, Pierce & Mann
ATTORNEYS.

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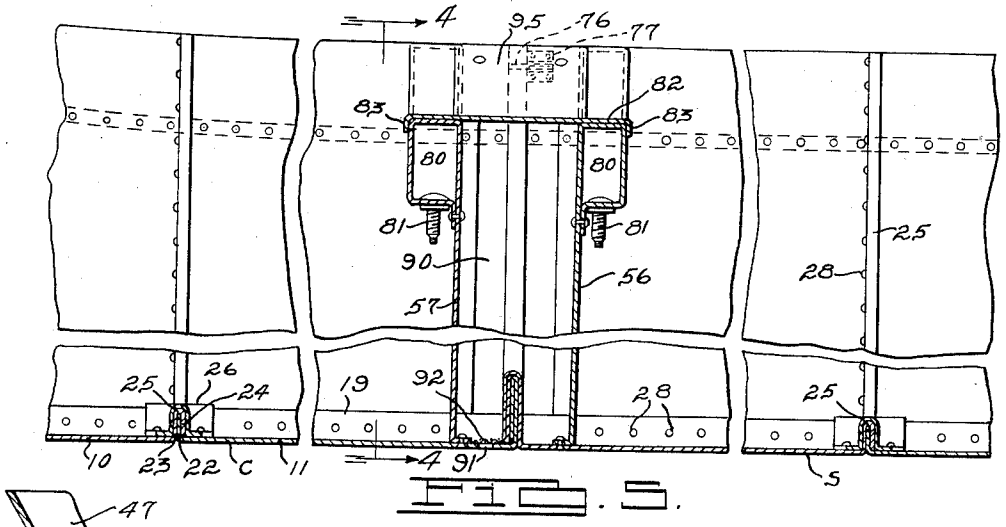


FIG. 5.

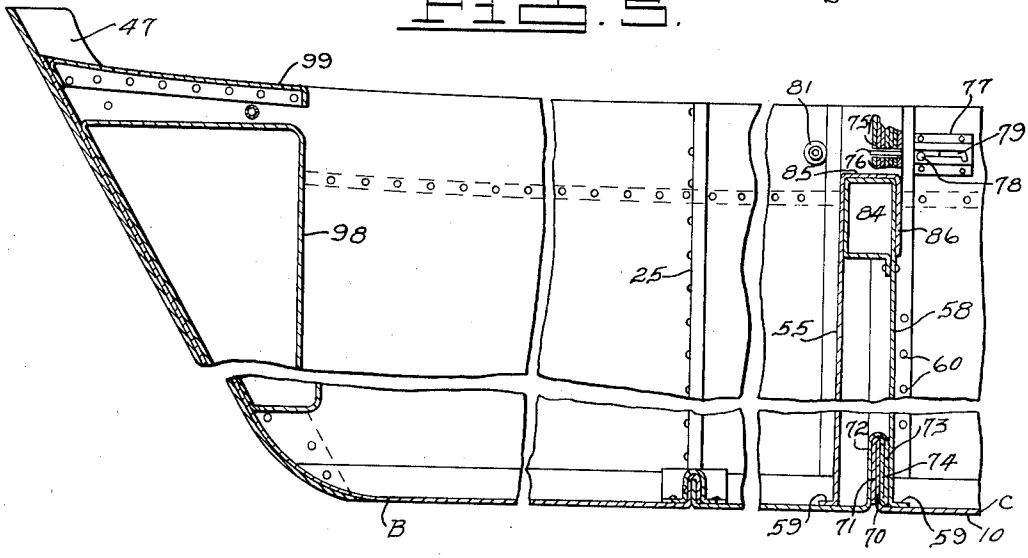


FIG. 6.

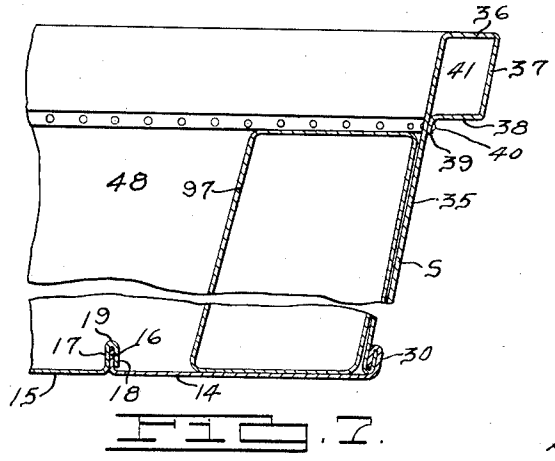


FIG. 7.

INVENTOR.
Anton J. Sobieralski.
BY
Harness, Dickey, Pierce & Hann
ATTORNEYS.

Patented Feb. 27, 1934 1,948,831

UNITED STATES PATENT OFFICE

1,948,831

BOAT AND CARRIER

Anton J. Sobieralski, Detroit, Mich.

Application February 25, 1931. Serial No. 518,073

12 Claims. (Cl. 9—2)

This invention relates to boats and particularly to the smaller types of boats such as row boats and outboard motor boats which are of sufficiently small size to permit their being made in sections, each detachable from the other, and one section nestable in the other so as to permit their handling and shipment as a relatively small unit.

The principal objects of the present invention are to provide a boat of the type described that is extremely rigid when the sections thereof are secured together; that is simple to construct and may be very light in weight; that permits the various sections to be assembled or disassembled with great ease and speed; that involves the maximum of safety; and that permits a relatively small unit to be provided upon nesting one section within the other for the purpose of storage or shipment.

Other objects are to provide a sectional sheet metal boat having a novel means for detachably securing the various sections together; in which a novel fish or bait box integral with the boat is provided in a novel manner; in which safety air floats are provided; and in which a novel and economical stiffening means is provided for reinforcing the boat.

The above being among the objects of the present invention the same consists in certain features of construction and combinations of parts to be hereinafter described with reference to the accompanying drawings and then claimed having the above and other objects in view.

In the accompanying drawings,

Fig. 1 is a plan view of my improved boat.

Fig. 2 is a side elevation of the boat shown in Fig. 1.

Fig. 3 is a plan view of the boat shown in Figs. 1 and 2 after the various sections thereof have been placed in nested relationship for the purpose of storage or shipment.

Fig. 4 is a vertical sectional view taken transversely of the length of the boat as on the lines 4—4 of Figs. 1 and 5.

Fig. 5 is an enlarged fragmentary vertical sectional view taken as on the line A—A of Fig. 1 and showing particularly the construction of the boat at the joint between the stern and center sections thereof.

Fig. 6 is an enlarged fragmentary vertical sectional view taken as on the line A—A of Fig. 1 illustrating the construction at the bow of the boat and between the bow section and the center thereof.

Fig. 7 is an enlarged fragmentary vertical sectional view taken transversely of the length of the boat as on the line 7—7 of Fig. 1.

Referring to the accompanying drawings I show in Figs. 1 and 2 a sectional boat in assembled condition constructed in accordance with the teachings of the present invention. For the purpose of illustration, I have shown this boat as constructed in three sections, a bow section B, a center section C, and a stern section S, it being apparent, particularly in view of the following specification, that the number of sections provided in any particular boat is relatively unlimited but, for the purpose of economy in manufacture, it is expedient to construct a particular size of boat with the smallest number of sections that will permit the requisite ease and space requirement usually found desirable under the condition of service to which the boat is adapted to be put. Normally, for row boats of small or medium size, two or three sections are usually sufficient although, it will be apparent that where the boat is of a size sufficient to handle a relatively large size of outboard motor the length of the boat in such case may make a larger number of sections desirable. The disclosure herein will be sufficient to permit anyone skilled in the art to construct the boat in accordance with the teachings of the present invention with as many sections as is thought necessary or desirable in each case.

As in the case of sectional boats heretofore proposed, the various sections of the boat illustrated in the drawings are operatively secured together and are separable from each other in a vertical plane perpendicular to the longitudinal axis of the boat, although it will be apparent that under some conditions it may be desirable that the plane of junction between the various sections be inclined to a greater or lesser degree with respect to such perpendicular plane.

While I have shown in the drawings a boat having a flat bottom and sides that are substantially straight, in a plane taken perpendicularly to the axis of the boat, it will be apparent that this is but one of the types of boats that may be constructed in accordance with the present invention and that, in fact, any other suitable or desirable form, shape, or contour of boat may be constructed in accordance with the teachings herein.

The principles of construction applied to each of the sections shown, being substantially the same in each case except for additional desirable features that may be included where desired as will be specifically pointed out later, the construction of the center section C will be explained in

detail it being understood that the principal features of construction thereof are carried out in the remaining sections.

One of the main objects of the present invention being to provide a light yet relatively stiff boat, I desire, in order to provide longitudinal rigidity, to form the bottom of each section of at least two sheets of metal joined together along the longitudinal center line of the boat in a vertically disposed seam somewhat suggesting and serving the purpose of a keel. Likewise, where the sections are of substantial length, I prefer to form each side of the bottom of two or more sheets of metal joined together in a plane transverse to the length of the boat by a seam lying in such plane and which seam somewhat suggests and serves the purpose of ribs.

This is illustrated in the case of the bottom of the center section C by the metal plates 10 and 11 which form that half of the bottom on one side of the longitudinal center line of the boat, and the sheets 12 and 13 which form the remaining half of the bottom. The manner of securing the sheets on the bottom side of the boat together is illustrated in Fig. 4, but more clearly in connection with the sheets 14 and 15 of the stern section S in Fig. 7 in which it will be noted that the margin of the sheet 14 is upwardly bent to form a marginal flange 16 preferably lying on the longitudinal center line of the boat, and the cooperating margin of the sheet 15 is first bent upwardly as at 17 into contact with one face of the flange 16 and then downwardly on the other side of the flange 16, as at 18, so as to provide a vertically disposed rib or seam generally indicated in all the sections as at 19. This rib or seam, because of its substantial depth and because of its formation of triple thickness of the metal, acts to impart a considerable amount of longitudinal stiffness in a vertical plane to the boat, in a manner similar to a keel.

Likewise, in a similar manner, the sheets forming each side portion of the bottom of each section as in the case of the sheets 10 and 11, are formed to provide ribs or seams aiding to stiffen the boat laterally. This is perhaps best shown in Fig. 5 in which the forward edge of the sheet 11 is shown as being bent upwardly to form a flange 22, and the cooperating rear edge of the sheet 10 is first bent upwardly as at 23 and then downwardly as at 24 over the flange 22 to provide a rib or seam indicated generally in the views as 25, and which ribs or seams are disposed in planes perpendicular to the sides and bottom of the boat. The ribs 25 are preferably formed of the same height as the seams 19, and where the ribs 25 join the seams 19 I prefer to fit over the joints a plate like member such as 26 suitably riveted or otherwise secured in place so as to reinforce such joints. It will be of course understood that the various parts of the seam 19 in the one case and the ribs 25 in the other case are tightly secured together against leakage of water by rivets such as 28, or other suitable means.

Although not essential to the broader aspects of the present invention, I prefer, in order to impart greater stiffness to the boat and thus permit its construction of lighter metal, to form the sides of the boat separately from the bottom sheets thereof and to secure the sides to the bottom by a lock seam such as is illustrated at 30 in Figs. 4 and 7. Furthermore, in carrying out the sectional construction of the bottom, I prefer to form the side of each section from the same number of sheets as the corresponding bottom half of the section. In other words, the one side of the center section C is formed of two separate sheets 31 and 32 corresponding in length to the sections 10 and 11 and the opposite side of the section C of two sheets 33 and 34 corresponding in length to the sections 12 and 13. The ribs 25, in such case, are continued up the side of the section as indicated best in Figs. 5 and 6 through joining the side sheets together, in the same manner that the sheets 10 and 11 in the one case, or the sheets 12 and 13 in the other case, are joined together.

In order to render the boat buoyant in case of being filled with water, the upper margin of the side sheets, as is illustrated in connection with the side sheet 35 in Fig. 7, is first turned outwardly as at 36, then downwardly as at 37, then inwardly as at 38 back to the plane of the sheet 35 and then downwardly as at 39 to form a flange which may be tightly secured to the sheet 35 against leakage of water as by means of rivets 40, thus forming along the entire outer edge of each section an air chamber such as 41. This air chamber further serves as a gunwale for stiffening the edge of the boat and aiding the maintenance of the shape thereof.

As in the case of substantially all sectional boats the cooperating ends of each pair of sections are provided with transverse water tight bulkheads. The bow of the boat does not require such bulkhead in view of the fact that the side sheets 45 and 46 come into direct contact with each other in order to form a pointed bow, and are secured together against leakage of water by a reversely bent stem member 47 exteriorly applied thereto and suitably secured in place. Likewise the stern of the stern section being provided with the usual transom 48 permanently secured in place, is provided with a member corresponding with a bulkhead. It may be noted that, as best shown in Fig. 2, the upper margin of the transom 48 is bent to form an air chamber 49, corresponding with the air chamber 41 but extending inwardly of the boat instead of outwardly thereof as in the case of the chamber 41. The chamber 49 is interiorly connected with the chambers 41 on either side thereof.

In the case of the boat shown, the bow section B is provided with a rear bulkhead 55, the stern section S is provided with a forward bulkhead 56 and the center section C is provided with a rear bulkhead 57 and a forward bulkhead 58. Each bulkhead is preferably formed of a single sheet of metal as indicated best in Fig. 4, and all are marginally flanged as at 59 so as to enable such bulkheads to be secured in their respective sections, as by means of rivets 60 or other suitable means, against the entrance of water.

As thus far described a plurality of sections have been provided each of which is watertight in itself and the method preferably employed for securing these sections together to form a complete and rigid boat will now be described. As all of the sections are secured together in substantially the same manner a description of the construction employed in connecting the bow section B with the center section C, as shown in Fig. 6, will be described, it being understood that the stern section S and the center section C are formed in a corresponding manner except for such differences as may hereinafter be pointed out as being desirable.

Referring to Fig. 6 it will be noted that the forward margin of the section is inwardly turned in a plane perpendicular to the longitudinal axis

of the boat, or in other words perpendicular to the bottom and to the sides, as at 70, and then is reversely bent upon itself as at 71 to form a flange having a double thickness of metal. It will be noted that this flange is continuous from one gunwale of the boat to the other. The rear edge of the bow section B is first upwardly bent as at 72 in a plane parallel to the flange 70—71, and terminates in a portion 73 bent over and downwardly over the flange 70—71 thus forming an outwardly opening groove or socket in which the flange 70—71 is received. In order to provide a greater stiffness for the joints between the various sections, I further desire to rebend the portion 73 upon itself as at 74. This last feature is particularly desirable in that this particular portion of the section is more exposed to collision with objects during shipment than other parts of the boat and thus being stiffened are less liable to deformation than would otherwise be the case.

With this construction it will be apparent that by lifting the bow section B upwardly relative to the center section C the upwardly extending flange at the forward edge of the center section will be withdrawn relatively downwardly out of the socket on the rear edge of the bow section B, thus freeing the sections from each other. It will also be apparent that when the flange and the socket are in engagement with each other, an extremely rigid and secure joint extending continuously around the periphery of the boat in a plane transverse to the length thereof is provided, and that to all intents and purposes when the two sections are secured together the boat is as rigid as though the sections were permanently secured together as in a one piece or unitary boat.

As is illustrated in Fig. 5, the stern section S and the center section C are secured together in substantially the identical manner described in connection with the bow section B and the center section C, with the exception that I prefer that the flange member be formed on both ends of the center section C so that in assembling the boat the center section C is first placed upon the ground and the bow section B and stern section S, in their turn, are applied and simply dropped into place, thus facilitating both the assembling and the disassembling of the section. The feature is, of course, not essential to the broader aspects of the invention and may be varied in accordance with the desires of the individual builder.

In order to lock the sections together in assembled relationship against inadvertent disengagement, I form a plurality of aligned openings generally indicated as at 75 in Fig. 6 through the cooperating portions 70, 71, 72, 73 and 74 at the junction between each pair of sections, and project through such openings a bolt such as 76. This bolt may be of the well known door type of bolt having a base such as 77 which may be secured to one of the sections in such a manner that the bolt 76 is axially slidable therein in alignment with the opening 75, a thumb piece such as 78 working in a bayonet slot such as 79 being provided for manipulating the bolt. By this means the locking member is always maintained in position for operation, is quickly and easily operated and is readily maintained in either locked or unlocked position.

If desired, the metal at the upper edge of each bulkhead may be bent to provide air chambers 80 as illustrated in Fig. 5, such air chambers being suitably connected to the corresponding air chambers 41 on the sides of the corresponding section and thus act to increase the buoyancy of the boat when filled with water. If desired, these air chambers 80 may be provided with valve mechanisms such as 81, corresponding in construction with the valve mechanisms conventionally employed in connection with pneumatic tires, thus permitting the introduction of air under pressure into the chamber to force out any water that may have inadvertently leaked into the same or for any other purpose desired.

Where a pair of such air chambers are provided at the cooperating ends of adjacent sections, such air chambers are preferably provided on the inner side of the corresponding bulkhead for such section in order that they may form a suitable support for a seat member such as 82 which may be extended over them. Such seat member, when used, is preferably provided with downwardly turned marginal flange portions 83 embracing the opposite sides of the air chamber and thus aiding in preventing separation of the same upon a longitudinal bending action being applied to the boat, and thereby act to stiffen the boat.

Another manner of accomplishing this same result is illustrated in Fig. 6 in the connection between the bow section B and the center section C. In this case, one of the bulkheads is formed at its upper edge to provide an air chamber 84 in a manner similar to the provision of the air chambers 80.

Specifically this air chamber, to achieve the results hereinafter described, must be formed on that section provided with a flange 70—71 and in such case the bulkhead 58 will be the one to be provided with such air chamber, it being understood, of course, that the air chamber will be connected with those on the side of the boat as in the case of those previously described. In such case the upper edge of the bulkhead 55 will be bent horizontally rearwardly as at 85 over the top of the air chamber 84 and then downwardly as at 86 over the rear space of the air chamber 84, thus providing a socket in which the air chamber 84 is received and held against movement longitudinally of the boat. Obviously, this provides an additional means for stiffening the connection between the two sections.

Where the boat is to be employed as a fishing boat, it is often desirable to provide a fish or bait box in conjunction therewith and the present invention readily adapts itself to the provision of such a box as illustrated in Fig. 5. In this figure it will be noted that the bulkheads 56 and 57 are spaced from the line of junction between the sections C and S although, obviously, the same result may be obtained if one of the bulkheads only are so spaced. This provides a chamber indicated generally as at 90 between the bulkheads 56 and 57 underneath the seat 82. The bottom sheet 11, for instance, within this chamber may be provided with an opening such as 91 to permit the flow of water into and out of the chamber 90, and where this opening is of sufficient size to permit the escape of minnows or other small fish through the opening, such opening may be protected against such escape by securing over it a wire screen such as 92. This opening then allows water within the chamber 90 to be kept continuously fresh which is favorable to the preservation of the bait or the fish in the chamber.

The seat 82 preferably being below the level of the side of the boat, I prefer to form the center portion of the bulkheads 56 and 57 horizontally as at 93 in Fig. 4, and the sides of the bulkhead

extending outwardly and upwardly from such horizontal portion 93 to the edge of the boat as at 94, thus permitting the boat to be tipped to an angle sufficient to allow water to wash in over the gunwales before water in the chamber 90 will find its way over the bulkheads 56 or 57 into the boat. The seat 82 is made accordingly only of such length as the portion 93, and covers such as 95 are hinged to each side thereof as at 96 so as to cover the ends of the chamber 90 and yet permit ready access thereto.

Although the air chambers 41, 49, 80 and 84 will ordinarily be sufficient in size to keep the boat from sinking when filled with water, and with two or three persons in it, it may be found desirable in some cases to increase the safety factor of the boat by the addition of other air chambers such as 97 in the stern of the boat, and 98 in the bow thereof disposed under the cap piece 99 as illustrated in Fig. 6. These air chambers 97 and 98 may, if desired, be removable or may be permanently secured in place.

It will, of course, be understood that in all cases, the shape and contour of the boat is preferably such that by suitably proportioning the length of the sections, all of the sections may be nested one within the other. For instance, as illustrated in Fig. 3, the rear section S may be nested directly into the center section C and the bow section B, in turn, nested within the stern section S. In such case a relatively compact assembly may be made of the boat permitting great economy in storage and ease in shipment. It may be noted that with the particular construction illustrated between the bow section B and the center section C the reversely bent flange portion 86 on the bulkhead 55 with the bow section B, will, when the bow section B is nested within the stern section S, fit over the air chamber 80 at the forward of the stern section S and will thus serve to hold the bow section B against movement relative to the stern section S in shipment. This same practice may, of course, be carried out between other sections, if desired.

From the foregoing it will be apparent that various features of construction of the boat herein described are not all interdependent upon one another but some features may be used independently of others, and it will be apparent that I do not limit my invention so as to restrict the use of all of the various features in a single unit, but formal changes may be made in the specific embodiment of the invention described without departing from the spirit or substance of the broad invention, the scope of which is commensurate with the appended claims.

What I claim is:

1. In a boat hull, in combination, a plurality of sheet metal independently water tight sections, and cooperating disengageable reversely bent flanges and sockets formed on the cooperating ends of said sections, the plane of said flanges and sockets being substantially perpendicular to the longitudinal center line of said boat whereby to permit operative engagement and disengagement of said sections relative to the other thereof in a plane perpendicular to the length of said hull and in a direction perpendicular to the bottom thereof, said flanges and said sockets co-operating to provide the sole means for holding said sections in co-operative relationship.

2. In combination with a sectional boat hull, co-operating ends of a pair of said sections being disengageably secured together, a water tight bulkhead in one of said sections spaced longitudinally thereof from the corresponding one of said ends, and a water tight bulkhead in the cooperating end of the cooperating section forming a chamber between said bulkheads, the upper portion of each of said bulkheads terminating in an outwardly extending airtight compartment.

3. In combination with a sectional boat hull, cooperating ends of a pair of said sections being disengageably secured together, a water tight bulkhead in one of said sections spaced longitudinally thereof from the corresponding one of said ends, a water tight bulkhead in the cooperating end of the cooperating section, whereby to form a chamber between said bulkheads, a wall of said chamber being provided with an opening therein for the flow of water to and from said chamber, a screen disposed over said opening and a seat member received on the upper edges of said bulkheads, said seat member having downwardly extending flanges thereon embracing opposite sides of said bulkheads.

4. In a sectional boat hull, in combination, a plurality of sheet metal sections cooperating ends of which are adapted to be removably secured together, at least one of said sections being provided at its upper edge with a marginal air chamber completely surrounding said edge.

5. In a sectional boat hull, in combination, a plurality of sheet metal sections cooperating ends of which are adapted to be removably secured together, said sections being provided with integral marginal air chambers, and valvular means associated with said chambers for the introduction of air into said chambers.

6. In combination with a sectional boat having cooperating ends of a pair of said sections detachably engageable with each other, a bulkhead for each of said ends, at least one of said bulkheads being spaced longitudinally of said boat from the corresponding section, each of said bulkheads having a horizontally disposed central portion bounded at each end by upwardly projecting portions, a seat member bridging the space between said horizontal portions of said bulkheads, and a cover hinged to each end of said seat member closing the space between said upwardly and outwardly extending portions.

7. In combination with a sectional boat, a pair of sections, the end of one of said sections being formed to provide a groove opening in a plane perpendicular to the longitudinal axis of said boat, the cooperating end of the other of said sections being provided with a flange slidably receivable in said groove whereby to detachably secure said sections against relative longitudinal movement, said grooved end and said flange having openings therein aligned when said sections are in proper cooperating relationship, a bracket secured to one of said sections, and a bolt axially slidably received in said bracket adjacent to and in alignment with said opening in the section to which said bracket is secured and adapted to be projected through said openings to lock said sections against relative displacement.

8. A sheet metal boat having an upwardly directed central vertical stiffening ribs formed by seaming together the bottom sheets thereof along the center line of the boat, upwardly directly stiffening ribs formed by seaming together the bottom sheets thereof transversely of the above mentioned stiffening ribs, the exterior surface of the bottom of said boat being uninterrupted thereby, and a plate covering said ribs at the

intersection thereof, said plate being rigidly secured to the bottom of said boat.

9. In a sectional boat hull, in combination, a plurality of sheet metal sections having cooperating ends, a marginal inwardly turned flange on one end of one of the sections, a marginal reversely bent portion on the cooperating end of the other of said sections removably receiving said flanges therein, a watertight bulkhead in each of said sections, the bulkheads being spaced longitudinally of the boat to form a chamber therebetween, interconnecting air chambers formed adjacent the upper edges of said sections and the bulkheads, a seat member received on the upper edges of the bulkheads, each seat member having downwardly extending flanges embracing the sides of the bulkheads and means associated with the inwardly turned flange and said reversely bent portion for locking the sections against relative displacement.

10. In a sectional boat hull, in combination, a plurality of sheet metal sections having co-operating ends, a marginal inwardly turned flange on one end of one of the sections, a marginal reversely bent portion on the co-operating end of the other sections removably receiving said flange therein, a water tight bulkhead in each of the sections, said bulkheads forming a chamber therebetween, a seat member received on the upper edges of the bulkheads, said seat member having downwardly extending flanges embracing the sides of the bulkheads, and means associated with the inwardly turned flanges and the reversely bent portion for locking said sections against relative displacement.

11. In a sectional boat hull, in combination, a plurality of sheet metal sections having co-operating ends, a marginal inwardly turned flange on one end of one of the sections, a marginal reversely bent portion on the co-operating end of the other of said sections removably receiving said flange therein, air chambers integral with the upper side edges of said sections, valvular means associated with the chambers, a seat member received on the upper edges of the bulkheads, the seat member having downwardly extending flanges embracing the sides of the bulkheads and means associated with the inwardly turned flanges and the reversely bent portions for locking said sections against relative displacement.

12. In a boat hull, in combination, a plurality of sheet metal independently water tight sections, and cooperating disengageable inwardly disposed reversely bent flanges and sockets formed on the cooperating ends of said sections, the plane of said flanges and sockets being substantially perpendicular to the longitudinal center line of said boat whereby to permit operative engagement and disengagement of said sections relative to the other thereof in a plane perpendicular to the length of said hull and in a direction perpendicular to the bottom thereof.

ANTON J. SOBIERALSKI.