

Nov. 9, 1954

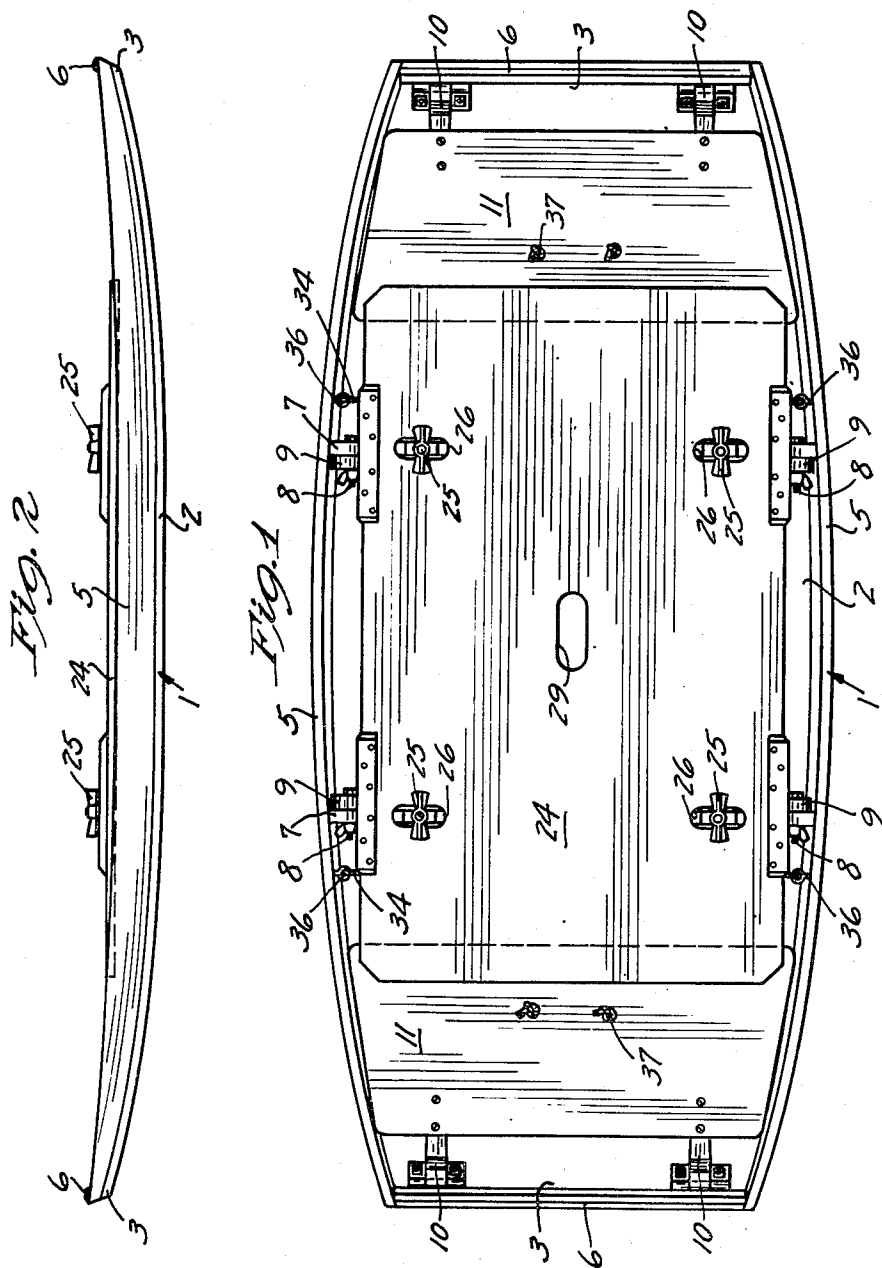
R. C. JEFFERSON

2,693,604

COLLAPSIBLE BOAT

Filed June 4, 1952

4 Sheets-Sheet 1



INVENTOR.

Rufus C. Jefferson

BY

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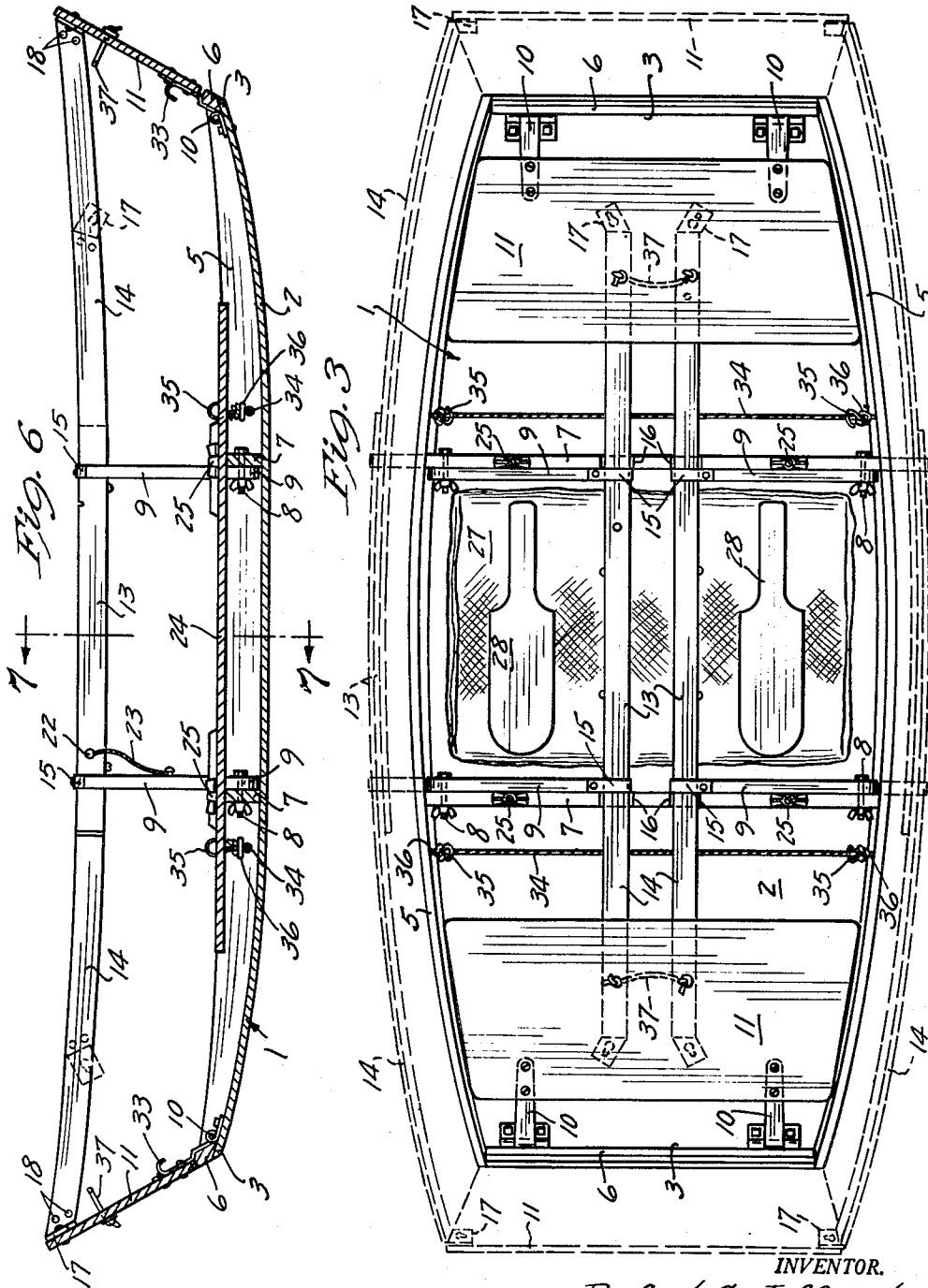
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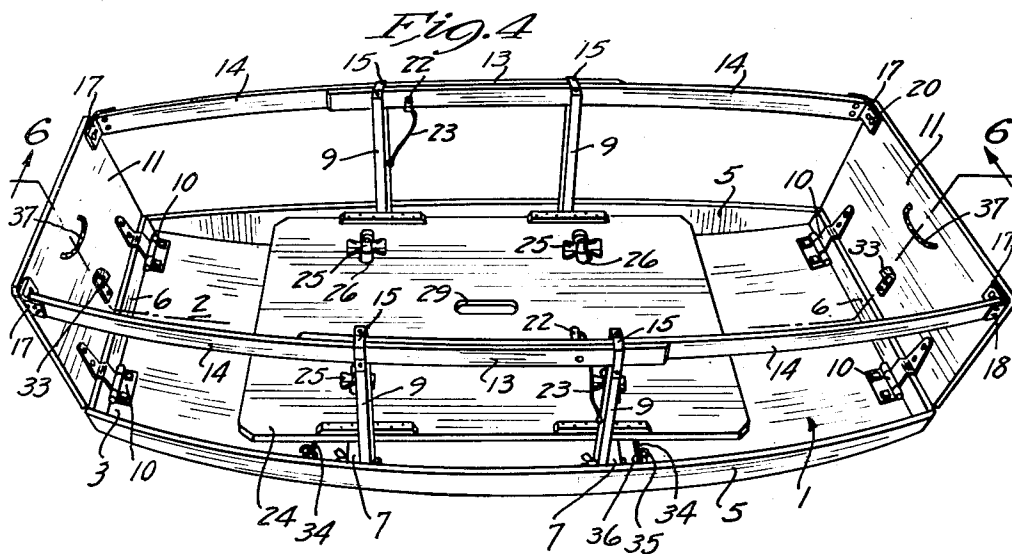
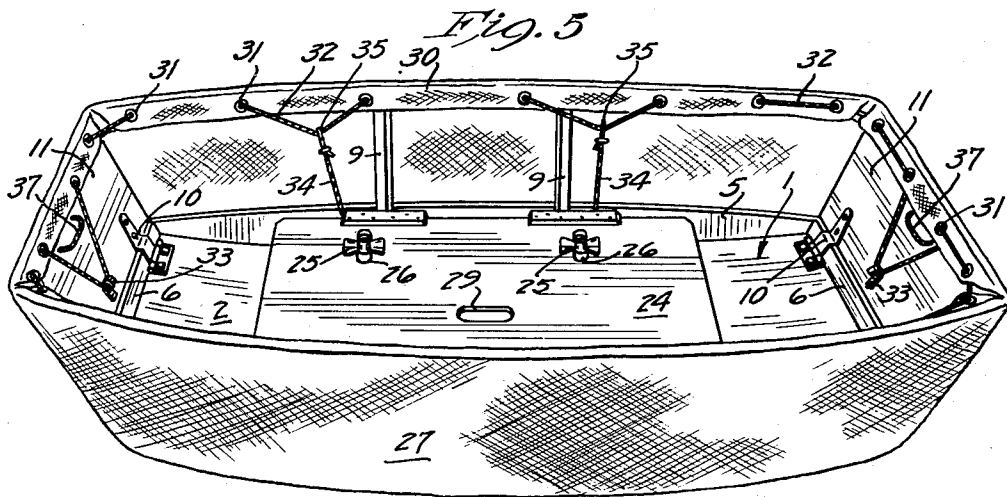
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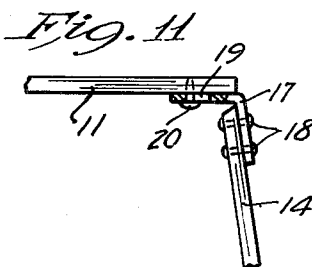
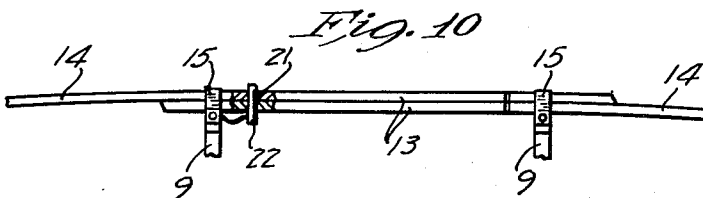
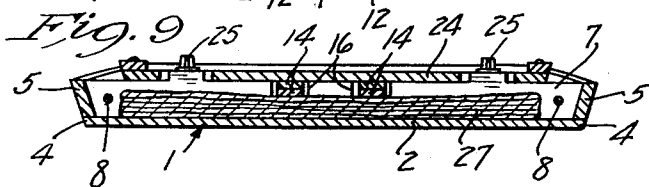
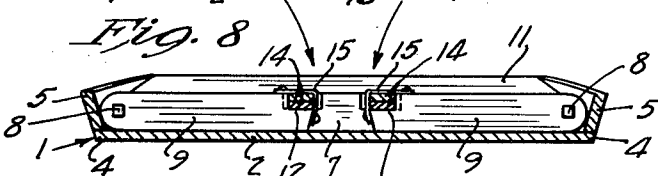
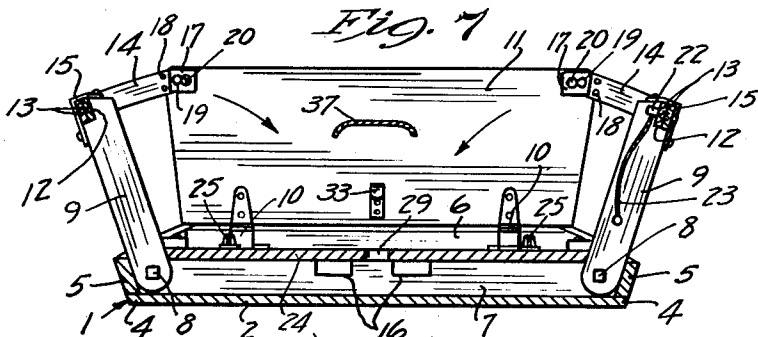
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COLLAPSIBLE BOAT

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Application June 4, 1952, Serial No. 291,688

6 Claims. (Cl. 9—2)

My invention relates to knock-down type boats and has for its primary object the provision of a relatively small boat, such as is used in hunting of ducks, or the like, which is extremely rugged and seaworthy when in an assembled position, and which forms a relatively small, compact, readily portable package when in its collapsed or folded inoperative position.

Another and highly important object of my invention is the provision of a structure of the class above-described which is inexpensive to construct, which is relatively light in weight, and which may be readily lifted or transported when in an assembled shape.

Another object of my invention is the provision of a structure of the class above-described, which has a rigid bottom, folding side and end frame elements secured to said bottom, expansible and contractible gunwales carried by said side frame members, and a hull-forming waterproof bag provided with means for readily detachably securing same to the assembled boat frame.

A still further object of my invention is the provision of a collapsible boat of the type immediately above described, which is provided with self-contained means for storing the hull-forming bag when the structure is in a collapsed condition.

The above and still further highly important objects and advantages of my invention will become apparent from the following detailed specification, appended claims and attached drawings.

Referring to the drawings which illustrate my invention, and wherein like characters indicate like parts throughout the several views:

Fig. 1 is a view in top plan of my novel structure with the parts thereof in a knocked-down position.

Fig. 2 is a view in side elevation of the structure of Fig. 1.

Fig. 3 is a view corresponding to Fig. 1, but showing by dotted lines a different position of some of the parts thereof, and with some of the parts removed.

Fig. 4 is a perspective view of the frame-forming parts of my novel structure, with the parts thereof in operative boat-forming condition.

Fig. 5 is a view corresponding to Fig. 4, showing my boat in a completely assembled condition.

Fig. 6 is a longitudinal section taken substantially on the line 6—6 of Fig. 4.

Fig. 7 is a transverse section taken substantially on the line 7—7 of Fig. 6.

Fig. 8 is a view corresponding to Fig. 7, showing the parts thereof in a folded position.

Fig. 9 is a view corresponding to Fig. 8, showing the hull-forming cover in position for storage.

Fig. 10 is a fragmentary detail in top plan of one of the pairs of gunwale-forming members of my invention, some parts being broken away and some parts being shown in section.

Fig. 11 is a fragmentary detail in top plan of a construction of one corner portion of my novel frame construction, some parts being broken away and some parts shown in section.

Referring with greater particularity to the drawings, the numeral 1 indicates in its entirety a bottom-forming member comprising a quadrilateral rocker-like bottom 2, the opposite end portions 3 of which are preferably, and as shown, generally parallel to each other, and the opposite sides 4 of which are outwardly bowed. Rigidly secured to the bottom 2 and upstanding therefrom

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along opposite edges 4, are a pair of relatively shallow sides 5. Ends 6 are rigidly secured to the bottom 5 adjacent the ends 3 and are rigidly secured at their opposite ends to sides 5. As shown, transverse reinforcing ribs 7 are longitudinally spaced from each other, but are located in the intermediate portion of the bottom 2. All the members 5, 6 and 7 project upwardly from the bottom 2 substantially a uniform distance, and terminate in substantially a common plane above the bottom 2. The bottom 2 is preferably formed from plywood, or the like, but obviously can be formed from any suitable material.

Pivotaly secured to the ribs 7 adjacent their opposite end portions, as indicated at 8, are side frame elements in the nature of arms 9. As shown, there are a pair of the arms 9 on each side of the bottom member 1. Arms 9 are adapted to swing from an upstanding operative position (see particularly Fig. 7), wherein they abut against the sides 5, to an inoperative position wherein they overlie and are generally parallel to the bottom 2 (see particularly Fig. 9).

Pivotaly secured to opposite end portions of the bottom 2 preferably, and as shown, through the medium of hinges 10, are transom-like front and rear frame-forming members 11. The frame-forming members 11 are adapted to be swung from their operative positions of Fig. 6, wherein they form an upward and outward extension of shallow end members 6, to the inoperative position of Figs. 3 and 8, wherein they overlie the bottom 2 and are generally parallel thereto.

As shown, the arms 9 are notched away as at 12 to receive the overlapping inner ends 13 of resilient gunwale-forming members 14. Angle irons, or the like, 15, provide aligned openings which confine the gunwale-forming members or bars 14 in each cooperating pair of arms 9, one pair on each side of the bottom member 1. As shown particularly by Figs. 7 to 9, inclusive, the transverse ribs 7 are notched centrally, as at 16, to receive the gunwale-forming members 14 therein when the bars 9 are moved to their inoperative folded position, as shown in Fig. 8. When the bars are in their operative position, as shown in Fig. 7, the gunwale-forming members 14 may be extended or retracted. When extended, they may be secured to the opposite side portions of the end-forming members 11 through the medium of leather straps or tongues 17 secured thereto by rivets or the like 18, and having therein openings 19 for the reception of headed screws or the like 20. When the gunwale-forming members are moved to the retracted position of Fig. 3, they may be received within the bottom member 1 with no portion thereof projecting above the sides or ends 5 and 6, respectively. Furthermore, as shown in Fig. 8, no portion of the arms 9 or gunwale-forming members 14 project materially above the ribs 7.

To lock the gunwale-forming members 14 in their extended position, I provide transverse aligned openings 21 which are adapted to snugly receive a dowel pin or the like 22, preferably, and as shown, secured to one of the arms 9 by means of a cord or the like 23 (see particularly Figs. 6 and 10). A floor board 24 is adapted to rest upon the ribs 7 and be supported thereby. Floor board 24 may be formed from any suitable sheet material, such as plywood, and is of a length to extend forwardly on one end and rearwardly on the other end of the ribs 7. The width of the floor board 24 is such that it is snugly received between the opposed pairs of arms 9 and definitely locks the same in their operative upstanding positions. In order to securely lock the floor board 24 in position, I provide pivoted cleats 25 which are receivable through slotted openings 26 therein.

When side frame-forming arms or members 9, together with the gunwale members 14 carried thereby and the end frame members 11 are swung to their folded inoperative positions, all thereof are received at least in part beneath the floor board 24 (see Fig. 1). Furthermore, as shown particularly in Fig. 9, the enclosure defined by bottom 2, sides 5, ribs 7 and floor board 24, provide a storage chamber for the waterproof hull-forming bag 27 (hereinafter to be described in greater detail) and paddles 28 and the like.

To facilitate insertion and removal of floor board 24 a central hand slot or opening 29 is provided.

Coming now to the hull-forming waterproof bag 27, the same is formed of treated canvas, or other waterproof sheeting, and is of a general shape to loosely fit over the assembled frame of Fig. 4. Along its upper edge hull-forming bag 27 is provided with a reinforced cuff or the like 30 which is adapted to be folded over the gunwale-forming members 14 and the end frame elements 11, and thereafter downwardly into the interior of the frame, as shown in Fig. 5. The reinforced cuff 30 is provided with spaced grommets 31 through which is threaded a drawstring 32. In order to draw the hull-forming bag 27 taut around the exterior of the assembled frame, I provide a downwardly-opening hook element 33 on each of the frame elements 11, and one or more elastic cords 34 with hook elements 35 on their opposite ends. As shown particularly in Figs. 3 and 6, the cord elements 33 extend transversely across the bottom 1 at longitudinally-spaced points, and are threaded through opposed eyelets 36 in the sides 5 of the bottom member 1. As shown in Fig. 5, the flexible cords 33 are stretched sufficiently to enable the hook elements 35 on opposite ends thereof to engage the drawstrings 32 and maintain same under tension. To facilitate lifting and handling of the assembled boat, shown in Fig. 5, I preferably provide rope handles, or the like, 37, which project inwardly from the upper intermediate portions of the transom-like end frame members 11.

My novel structure, above described, has been thoroughly tested and found to be completely satisfactory for the accomplishment of the objects above set forth, and while I have disclosed a preferred embodiment of my structure, it should be obvious that the same is capable of considerable modification without departure from the spirit and scope of the invention, as defined in the appended claims.

What I claim is:

1. A knock-down boat frame including a rigid bottom member, said bottom member comprising relatively low upstanding opposite sides and ends and a pair of longitudinally-spaced transverse reinforcing ribs spanning said sides at their intermediate portions, pairs of side frame elements hingedly secured to said reinforcing ribs adjacent opposite sides of said bottom member for inward swinging movements from upstanding positions, against said sides to folded inoperative positions overlying and generally parallel to said bottom, end frame elements hingedly secured to opposite ends of said bottom for swinging movements from operative positions forming extensions of the ends of said bottom to folded inoperative positions overlying and generally parallel to said bottom, extensible and retractable gunwale members carried by the outer free ends of said side frame elements, said gunwale members having means at their opposite ends for securing same to said end frame members, and means for positively locking said gunwale members in their extended operative positions.

2. The structure defined in claim 1, in which said gunwale members are in the nature of overlapping bars mounted for sliding movements in mounting brackets on the outer sides of said side frame members and in which said transverse reinforcing ribs are provided with recesses capable of wholly receiving said gunwale members, the pivotal connection and width of said side frame elements causing same to project not upwardly of the level of the ribs when the same are in their folded inoperative positions, and in further combination with a floor board adapted to overlie and rest upon said ribs, said floor board when in operative position abutting said side frame elements and positively limiting inward swinging movements thereof when same are in upstanding inoperative positions.

3. A knock-down boat frame including a rigid quadrilateral bottom member, said bottom member including a longitudinally arcuate bottom, outwardly bowed sides, outwardly and upwardly extending ends and a pair of

longitudinally-spaced centrally-positioned spanner ribs connecting the intermediate portions of said sides, said ribs sides and end projecting upwardly to and terminating in a common plane, pairs of side frame elements hingedly secured to said reinforcing ribs adjacent opposite sides of said bottom member for inward swinging movements from upstanding operative positions against said sides to folded inoperative positions overlying and generally parallel to said bottom, transom-like end frame elements hingedly secured to opposite ends of said bottom for swinging movements from operative positions forming upward and outward extensions of the ends of said bottom to folded inoperative positions overlying and generally parallel to said bottom, extensible and retractable gunwales in aligned openings in said side frame elements, said gunwales each including a pair of resilient bars mounted in said openings in side-by-side relationship and having means on their opposite ends for detachably securing same to opposite sides of said transom-like front and rear frame-forming elements, a floor board adapted to overlie and rest upon said ribs, said floor board extending longitudinally beyond said ribs and having a width approximating the distance between the opposed pairs of side frame elements, whereby to limit inward swinging movements of said side frame members from their operative positions, and means for releasably locking said floor board in operative position.

4. The structure defined in claim 3, in further combination with a waterproof hull-forming bag adapted to fit loosely over said frame when said frame is in operative position, said hull-forming bag being formed from flexible sheeting and having a drawstring-equipped reinforced upper edge portion which is adapted to fold over said gunwales and said end frame elements, hook means on the inner portions of said end frame members and on said bottom member for releasably hooking said drawstring, at least one of said hook means including a resilient member adapted to maintain said drawstring under tension.

5. The structure defined in claim 3, in which said arcuate bottom, its upstanding sides, said longitudinally-spaced ribs and said floor board define a storage space for said hull-forming bag, and in further combination with means for positively locking the gunwale-forming members in their extended operative positions.

6. A knock-down boat frame including a rigid bottom member, said bottom member comprising relatively low upstanding opposite sides and ends, pairs of side frame elements operatively hingedly secured to opposite sides of said bottom member for inward swinging movements from an upstanding position against said sides to folded inoperative positions overlying and generally parallel to said bottom, end frame elements hingedly secured to opposite ends of said bottom for swinging movements from operative positions forming extensions of the ends of said bottom to folded inoperative positions overlying and generally parallel to said bottom, extensible and retractable gunwale members carried by the outer free ends of said side frame elements, said gunwale members having means at their opposite ends for securing same to said end frame members, and means for positively locking said gunwale members in their extended operative positions.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
64,103	Hegeman	Apr. 23, 1867
403,171	Allen et al.	May 14, 1889
765,174	Fowler	July 19, 1904
2,250,127	Harman	July 22, 1941
2,332,259	Reuther	Oct. 19, 1943
2,580,465	Ronne	Jan. 1, 1952

FOREIGN PATENTS

Number	Country	Date
16,661	Great Britain	July 17, 1912