

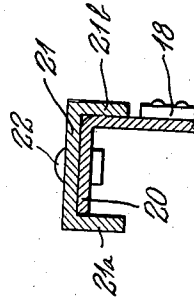
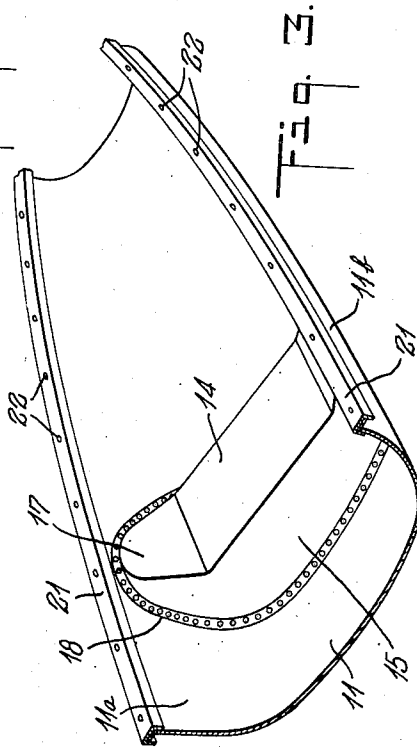
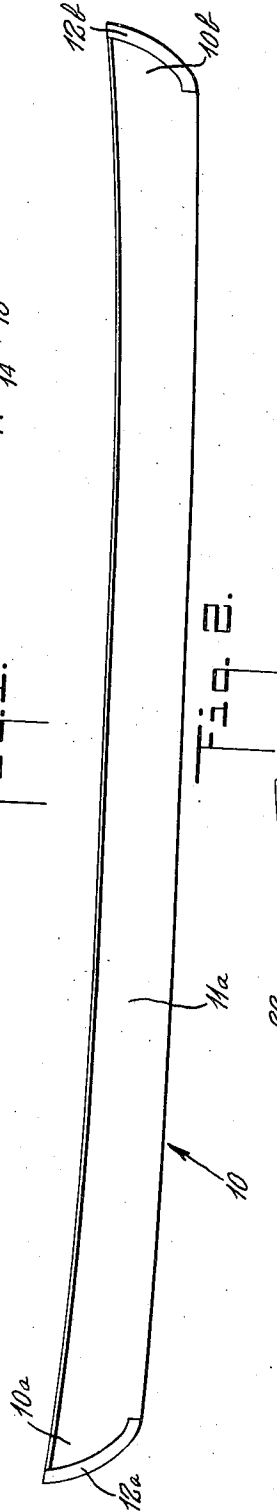
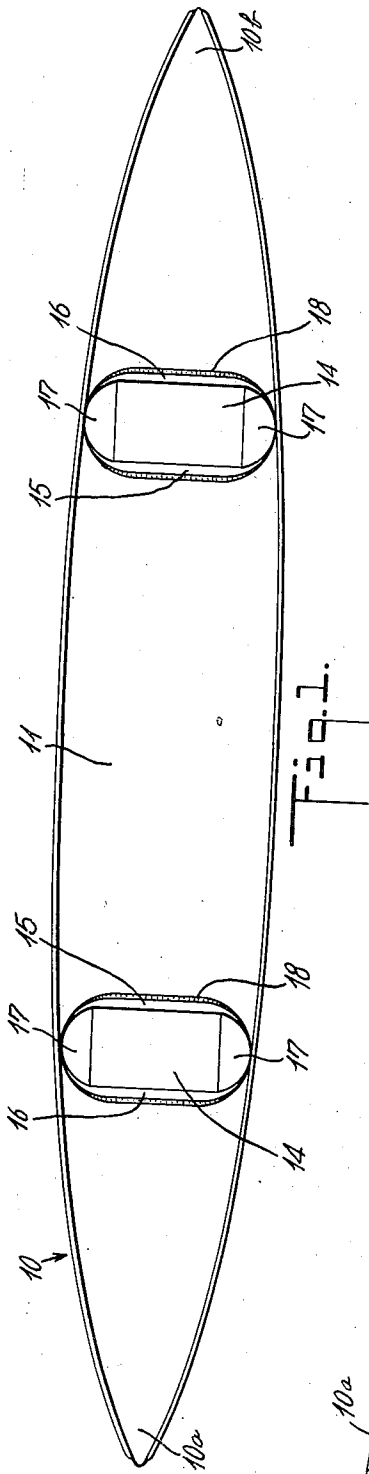
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BOAT CONSTRUCTION

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BOAT CONSTRUCTION

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2 Claims. (Cl. 9-3)

1

This invention relates to boats and more particularly to a novel boat construction which is especially adapted for canoes, and the like, although it may also be used to advantage for other types of small boats, such as rowboats, etc.

It has been proposed heretofore to make small boats, such as canoes, of metal. By making the hull of metal, such as aluminum, rather than wood, certain advantages are obtained from the manufacturing point of view. Also, a metal boat is not affected adversely by heat and sun, does not absorb water, and can be maintained in good condition at a relatively low cost.

Metal boats, of course, require bracing. In addition, it is particularly important that such a boat have a water-tight compartment or compartments for maintaining it afloat even when the boat is filled with water. The advantages of a metal boat cannot be fully realized unless the bracing and the water-tight compartment are arranged in a simple manner allowing manufacture at low cost and resulting in the least possible obstruction in the use of the boat. The bracing and compartmenting means of prior boats, metal or otherwise, fall far short of these requirements.

The object of the present invention, therefore, is to provide a boat construction, preferably metal, in which the hull is braced and compartmented in a simple and efficient manner, whereby the boat is relatively inexpensive to manufacture and requires a minimum of structural elements.

A boat made in accordance with the invention is characterized by a seat structure which serves also to brace the hull laterally and to provide a water-tight compartment. More particularly, the hull contains a hollow transverse member having a seat portion at the top. The transverse member also has a pair of opposed walls extending downwardly to the bottom of the hull from the front and rear edges of the seat portion, and walls extending from the sides of the seat portion to the adjacent sides of the hull. The latter or side walls of the transverse member join the opposed front and rear walls and form therewith a substantially continuous edge portion which contacts the sides and bottom of the hull. The transverse member is secured to the hull along this continuous edge portion in such a manner as to make the joint water-tight. Thus, the seat portion and the walls extending therefrom form an effective cross-bracing for the hull and in addition provide a water-tight compartment which prevents the boat from sinking when it is filled with water. Preferably, the hull and the

2

hollow seat structure are made of sheet metal, such as aluminum, and the seat structure is open at the bottom so that it can be made by a simple pressing operation. In this way, the continuous edge portion by which the seat structure is secured to the hull can be in the form of a flange extending outwardly along the edge of the bottom opening in the seat structure.

In the preferred construction, the hull is further reinforced by bending its sides outwardly at the top to form gunwale flanges, and mounting channel-shaped elements on these flanges. Each of the channel elements is disposed in an inverted position on its flange, so that one of the depending sides of the element extends downwardly below the outer edge of the flange, while the other depending side lies within the hull and directly over part of the edge portion of the hollow seat structure where it is secured to the hull. With this construction, the channel elements strengthen the hull, in conjunction with the gunwale flanges, and also serve to protect the gunwale against damage in handling the boat.

For a better understanding of the invention, reference may be had to the accompanying drawing, in which

Fig. 1 is a plan view of a boat made according to the invention, showing two of the seat structures;

Fig. 2 is a side view of the boat illustrated in Fig. 1;

Fig. 3 is a perspective view of part of the boat, showing details of one of the seat structures, and

Fig. 4 is a transverse sectional view of part of the boat, on an enlarged scale relative to the preceding views, illustrating details of the gunwale construction.

The boat illustrated in the drawing is a canoe in the form of a pirogue. It comprises a hull 10 having a bottom 11 and sides 11a and 11b. The hull is preferably made from a sheet of aluminum, the sheet being so cut that when the sides are drawn together to form the hull, the latter is provided with tapered ends 10a and 10b. The sides 11a and 11b may be held together at the ends by generally V-shaped members 12a and 12b secured to the sheet material.

The boat has one or more seat structures 14 extending transversely of the hull. As shown, the boat is provided with two seat structures 14 spaced apart longitudinally of the hull, the spacing of the two seats being such as to provide the boat with the desired balance. Since the two seat structures 14 are identical in form, it is necessary to describe only one of them.

Each seat 14 comprises a hollow transverse member which is flat at the top to provide the seat portion. Two opposed transverse walls 15 and 16 extend downwardly to the bottom 11 of the hull from the transverse edges, respectively, of the seat portion. Also, side walls 17 extend outwardly from the seat portion to the adjacent sides 11a and 11b of the hull, the side walls 17 joining the generally vertical transverse walls 15 and 16. Preferably, the side walls 17 are inclined upwardly from the flat seat portion and terminate near the gunwale of the boat, so that the seat portion is disposed well below the gunwale. In this way, the seat portion is sufficiently low to afford the desired stability to the boat when the seat is occupied.

The transverse walls 15 and 16 and the side walls 17 of the seat structure form a continuous edge portion which conforms closely to the contour of the sides and bottom of the hull. The edge portion is secured along its entire length to the bottom and sides of the hull, the joint being conveniently effected by bending the edge portion outwardly to form a continuous flange 18 which is riveted or otherwise secured to the hull. The joint between the hull and the edge flange 18 is made water-tight, whereby the seat structure forms a water-tight compartment below the seat portion 14.

It will be observed that the transverse seat structure 14, being rigidly secured to the sides and bottom of the hull, serves to cross-brace the latter. This cross-bracing is particularly effective for the reason that it extends continuously from the bottom of the hull to a region just below the gunwale where the side walls 17 of the seat structure terminate. By using two of the seat structures 14, as illustrated, the hull can be adequately cross-braced by the seat structures alone, it being unnecessary to provide any additional structural member for this purpose. Moreover, the water-tight compartment formed by the seat structure affords a means for maintaining the boat afloat even when it is filled with water.

The seat structure 14 may be made from an aluminum sheet, by simply pressing the sheet into the hollow form illustrated, in which the hollow body is open at the bottom. By reason of the continuous flange 18 around the edge of the hollow seat structure, the latter can be easily secured to the hull.

In order to provide further reinforcement for the hull 10, I prefer to utilize the gunwale construction illustrated in Fig. 4. More particularly, each side of the hull is bent outwardly to form a horizontally extending gunwale flange 20. A channel-shaped member 21 is mounted on top of each flange 20 and secured thereto, as by means of bolts 22. Each channel member 21 is mounted on its gunwale flange 20 in an inverted

position, so that the outer side 21a of the channel member extends downwardly below the outer edge of the gunwale flange, while the inner side 21b extends downwardly in engagement with the inner surface of the adjacent side of the hull. Thus, the lower edge of the inner side 21b lies just above the upper edge portion 18 of the seat structure where it is joined to the adjacent side of the hull. The inverted channel member 21 adds considerable rigidity and strength to the hull, in conjunction with the gunwale flange 20, and also affords protection against the outwardly projecting edge of the gunwale flange.

I claim:

1. A boat construction adapted especially for canoes, and the like, which comprises a hull, a hollow seat member extending transversely of the hull and having a seat portion at the top and opposed walls extending downwardly from the seat portion to the bottom of the hull, said member also having walls extending from the sides of the seat portion to the adjacent sides of the hull and joining said opposed walls to form therewith a substantially continuous edge portion conforming to the contour of the adjacent sides and bottom of the hull, and means for securing said edge portion to the hull in water-tight relation thereto, whereby the seat member acts to brace the hull and forms a water-tight compartment under said seat portion, in which the hull and seat member are metal, the sides of the hull being turned outwardly at the top to form horizontally extending gunwale flanges, the construction comprising also an inverted, channel-shaped element secured to each flange with the depending sides of said element extending below the flange, the inner side of each of said elements lying within the hull adjacent one side thereof and overlying part of said edge portion of the seat member.

2. A boat construction adapted especially for canoes, and the like, which comprises a metal hull, the sides of which are turned outwardly at the top to form outwardly extending gunwale flanges, and an inverted, channel-shaped element secured to each flange for reinforcing the gunwale, the depending sides of the element extending below the flange, one of the depending sides of each element being outside the edge of the flange, and the other depending side lying within the hull adjacent one side thereof.

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