Dec. 22, 1931. G. W. HEINEMANN 1,837,710

BOAT CONSTRUCTION

Filed March 10, 1931 2 Sheets-Sheet 1

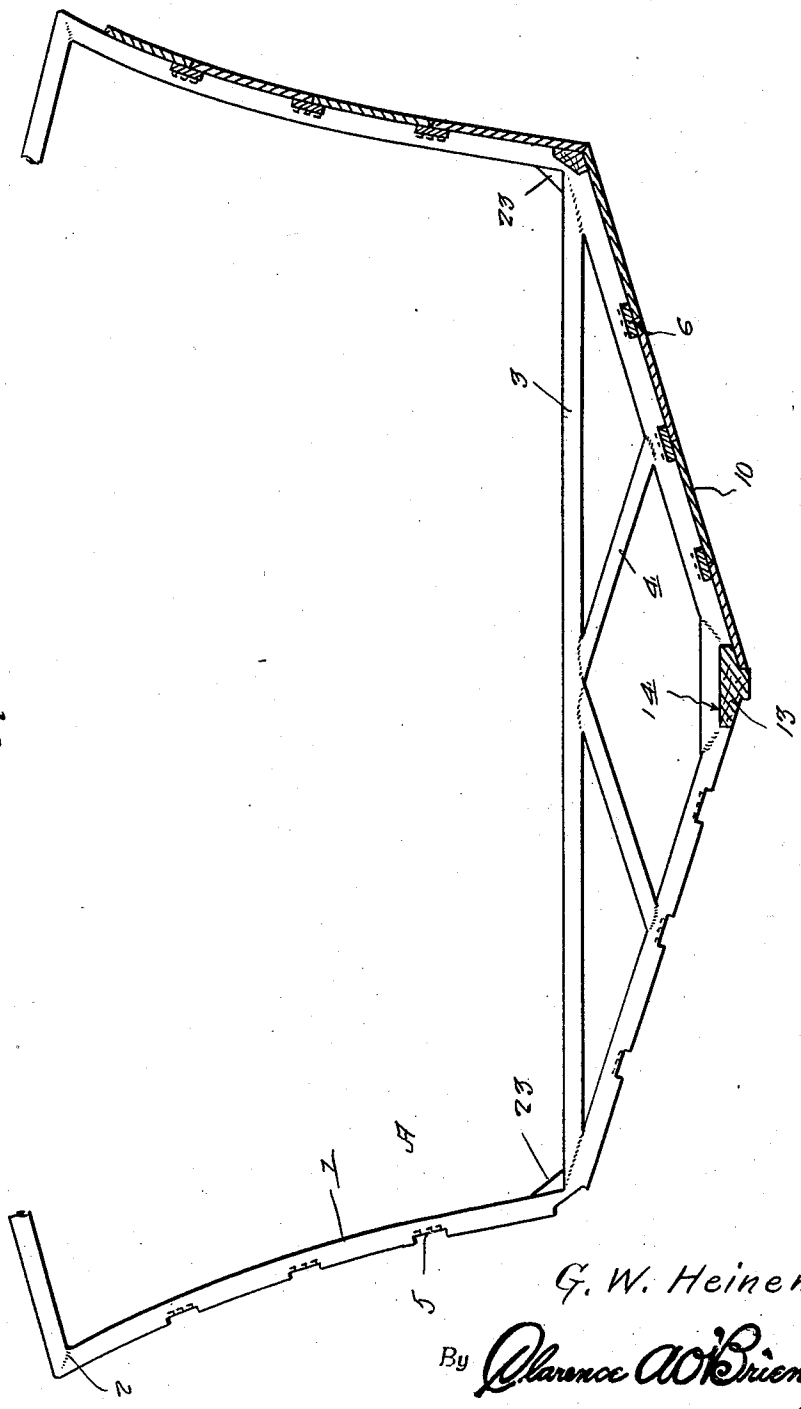


Fig. 1.

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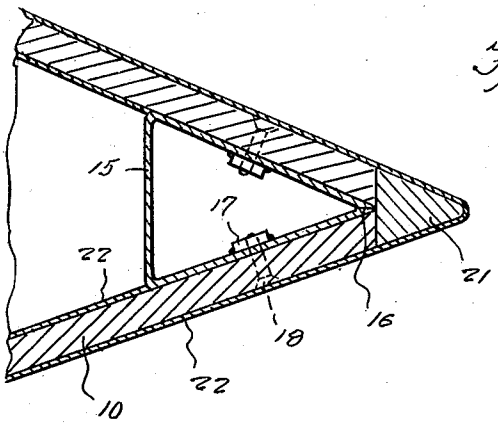
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Fig. 2.



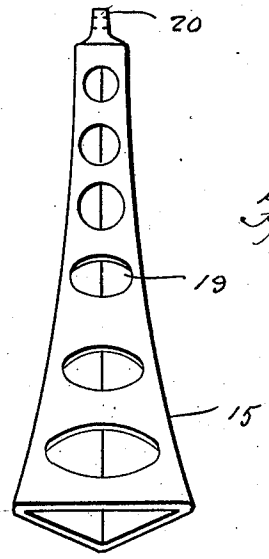
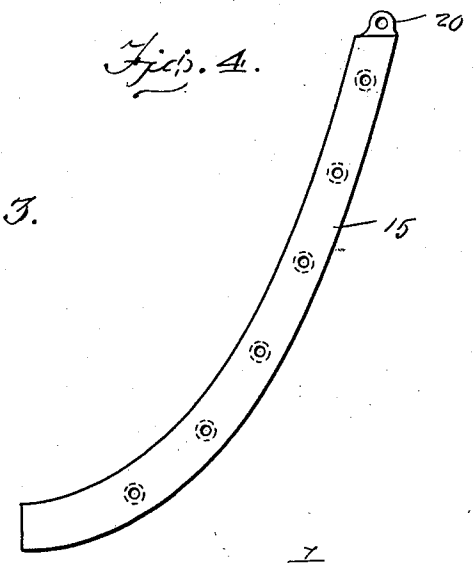


Fig. 3.

Fig. 4.



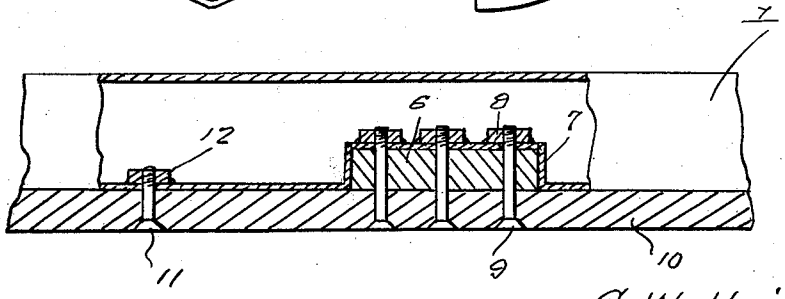


Fig. 5.

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Patented Dec. 22, 1931 1,837,710

UNITED STATES PATENT OFFICE

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BOAT CONSTRUCTION

Application filed March 10, 1931. Serial No. 521,587.

This invention relates to a boat construction, the general object of the invention is to provide a strong, seaworthy, light and durable boat of less than one-half of the weight of the lightest boats of the same proportions as now built, which enables the boat to have more speed per horsepower. Another object of the invention is to provide a boat which is portable in the smaller sizes of boats and the planking of which is easily renewed when necessary, and one which has great resistance to the absorption of water, and which can be shipped or transported in knockdown form.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing the invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is a transverse sectional view through portions of the boat constructed in accordance with the present invention.

Fig. 2 is a horizontal sectional view through the bow of the boat.

Fig. 3 is a view of the stem member.

Fig. 4 is a side view of said member.

Fig. 5 is a view partly in section showing how the seam battens and planks are connected to a frame part.

As shown in these views, the frame or rib assembly A of the boat, is built of aircraft, seamless steel tubing 1 or aluminum alloy tubing of any desired cross sectional shape, the joints 2 of which are welded or brazed or connected by gusset plates and bolts where necessary, as shown at 23. The bottom of the frame or rib assembly is braced by the horizontal members 3, and the diagonal members 4 as shown in Fig. 1, these members 3 and 4 also being of seamless steel tubing, and such members serve two purposes, namely, to brace the bottom and to supply a foundation for the flooring of the boat.

The ribs or frame parts are formed with the recesses 5 for receiving the seam battens 6. Each recess is sealed from outside air by a light sheet steel strip 7 welded or brazed in place. Nuts 8 are welded or brazed to the inside faces of these sheets to receive the threaded ends of the machine screws 9 which hold the battens 6 and the outside planks 10 in place.

The planks are also fastened to portions of the frame part by the machine bolts 11 having their threaded ends engaging the nuts 12, brazed or welded to the inside walls of the frame parts as shown in Fig. 5.

A keel 13 is also placed in a recess 14 formed in the central longitudinal part of the bottom of the frames, as shown in Fig. 1 and this keel is also held in place by machine bolts engaging nuts welded to the frame part in the same manner as the battens and planks are connected with the frame part.

A stem 15 is also built of light sheet steel of substantially triangular shape in cross section or any other suitable shape with the joint 16 welded or brazed and the nuts 17 for the machine screws 18 are welded to the inner faces of the stem as shown in Fig. 2. This stem is formed with the lightening holes 19 and at its upper end is formed with the eye 20 for receiving a rope or cable for tying the boat to the dock or the like.

The stem flares outwardly to the proper angle at its lower end to properly engage the front end of the keel 13. The machine screws 18 of course hold the front ends of the planks to the stem as shown in Fig. 2, and the nose of the boat is preferably formed of wood as shown at 21 in Fig. 2.

The planking is treated on both sides with a layer of aircraft fabric 22 treated with the usual dope so as to completely seal the wood and therefore the boat against gaining weight by water absorption. This also results in great resistance of hull against splintering by impact forces and makes the use of lighter planking possible. It also protects the boat against dry rot and marine growth and provides a finish that does not have to be renewed periodically, like scraping and repainting of conventional built boats.

The entire frame parts are cadmium plated,

galvanized or otherwise treated for preventing rust. As the frame parts are sealed and treated against rust and the planking is coated with fabric and dope, the boat has long life and will outlive boats as now constructed. By using the machine bolts and nuts, the boat can easily be knocked down for transportation and assembled at the point of use, and when the planking is damaged, through collision or otherwise, such planking can be easily renewed through the use of the machine bolts for connecting the planking to the frame.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claims.

Having thus described my invention, what I claim as new is:—

1. A boat of the class described comprising a frame part formed of steel or other metal tubing, the joints of which are welded or brazed, the outer portions of the frame parts having recesses therein for receiving the seam battens, each recess being sealed by a sheet metal member forming the sides and bottom of the recess, planking connected with the frame part and the battens, the longitudinal central part of the bottom of the boat having a recess therein formed with steel side and bottom walls, a keel in the recess, and a tubular stem formed of steel at the front end of the boat and having its lower end connected with the front end of the keel and to which the front ends of the planking are connected.

2. A boat of the class described comprising a frame formed of steel tubing, welded or brazed together, horizontal members also formed of steel tubing and extending across the bottom of the boat and acting to brace the same and form supports for the boat's flooring, truss members also formed of steel tubing connecting the horizontal members to the bottom portions of the frame, said parts being welded together, the outer portion of the frame part being recessed and the bottom and side walls of each recess being formed of steel, nuts welded to the inner faces of the bottom parts of the recesses, battens passing thru the recesses, planking forming the exterior walls of the ship and passing across the battens and portions of the frame, machine screws passing through the planking and the battens and engaging the nuts, machine screws and nuts for fastening portions of the planking to the frame part, the longitudinal central part of the bottom of the boat being recessed, a keel in said recesses, a tubular stem of metal at the front end of the boat, machine screws and nuts passed through the front ends of the said planking and said stem.

3. A boat of the class described comprising a frame formed of steel tubing, welded or brazed together, horizontal members also formed of steel tubing and extending across the bottom of the boat and acting to brace the same and form supports for the boat's flooring, truss members also formed of steel tubing connecting the horizontal members to the bottom portions of the frame, said parts being welded together, the outer portion of the frame part being recessed and the bottom and side walls of each recess being formed of steel, nuts welded to the inner faces of the bottom part of the recesses, battens passing through the recesses, planking forming the exterior walls of the ship and passing across the battens and portions of the frame, machine screws pasing through the planking and the battens and engaging the nuts, machine screws and nuts for fastening portions of the planking to the frame part, the longitudinal central part of the bottom of the boat being recessed, a keel in said recesses, a tubular stem of metal at the front end of the boat, machine screws and nuts passed through the front ends of the said planking and said stem, and fabric covering the inner and outer sides of the planking and treated with dope.

4. A boat of the class described comprising a frame formed of steel tubing, the joints of which are welded or brazed together, portions of the frame having recesses therein, the sides and bottoms of which are formed of steel parts, battens located in the recesses and passing across the frame parts, planking forming the exterior walls of the boat and connected with the battens and portions of the frame parts, and fabric covering the inner and outer faces of the planking and treated with dope.

5. A boat of the class described comprising a frame formed of steel tubing, the joints of which are welded or brazed, said frame being formed with recesses, the bottoms and side walls of which are formed of metal sheets, seam battens extending through the recesses and fastened therein, planking forming the exterior walls of the ship and connected with the frame parts and to the batten parts, recesses formed in the frame parts of the central part of the bottom thereof, a keel passing thru the recesses and fastened to the frame parts, a stem formed of tubular metal and to which the front ends of the planking are connected, the lower end of the stem being connected with the front end of the keel.

6. A boat of the class described comprising a plurality of transverse frame members each formed of hollow metal parts, the joints of which are welded or brazed, battens connected with the members and planking forming the exterior walls of the boat and con-

nected with the battens and portions of the frame part.

7. A boat of the class described comprising a plurality of transversely arranged frame parts each formed of metal tubing, the joints of which are welded or brazed, battens connected with the frame parts, planking forming the exterior walls of the boat and connected with the battens and portions of the frame part and fabric covering the inner and outer faces of the planking and treated with dope.

In testimony whereof I affix my signature.

GERNOT W. HEINEMANN