Aug. 10, 1926. 1,595,096

H. A. HOOKER

KNOCKDOWN BOAT

Filed Oct. 26, 1922 4 Sheets-Sheet 1

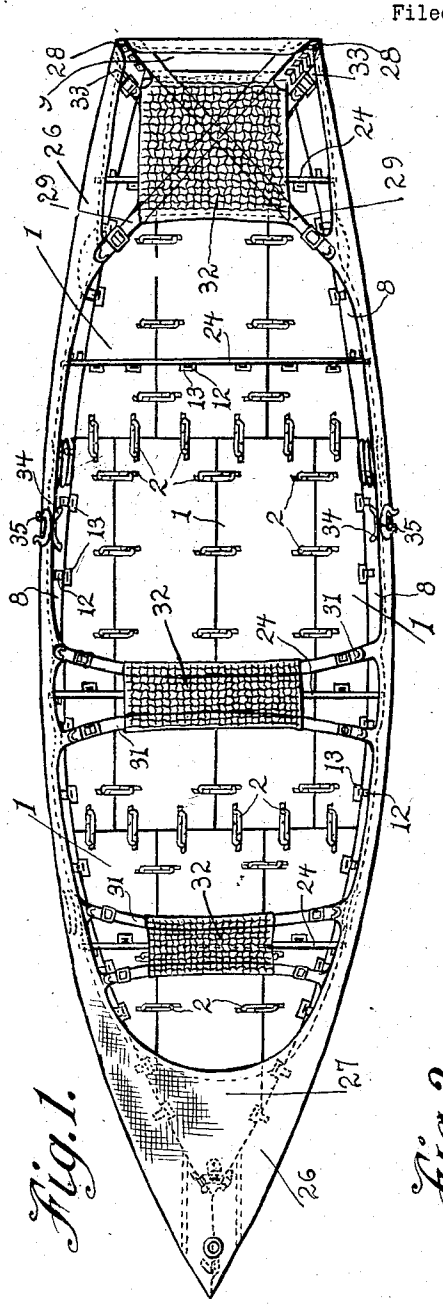


Fig. 1.

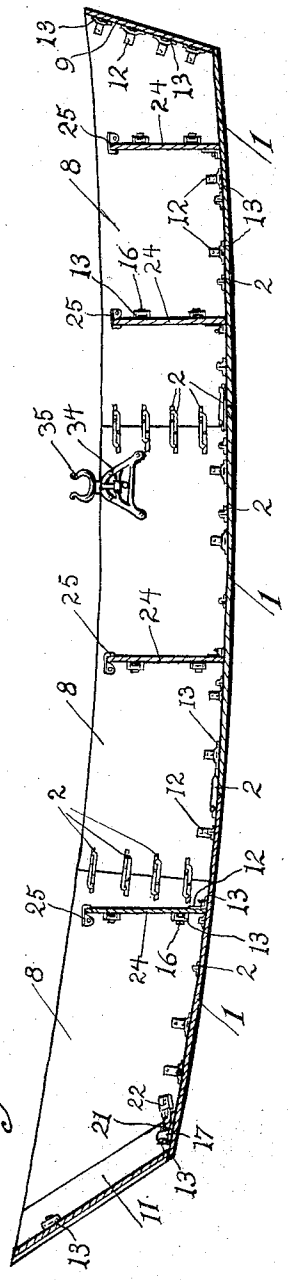


Fig. 2.

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Fig. 3.

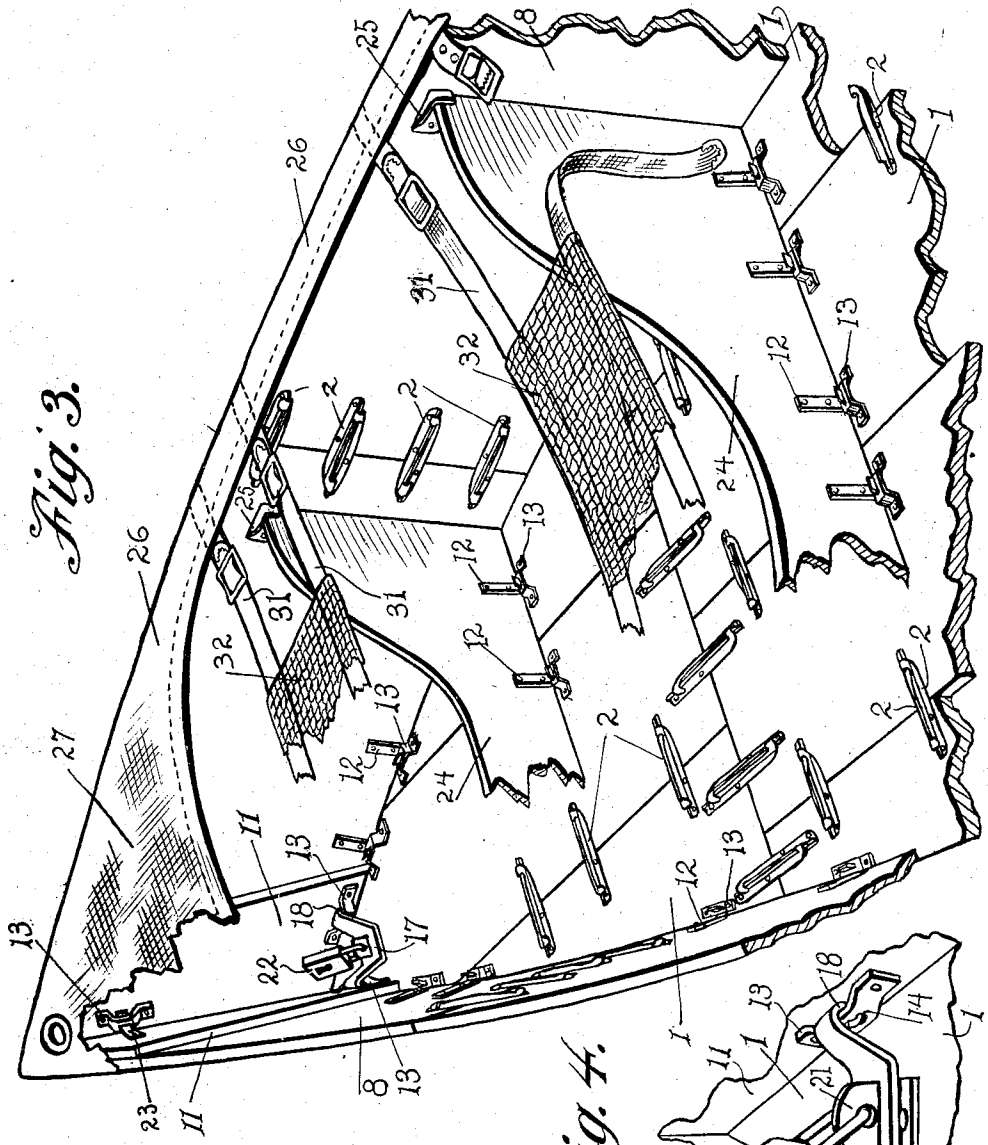


Fig. 4.

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Harry A. Hooker
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KNOCKDOWN BOAT

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Fig. 5.

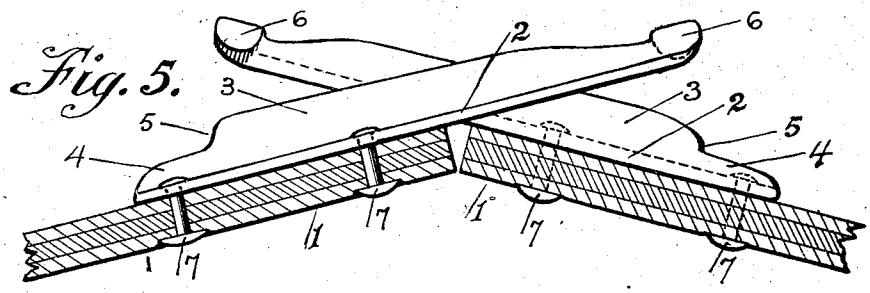


Fig. 6.

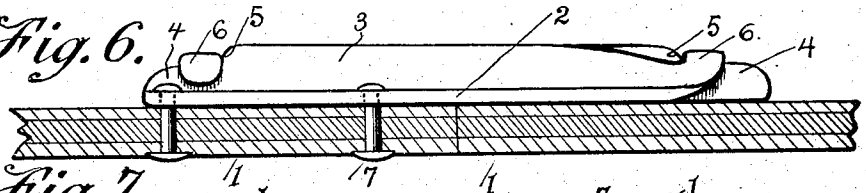


Fig. 7.

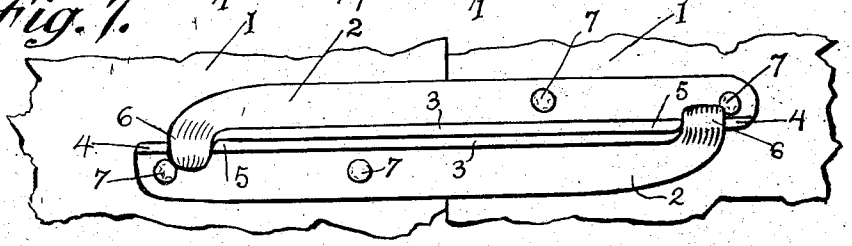


Fig. 8.

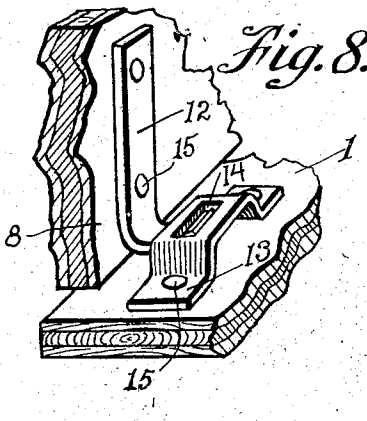
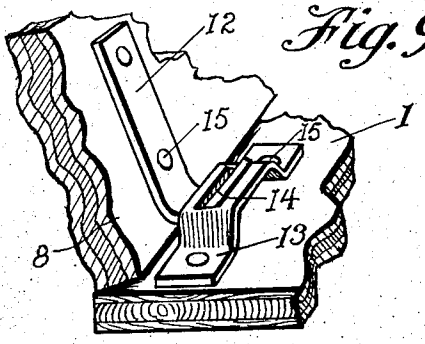


Fig. 9.



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KNOCKDOWN BOAT

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Fig. 10.

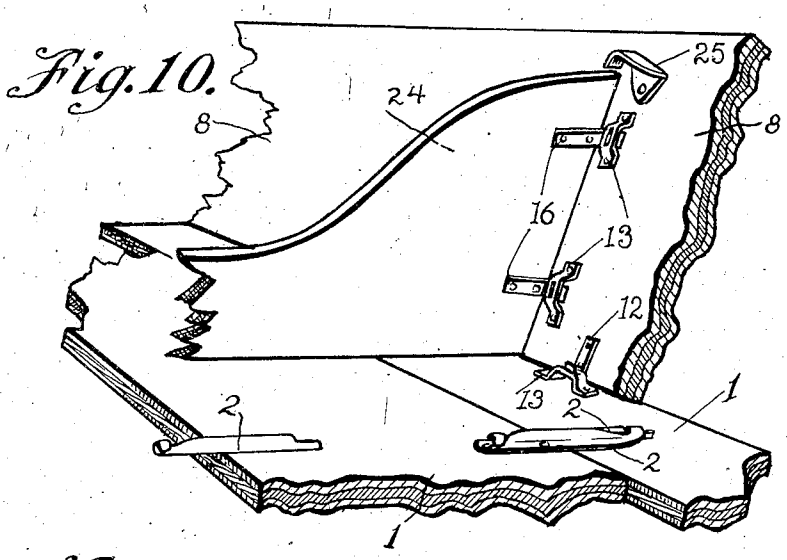
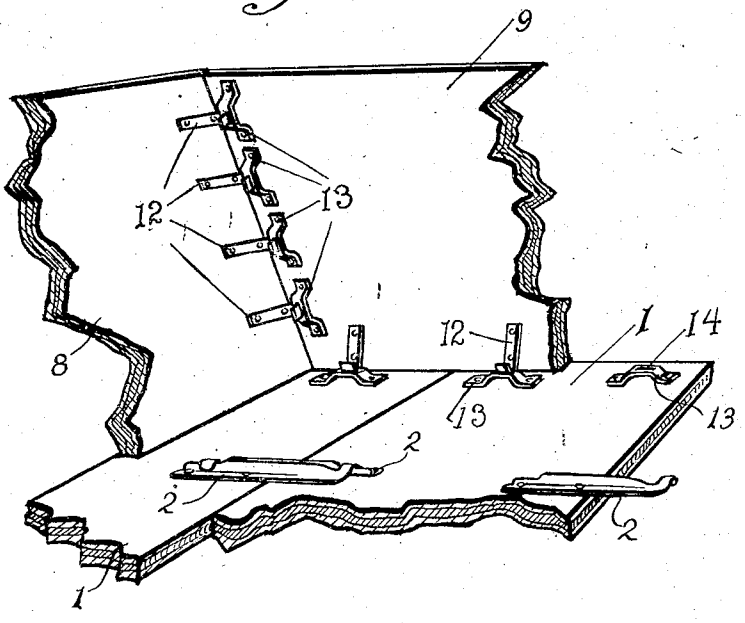


Fig. 11.



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Patented Aug. 10, 1926. 1,595,096

UNITED STATES PATENT OFFICE.

HARRY A. HOOKER, OF WILMETTE, ILLINOIS.

KNOCKDOWN BOAT.

Application filed October 26, 1922. Serial No. 597,135.

The main feature of my invention relates to a knockdown boat which may be easily and quickly assembled and disassembled and which when assembled is safe and seaworthy.

The invention is particularly adapted to small boats and embraces a knockdown hull and a flexible watertight envelope fitted over the hull and removable therefrom whereby when the boat is assembled the hull provides a substantially continuous support for the envelope against the pressure of the water and affords substantially complete protection to the envelope on the inside of the boat, and whereby when the boat is disassembled the envelope is disassociated with the hull with obvious advantage in packing and transportation.

Another feature of the invention relates to a knockdown hull which may easily and quickly be assembled and disassembled and which when assembled is rigid and well adapted for its purpose.

With these features in view my invention consists in certain features of novelty in the construction, combination, and arrangement of parts by which the said features and certain other features hereinafter appearing are effected, all as fully described with reference to the accompanying drawings and more particularly pointed out in the claims.

In the said drawings—

Figure 1 is a top plan view of a knockdown boat embodying the features of my invention.

Figure 2 is a central vertical section of the same with the envelope removed for purposes of clarity.

Figure 3 is an enlarged partial perspective view of the boat with parts broken away.

Figure 4 is an enlarged detail view of one of the fastening devices.

Figures 5 and 6 are enlarged side elevations of one of the interlock devices, Fig. 5 showing the device in released position and Fig. 6 showing the device in interlocked position.

Figure 7 is a top plan view of this device as shown in Fig. 6.

Figures 8 and 9 are perspective views showing another of the interlock devices, Fig. 8 showing the device in released position and Fig. 9 showing the device in interlocked position.

Figure 10 is a perspective view of another portion of the hull.

Figure 11 is a perspective view of still another portion of the hull.

Like characters of reference indicate like parts in the various views.

The boat shown in the drawings is of the flat bottom type and the bottom of the hull is composed of a plurality of suitably shaped flat laminated wood pieces 1 assembled in edge to edge relation in sections longitudinally of the hull with abutting end edges thereof disposed in straight transverse lines and with abutting side edges of the several sections staggered. These pieces are of uniform thickness and when assembled form a continuous outer or bottom surface and a continuous upper or inner surface and are releasably secured together each to adjacent pieces by interlock devices comprising pairs of identical interlock members 2. Each interlock member 2 is formed of metal and is of right angle section. One angle 3 of each of these interlock members has one end reduced at the outer edge, as indicated at 4, forming an endwise shoulder surface 5 facing outwardly toward the adjacent end, and the same angle has at the other end a portion outward of the base thereof turned edgewise with respect thereto outwardly of the outer face of the angle and then toward the base of the angle in spaced relation with the outer face thereof as indicated at 6. See Figs. 5, 6, and 7. Thus are provided spaced interlock portions facing transversely in opposite directions, the one comprising a longitudinally extending upwardly facing formation, i. e., the reduced portion 4 of the said angle and the other comprising a downwardly facing portion U-shaped in a transverse plane, i. e., the portion 6 as related to the normal portion of the said angle forming a U-shaped formation. The interlock members being identical the interlock formations are equally spaced and when they are arranged in proper longitudinal and in T-shape relation with the outer faces of the angles 3 thereof facing each other the portions 6 will extend in front of the shoulders 5 and over the outer edges of and down the inner faces the reduced portions 4 of the angles 3 whereby to releasably interlock the interlock members. See Figs. 6 and 7.

Each pair of interlock members 2 are secured to respective pieces 1 by means of the portions of the other or base angles thereof corresponding with the reduced ends 4 of the angles 2 thereof being secured against

the inner or upper faces of respective pieces 1 by rivets 7 passing through holes in the pieces 1 and the base angles and clamping the pieces 1 and base angles between the heads thereof. See Figs. 5 and 6. Each pair of interlock members is so secured with the end thereof having the U-shaped interlock formation projecting outwardly beyond the respective piece 1 and adapted to overlie the piece 1 to which its mate is secured, and are so positioned that they will interlock with the opposing edges of these pieces abutting, the U-shaped downwardly facing interlock portions disposed at the projecting end of the interlock members interlocking with the upwardly facing interlock portions at the secured portions of the interlock members to releasably secure the pieces 1. The interlock members when interlocked secure the pieces 1 against relative upward, edgewise, and separating movement and will release with relative downward pivotal movement of the secured pieces and are engaged by reversal of the releasing movement thereof. See Fig. 5. Thus is provided a small, light and effective interlock device which is easily and quickly interlocked and released and which is admirably adapted for the present purposes.

The bottom of the hull resists downward movement and cannot be disassembled except by downward pivotal movement of the bottom pieces 1 with respect to each other. The bottom pieces are arranged in sections longitudinally of the hull with abutting end edges thereof disposed in straight transverse lines and with the abutting side edges of the several sections staggered for purposes of strength.

The bottom pieces 1 are suitable shaped to form when assembled a pointed prow end and a transverse stern edge. The sides of the hull are formed by two series of suitably shaped flat laminated wood pieces 8, and the pieces of each series are adapted to be assembled in end to end relation along a respective marginal side edge of the bottom to form a respective side of the hull. A suitably shaped laminated wood stern piece 9 is adapted to be assembled on the marginal stern edge of the bottom with its vertical end edges cooperating with the rear end edges of the rear side pieces to form the stern corners. The front end side pieces converge and form the prow, the front ends thereof being reinforced by additional laminated wood pieces 11 secured to the inner faces thereof. The pieces of each series of side pieces are releasably secured together one to another by means of pairs of the interlocking members 2 secured against the inner faces thereof and releasing with outward pivotal movement of the secured pieces with respect to one another. These interlocking members are identical with the interlocking members 2 which secure the bottom pieces together and are secured to the side pieces in an identical manner.

The stern piece 9 and the side pieces 8 are releasably secured to the bottom and the rear end side pieces are secured to the stern piece by means of interlocking devices, each comprising a hook member 12 and an eye member 13 having an upwardly offset center portion provided with a slot 14 into which the doubled back portion of the hook member 12 is received. See particularly Figs. 8 and 9. The shanks of the hook members 12 and the ends of the eye members 13 are secured against the inner surfaces of respective pieces by rivets 15 in the same manner as the interlocking members 2 are secured to their respective pieces, the center portions of the eye members 13 being spaced from the pieces to which they are secured to permit the hook members to pass underneath the same and extend upwardly through the slots 14. The interlock devices securing the side pieces 8 to the bottom and the stern piece 9 to the bottom are arranged to release with inward facewise pivotal movement of the side and stern pieces with respect the bottom, see Fig. 8, and when interlocked the bottom edges of the side and stern pieces engage the upper surface of the bottom at the marginal edges thereof as shown in Fig. 9. The interlock devices securing the rear end side pieces to the stern piece are arranged to release with inward facewise pivotal movement of these side pieces with respect the stern piece. See Fig. 11. The hook interlock devices which secure the rear end side pieces with the bottom are disposed some distance forwardly of the stern piece, so that these side pieces may be interlocked with the stern piece after it has been interlocked with the bottom and then interlocked with the bottom by warping the forward ends of the side pieces inwardly at the top to interlock them with the bottom.

In assembling the hull the bottom is assembled first after which the stern piece is assembled thereon and then the side pieces are assembled thereon in succession beginning with the rear end side pieces and ending with the front side pieces, one of the front side pieces being interlocked to the bottom first and the other front side piece being interlocked by warping the front portion of the interlocked front end side piece outwardly at the top to permit interlocking of the other. By reason of the arrangement the hull must be disassembled beginning with the front end side pieces. Secured against the inner faces of respective reinforcing pieces 11 in a manner hereinbefore described are two eye members 13. A hasp member 17 has its one end encircling the portion of the center portion of one of these last mentioned eye members on one side of

the slot 14 thereof, as designated at 18, to form a hinge connection. See Figs. 3 and 4. The hasp member has a downwardly projecting angle portion 19 at the other end thereof which underlies the center portion of the other of these eye members. The center portion of the hasp member is offset downwardly and has a slot therein through which a staple 21, which is secured against the inner face of the underlying bottom piece, projects in a usual manner. A padlock 22 is engaged with the staple to prevent upward movement of the hasp member to disengage the angle portion 19 from the respective eye member 13. This device prevents the disassembly of the front end side pieces and inasmuch as the front end side pieces must be disassembled first it prevents disassembly of the hull. The front ends of the front end side pieces are prevented from weaving movement by an eye member 13 secured against the inner face of one of the reinforcing pieces 11 in a manner hereinbefore described adjacent the top and an angle piece 23 having one angle thereof secured against the inner face of the other reinforcing piece 11 in a manner hereinbefore described and having the other angle thereof engaged in the eye of the eye member to disengage therefrom with separating movement of the front ends of the front end side pieces.

Vertically disposed transverse laminated wood pieces 24 are disposed in the hull in longitudinally spaced relation and are shaped to engage the bottom and side pieces traversed thereby. The pieces 24 are releasably secured in the hull by eye members 13 secured against the inner faces of the bottom pieces 1 in a manner hereinbefore described, hook members 12 secured against faces of the pieces 24 and adapted to engage the slots of the members 13 with facewise pivotal movement of the pieces 24, eye members 13 secured against the inner faces of the side pieces 8, angle members 16 having one angle thereof secured against faces of the pieces 24 and having the other angles thereof adapted to underlie the center portions of respective eye members 13 and arranged to release therefrom with pivotal movement of the pieces 24 to release the interlocking devices securing the same with the bottom pieces, and releasable hook members 25 pivotally secured on the insides of the side pieces and adapted to engage the top edge portions of the pieces 24 to prevent releasing movement thereof. See Figs. 1, 2, 3, and 10. These transverse pieces 24 secured to the side and bottom pieces provide support to the side and bottom pieces against relative upward or downward movement and support the side pieces against inward and outward facewise movement. The pieces 24 are preferably proportioned to force the sides outwardly to put the entire structure under stress and to bow the bottom of the hull outwardly from bow to stern as shown in Fig. 2.

It will be observed that the hull includes a plurality of suitably shaped flat rigid pieces assembled into the form of the hull with face surfaces facing outwardly and releasably secured in said assembly. This construction permits of a structure affording a substantially complete outer hull surface with a reasonable number of pieces which may be conveniently packed for storage or transportation. The outer surfaces of these pieces are relatively disposed to form a continuous outer hull surface for purposes hereinafter appearing, and the construction, combination and arrangement of parts affords a light, strong, and dependable knockdown hull which is easily assembled and disassembled.

A flexible watertight envelope 26 is fitted over the hull to render it watertight and by reason of the outer hull surface being substantially complete a substantially continuous support is afforded to the envelope against the pressure of the water and in addition it is protected on the inside of the boat. Where as is shown the outer surfaces of the pieces composing the hull form are relatively disposed to form a continuous outer hull surface a smooth surface is presented to the water.

The marginal edge portion of the envelope is turned inwardly of the top of the hull and the envelope is extended completely across the top of the hull at the prow end, as designated at 27, forming a pocket into which the prow of the hull is disposed. See Figs. 1 and 3. Edge cuts 28 are formed in the marginal edge portion of the envelope at the stern corners thereof. These cuts permit fitting of the envelope on the hull and the removal thereof without stretching the same and accommodate shrinkage of the envelope. A pair of adjustable diagonal cross straps 29 are secured to the marginal edge portion of the stern portion of the envelope adjacent respective stern corners thereof and to the marginal edge portion of the envelope at respective opposite sides of the hull some distance forward of the stern corners and function to draw the envelope longitudinally and transversely at the rear end thereof. Intermediate adjustable cross straps 31 are secured to the marginal edge of the envelope at opposite sides of the hull to draw the intermediate portion of the envelope transversely. The straps 29 and 31 are of usual construction and are releasable to permit removal of the envelope. The cross straps 31 are arranged in pairs adjacently spaced, and secured to each pair of straps and to the diagonal cross straps intermediate the sides of the hull are seats

32 of large mesh fabric. Thus are provided comfortable seats, large mesh fabric being provided to permit the fabric to dry quickly when it becomes wet.

It will be observed that the cross straps 29 and 31 serve to maintain the envelope taut over the hull and in so doing serve to bind the hull structure together. Thus passengers sitting on the seats tighten the envelope and thereby bind the structure. The seat 32 which is supported on the diagonal cross straps 29 is substantially square and adjustable straps 33 are secured to the sides of this seat adjacent respective rear corners thereof and to the marginal edge of the envelope at respective sides of the hull adjacent the stern corners thereof and aid in maintaining the envelope taut over the hull.

Oar lock brackets 34 are secured against the inner faces of respective side pieces 8 and oar locks 35 are mounted therein.

While I have herein shown and particularly described the preferred embodiment of my invention I do not wish to be limited to the precise details of construction shown as changes may readily be made without departing from the spirit of my invention, but having thus described my invention I claim as new and desire to secure by Letters Patent the following.

Claims:—

1. A knockdown boat including a knockdown hull having a transverse portion at one end, a flexible watertight envelope fitted over the outer surface of the hull and removable therefrom, and having its marginal edge portion turned inwardly over the top of the hull and provided with marginal edge cuts at the corners of the hull formed by said transverse end portion and the sides, and a pair of adjustable diagonal cross straps secured to the marginal edge portion of the transverse end portion of the envelope adjacent respective sides of the envelope and to the marginal edge portion of the envelope at respective opposite sides of the hull some distance from said transverse portion.

2. A knockdown boat including a knockdown hull, a flexible watertight envelope fitted over the outer surface of the hull and removable therefrom, and a cross seat structure secured to the envelope on opposite sides of the hull.

3. A knockdown boat including a knockdown hull, a flexible watertight envelope fitted over the outer surface of the hull and removable therefrom, and a cross seat structure comprising a pair of straps having their ends secured to the marginal edge of the envelope at opposite sides of the hull and a seat mounted on the straps and disposed intermediate the sides of the hull.

4. A knockdown boat including a knockdown hull, a flexible watertight envelope fitted over the outer surface of the hull and removable therefrom, and a cross seat structure comprising a pair of cross straps having their ends secured to the marginal edge of the envelope and a large mesh fabric seat secured to the straps.

5. A knockdown boat including a knockdown hull pointed at its prow and having a flat transverse stern end, a flexible watertight envelope fitted over the outer surface of the hull and removable therefrom and formed to provide a retaining pocket at the prow end thereof into which the prow of the hull is disposed, adjustable straps secured to the stern portion of the envelope adjacent respective stern corners thereof and extending diagonally therefrom at the top of the hull and secured to respective opposite side portions of the envelope some distance forward of the stern portion, and adjustable intermediate cross straps secured to the envelope at opposite sides thereof and extending across at the top of the hull.

6. A knockdown boat including a knockdown hull pointed at its prow end and having a transverse stern end, a flexible watertight envelope fitted over the outer surface of the hull and removable therefrom and formed to provide a pocket at the prow end thereof into which the prow of the hull is disposed and having the remainder of its marginal edge portion turned inwardly over the top of the hull and provided with marginal edge cuts at the stern corners thereof, a pair of adjustable diagonal cross straps secured to the marginal edge portion of the stern portion of the envelope adjacent respective stern corners thereof and to the marginal edge portion of the envelope at respective opposite sides of the hull some distance forward of the stern corners, and adjustable intermediate cross straps secured to the marginal edge of the envelope at opposite sides of the hull.

7. A knockdown boat, hull including a plurality of flat laminated wood pieces adapted to be assembled into the form of the hull with face surfaces thereof forming the outer surface of the hull, a plurality of interlock devices and releasable means for preventing release of said interlock devices for releasably securing said pieces together each to adjacent pieces in said assembly and comprising members on the insides of and secured to said pieces, vertical transverse laminated wood pieces in the hull, interlock devices for securing said transverse pieces to each of the first mentioned pieces traversed thereby and including members on the insides of and secured to said first mentioned pieces and complemental members secured against faces of the transverse pieces, and releasable means for preventing release of the last mentioned interlock devices.

8. A knockdown boat hull including a plurality of flat rigid bottom pieces adapted to be assembled in edge to edge relation to form the bottom of the hull, a second plurality of flat rigid pieces adapted to be assembled in upstanding relation with the bottom to complete the hull, interlock devices for releasably securing the bottom pieces together each to adjacent pieces in said assembly and adapted to release upon releasing movement of the secured pieces with respect one another, and means cooperating with said interlock devices to releasably secure said pieces in assembly to form a rigid hull and adapted to prevent releasing movement of the bottom pieces with respect one another including devices releasably securing said second plurality of pieces with the bottom.

9. A knockdown boat hull including a plurality of flat rigid bottom pieces adapted to be assembled in edge to edge relation to form the bottom of the hull, a second plurality of flat rigid pieces adapted to be assembled in upstanding relation with the bottom to complete the hull, interlock devices disposed interiorly of the hull for releasably securing the bottom pieces together each to adjacent pieces in said assembly and adapted to release upon downward pivotal movement of these pieces with respect one another, and means cooperating with said interlock devices to releasably secure said pieces in assembly to form a rigid hull and adapted to prevent releasing movement of the bottom pieces with respect one another including interlock devices disposed interiorly of the hull and releasably securing said second plurality of pieces with the bottom and adapted to release with facewise pivotal movement of these pieces with respect the bottom.

10. A knockdown boat hull including a plurality of flat rigid bottom pieces adapted to be assembled in edge to edge relation to form the bottom of the hull, a second plurality of flat rigid pieces adapted to be assembled in upstanding relation therewith to complete the hull including two series of side pieces, the pieces of each series of side pieces being adapted to be assembled in end to end relation to form a respective side of the hull, interlock devices for respectively releasably securing the bottom pieces together each to adjacent pieces in said assembly and the pieces of each series of side pieces one to another in said assembly and adapted to release upon outward pivotal movement of the secured pieces with respect one another, and means cooperating with said interlock devices to releasably secure said pieces in assembly to form a rigid hull and adapted to prevent said releasing movement of the side and bottom pieces including interlock devices releasably securing said second plurality of pieces with the bottom and adapted to release with facewise pivotal movement of said second plurality of pieces with respect the bottom.

11. A knockdown boat hull including a plurality of flat rigid bottom pieces adapted to be assembled in edge to edge relation in sections longitudinally of the hull with abutting end edges thereof disposed in straight transverse lines and with abutting side edges of the several sections staggered, a second plurality of flat rigid pieces adapted to be assembled in upstanding relation with the bottom to complete the hull including two series of side pieces, the pieces of each series of side pieces being adapted to be assembled in end to end relation to form a respective side of the hull, interlock devices for respectively securing the bottom pieces together each to adjacent pieces in said assembly and the pieces of each series of side pieces one to another in said assembly and adapted to release upon outward pivotal movement of the secured pieces with respect one another, and means cooperating with said interlock devices to releasably secure said pieces in assembly to form a rigid hull and adapted to prevent releasing movement of the bottom and side pieces including additional interlock devices releasably securing said second plurality of pieces with the bottom and adapted to release with pivotal movement of these pieces with respect the bottom.

12. A knockdown boat hull including a plurality of flat rigid bottom pieces adapted to be assembled in edge to edge relation to form the bottom of the hull, a second plurality of flat rigid pieces adapted to be assembled in upstanding relation with the bottom to complete the hull and comprising a stern piece and two series of side pieces, the pieces of each series of side pieces being adapted to be assembled in end to end relation to form a respective side of the hull and the forward end side pieces converging to form the prow, and means for releasably securing said pieces in said assembly including a releasable means securing the forward end side pieces together and a plurality of interlock devices cooperating therewith to releasably secure said pieces together each to adjacent pieces, said interlock devices being arranged so that said releasable device prevents release thereof.

13. A knockdown boat hull including a plurality of flat rigid bottom pieces adapted to be assembled in edge to edge relation to form the bottom of the hull, a second plurality of flat rigid pieces adapted to be assembled in upstanding relation with the bottom to complete the hull and comprising a stern board and two series of side pieces, the pieces of each series of side pieces being adapted to be assembled in end to end rela-

tion to form a respective side and the forward end side pieces converging to form the prow, interlock devices securing the bottom pieces each to adjacent pieces in said assembly and the pieces of each series of side pieces one to another in said assembly and adapted to release upon outward pivotal movement of the secured pieces with respect one another, interlock devices securing the side pieces and the stern piece with the bottom and the rear end side pieces with the stern piece and adapted to release with facewise pivotal movement of the side pieces and stern piece with respect the bottom and with facewise pivotal movement of the rear end side pieces with respect the stern piece, and a releasable device securing the forward end side pieces together, said interlock devices being arranged so that said releasable device prevents release thereof.

14. A knockdown boat hull including a plurality of flat rigid bottom pieces adapted to be assembled in edge to edge relation to form the bottom of the hull, a second plurality of flat rigid pieces adapted to be assembled in upstanding relation with the bottom to complete the hull and comprising a stern piece and two series of side pieces the pieces of each series of side pieces being adapted to be assembled in end to end relation to form a respective side of the hull and the forward end side pieces converging to form the prow, a plurality of releasable devices for releasably securing said pieces together each to adjacent pieces, rigid transverse members in the hull, and releasable devices for releasably securing said transverse members in the hull.

15. A knockdown boat hull including a plurality of flat rigid bottom pieces adapted to be assembled in edge to edge relation to form the bottom of the hull, a second plurality of flat rigid pieces adapted to be assembled in upstanding relation with the bottom to complete the hull and comprising a stern piece and two series of side pieces, the pieces of each series of side pieces being adapted to be assembled in end to end relation to form a respective side of the hull and the forward end side pieces converging to form the prow, interlock devices securing the bottom pieces together each to adjacent pieces in said assembly and the pieces of each series of side pieces one to another in said assembly and adapted to release upon outward pivotal movement of the secured pieces with respect one another, interlock devices securing the side pieces and the stern piece with the bottom and the rear end side pieces with the stern piece and adapted to release with facewise pivotal movement of the side pieces and stern piece with respect the bottom and with facewise pivotal movement of the rear end side pieces with respect the stern piece, a releasable device securing the forward end side pieces together, said interlock devices being arranged so that said releasable device prevents release thereof, flat rigid vertically disposed transverse pieces in the hull, interlock devices for releasably securing said transverse members to the side and bottom pieces traversed thereby and adapted to release with facewise pivotal movement of the transverse members, and releasable means preventing releasing movement of said transverse members.

16. A knockdown boat hull including a plurality of flat laminated wood bottom pieces adapted to be assembled in edge to edge relation in sections longitudinally of the hull with abutting end edges thereof disposed in straight transverse lines and with abutting side edges of the several sections staggered, a second plurality of flat laminated wood pieces adapted to be assembled in upstanding relation with the bottom to complete the hull and comprising a stern piece and two series of side pieces, each series of side pieces being adapted to be assembled in end to end relation to form a respective side, the forward end side pieces converging to form the prow, interlock devices securing the bottom pieces each to adjacent pieces in said assembly and the pieces of each series of side pieces one to another and adapted to release upon outward pivotal movement of the secured pieces with respect one another, interlock devices securing the side pieces and the stern piece with the bottom and the rear end side pieces with the stern piece and adapted to release with facewise pivotal movement of the side pieces and stern piece with respect the bottom and with facewise pivotal movement of the rear end side pieces with respect the stern pieces, a releaseable device securing the forward end side pieces together, said interlock devices being arranged so that said releasable device prevents release thereof, flat vertical disposed transverse laminated wood pieces in the hull, interlock devices for releasably securing said transverse pieces to the side and bottom pieces traversed thereby and adapted to release with facewise pivotal movement of the transverse pieces, and releasable means preventing releasing movement of said transverse members, said interlocking devices, said releasable device and said releasable means including members on the insides of the first and second mentioned plurality of pieces and secured thereto.

17. A knockdown boat hull including a plurality of suitably shaped flat rigid bottom pieces adapted to be assembled in edge to edge relation to form the bottom of the hull and forming a pointed prow end and a transverse stern edge, a plurality of suitably shaped flat rigid pieces adapted to be as-

sembled in end to end relation along the marginal side edges of the bottom and meeting at the bow to form a pointed prow, a suitably shaped rigid stern piece adapted to be assembled along the transverse stern edge of the bottom with opposite edges thereof meeting the rear end edges of the sides, means detachably securing the adjacent edges of said pieces together in said assembly, flat rigid vertically disposed strut pieces within the hull and spaced longitudinally and extending transversely of the hull adapted to bow the sides of the hull outwardly at the tops thereof and shaped to engage the sides and bottom of the hull, and means releasably securing said strut pieces to the bottom and sides of the hull.

18. A device of the character described including a pair of complemental members each of which is provided with two longitudinally spaced interlock portions facing transversely in opposite directions, the interlocked portions of each member being adapted to interlock with respective interlock portions of the other member at the same time whereby to releasably secure the members, each pair of interlocking portions comprising a longitudinally extending formation and a U-shaped portion adapted to receive said longitudinally extending portion.

19. A device of the character described including a pair of complemental members each of which is provided with two longitudinally spaced interlock portions facing transversely in opposite directions, the interlock portions of each member being adapted to interlock with respective interlock portions of the other member at the same time whereby to releasably secure the members, each pair of interlocking portions comprising a portion U-shaped in a transverse plane and a longitudinally extending portion adapted to engage in said U-shaped portion and terminating in a shoulder surface uprising therefrom and disposed at the end thereof adjacent the other interlocking portion of the respective member to be engaged by the U-shaped portion when the members are interlocked.

20. A device for releasably securing two pieces including a pair of complemental members secured against corresponding surfaces of respective pieces with portions thereof projecting outwardly beyond respective pieces and adapted to overlie said corresponding surfaces of respective opposite pieces, and means including downwardly facing interlock formations on the extending portions of said members and complemental upwardly facing interlock formations on the secured portions of said members adapted to respectively interlock for releasably interlocking said members.

21. A device of the character described including a pair of complemental members of right angle section, one angle of each member having a portion outward of the base of this angle turning edgewise with respect thereto outwardly of the outer face thereof, said portions being adapted and arranged so that when the members are arranged side by side in T-shape relation with the outer faces of said angles facing each other each of said portions will each extend over an upright portion of the said angle of the other member for releasably interlocking the same.

22. A device of the character described including a pair of complemental members of right angle section, one angle of each member having a portion outward of the base of the angle turned edgewise with respect thereto outwardly of the outer face of the angle and then toward the base of the angle in spaced relation with the outer face thereof, said portions being adapted and arranged so that when the members are arranged side by side in T-shape relation with the outer faces of said angles facing each other these edgewise turned portions will extend over the outer edges of and down the inner faces of said angles for releasably interlocking the same, said members being provided with endwise facing shoulders equally spaced from and facing away from the edgewise turned portions of respective members and disposed so that said edgewise turned portions extend in front of the same for engagement therewith when the members are interlocked.

23. A device of the character described including a pair of complemental members of right angle section, one angle of each member having a corresponding end reduced at the outer edge forming an endwise shoulder surface facing outwardly toward the adjacent end, the same angle of each member having at the other end a portion outward of the base thereof turned edgewise with respect thereto outwardly of the outer face of the angle and then toward the base of the angle in spaced relation with the outer face thereof, these edgewise turned portions being equally spaced from the said shoulder surfaces of respective of said angles and adapted so that when the members are arranged side by side in proper longitudinal and in T-shape relation with the outer faces of said angles facing each other these edgewise turned portions will extend in front of said shoulder surfaces and over the outer edges of and down the inner faces of said reduced ends of said angles whereby to releasably interlock the members.

In witness whereof I hereunto affix my signature this twenty-first day of October, 1922, A. D.

HARRY A. HOOKER.