United States Patent [19]

Sisil

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[54] **FOLDABLE AND TRAILERABLE PONTOON BOAT**

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[52] **U.S. Cl.** ..... **9/1 T,** 9/2 R, 115/1 R

[51] **Int. Cl.** **B60f 3/00,** B63c 13/00

[58] **Field of Search** ..... 9/1 R, 1 T, 11 R, 9/2 C, 2 F; 114/0.5 F, 56, 61, 65 R; 115/0.5 A, 1 R, 1 A, 1 B; 280/414 R, 414 A, 414 B

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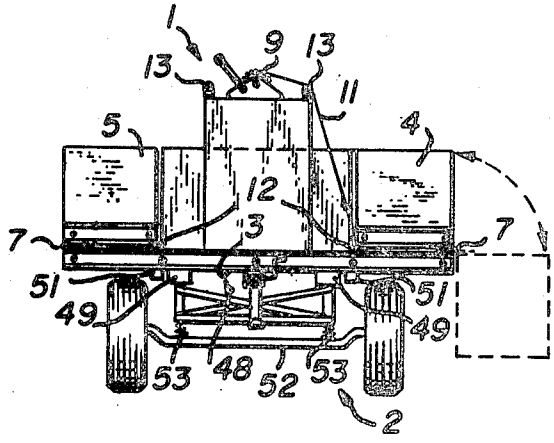
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[57] ABSTRACT

The foldable pontoon boat includes a pair of pontoons extending along and pivotably secured to thv opposite side edges ow a main deck. The pontoons are foldable between an inner folded position inboard of the main deck and an extended position below and outboard of thv main deck. A pair of channel beams are detachably secured by bolts across the bow and stern of the boat. The main deck includes an engine well having a hinged engine cover. A winch, centrally disposed of the boat, winches thv pontoons between the folded positions. The deck structure includes a retangular frame member with internal cross brace members sandwiched between a pair of plywood sheets on top and bottom sides of the deck.

7 Claims, 5 Drawing Figures



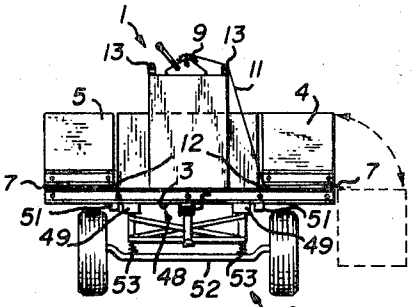


Fig_1

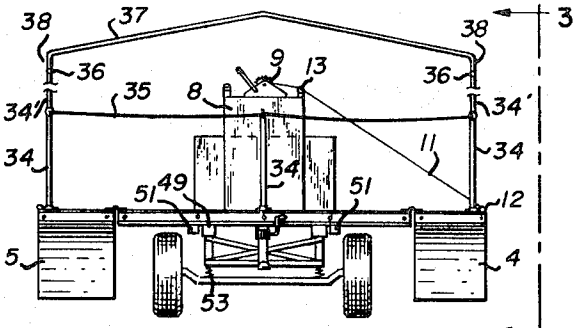


Fig_2

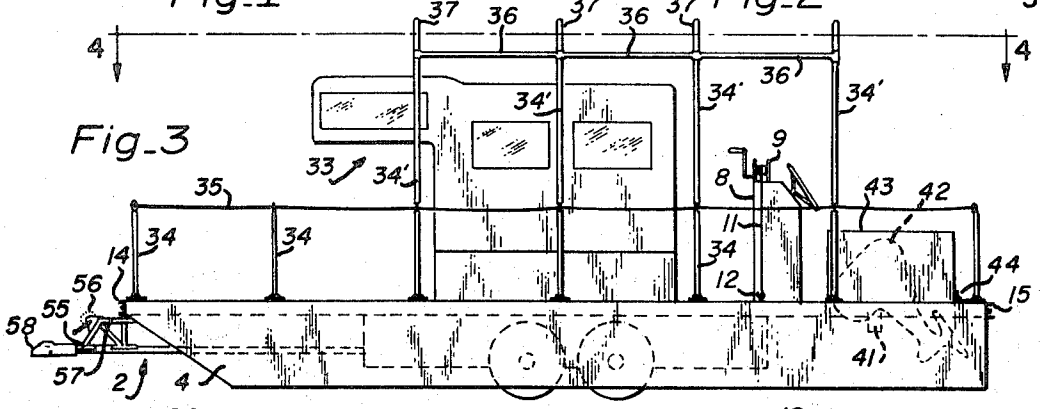


Fig_3

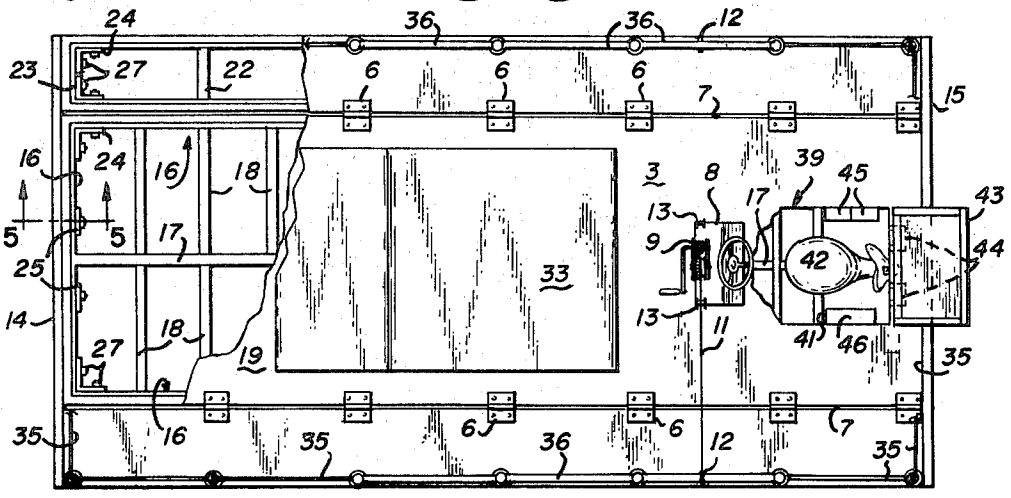


Fig_4

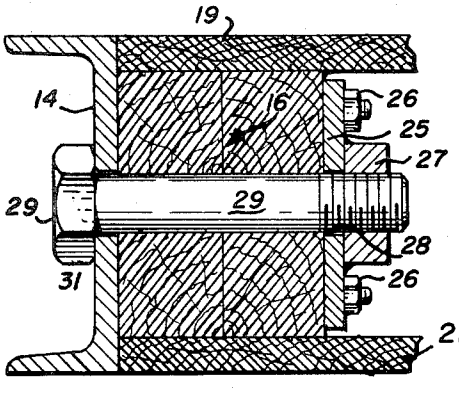


Fig_5

FOLDABLE AND TRAILERABLE PONTOON BOAT

DESCRIPTION OF THE PRIOR ART

Heretofore, trailerable and foldable pontoon boats have been proposed wherein the pontoons, which extend along the marginal side edges of the main deck, have been pivoted about the side edge of the deck from a folded position above the deck to an unfolded or extended position below the deck. Examples of such pontoon boats are disclosed in U.S. Pat. No. 3,099,977 issued Aug. 6, 1963, and U.S. Pat. No. 2,588,084 issued Mar. 4, 1952. In the first mentioned prior art reference, a pipe frame structure is disposed above the surface of the main deck to hold the pontoons in their extended position, and to provide cross bracing for the pontoon boat. In addition, a beam member was provided near the stern above the deck for further assisting transverse bracing of the pontoon boat. An outboard motor was mounted to the beam at the stern for propelling the boat.

In the second mentioned prior art reference, the pontoons were held and supported in their unfolded extended position by means of I-beams ratcheted out from the main deck within tubes carried in the pontoons and main deck. Both of the aforecited prior art methods for obtaining support for the pontoons in the extended position entails the use of a relatively complicated structure thereby adding substantial expense to the manufacturing costs of the boat.

Another problem with such prior art foldable pontoon boats is that, when the boat is relatively large, as of 20 feet or longer in length and 10 to 12 feet wide, the pontoons become relatively heavy and difficult for the operator to manually fold and unfold. Therefore, it is desired to provide a relatively simple means to assist the operator in folding and unfolding the pontoons.

SUMMARY OF THE PRESENT INVENTION

The principal object of the present invention is the provision of an improved foldable and trailerable pontoon boat.

In one feature of the present invention, a pair of beam structure are connected across the bow and stern respectively of the boat, when the pontoons are in the extended position, such beam structures being detachably connected to the pontoons and to the main deck portion to provide a unitary boat having a relatively high strength.

In another feature of the present invention, the main deck of the foldable pontoon boat includes a generally rectangular main deck structure having a plurality of internal cross brace members fixedly secured within and to the frame, and such cross brace members being sandwiched between sheet shaped structural members disposed above and below the frame to provide a rigid strong main deck.

In another feature of the present invention, the main deck has an engine well therein to accommodate an engine and wherein the well includes a movable engine housing structure covering the engine well.

In another feature of the present invention, a winch and cable is mounted above the main deck intermediate the length of the pontoons, and the pontoons include means for attaching the cable at a lifting point along the outer marginal edge of each of the pontoons, when the pontoons are in the extended position,

whereby the winch and cable serves to assist the operator in folding and unfolding the pontoons.

Other features and advantages of the present invention will become apparent upon a perusal of the following specification taken in connection with the accompanying drawings, wherein:

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an end view of the trailered pontoon boat with the pontoons in the inboard folded position, such boat incorporating features of the present invention,

FIG. 2 is a view similar to that of FIG. 1 depicting the pontoons in the extended unfolded position with a guard rope and peaked roof support installed,

FIG. 3 is a side elevational view of the structure of FIG. 2 taken along lines 3—3 in the direction of the arrows and modified to show the camper body carried upon the boat,

FIG. 4 is a plan view of the structure of FIG. 3 taken along line 4—4 in the direction of the arrows and being partly broken away to show certain of the structural elements of the boat, and

FIG. 5 is an enlarged sectional view of the structure of FIG. 4 taken along line 5—5 in the direction of the arrows.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to FIG. 1, there is shown the foldable pontoon boat 1 carried upon a trailer 2. The pontoon boat 1 includes a rectangular main deck structure 3 with a pair of elongated pontoons 4 and 5 pivotably secured to the opposite side marginal edges of the main deck 3 via the intermediary of a plurality of hinge structures 6 more clearly shown in FIG. 4.

Each pontoon is pivotable about a respective axis of rotation 7 between an inner folded position above and inboard of the marginal edge of the main deck and an extended position below and outboard of the main deck. The extended position for pontoon 4 is shown in FIG. 1 by the dotted lines and both pontoons, in the extended position, are shown in FIG. 2.

A helm structure 8 is mounted centrally and above the main deck 3 intermediate the length of the pontoons 4 and 5. A winch 9 is mounted to the top of the helm 8. The winch 9 carries a cable 11 which is connected to a lifting ring or eye 12 mounted to the outboard marginal side edge of the respective pontoon, when the pontoon is in the extended position. The winch cable 11 passes over a selected one of pair of pulleys 13 mounted to the helm 8.

The pontoons 4 and 5 are unfolded by winding the cable 11 on the winch such as to pivot the respective pontoon about the respective pivot axis 7. When the pontoon has been lifted from the deck 3 via the winch to a position such that its center of gravity is near to or directly over the respective pivot axis 7, the pontoon may be easily pushed over the dead center position by the operator and then allowed to fall via its own weight against the drag of the winch until the respected pontoon drops into the extended position as shown in FIG. 2. The lifting cable is then removed from that pontoon and attached to the other pontoon to assist the operator in unfolding the second pontoon.

After the pontoons 4 and 5 have been unfolded into the extended position, as shown in FIGS. 2 and 3, a pair of beams 14 and 15, such as the 4 inches steel channel

members, are bolted across the bow and stern, respectively, of the trailered boat for rigidly supporting the pontoons 4 and 5 in the extended position. More particularly, referring now to FIGS. 4 and 5, the main deck structure 3 includes a generally rectangular frame structure 16 formed, for example, by a double thickness of 2×4 wooden members glued and screwed together to form a rigid rectangular frame 16 having a length equal to the length of the boat, as of 24 to 30 feet, and a width corresponding to the width of the main deck section 3, as of 6 to 8 feet. The rectangular frame 16 includes a central 2×4 longitudinal strut 17 cross braced to the sides of the frame 16 via the intermediary of transverse cross brace strut members 18, for example, 2×4's. The cross braced frame 16 is sandwiched between a pair of plywood sheets 19 and 21, as of ¾ inch and ½ inch thick marine plywood, respectively. The plywood deck members 19 and 21 are preferably glued and screwed to the frame 16 and to cross brace members 17 and 18 via screws on 6 inches center spacing.

The pontoons 4 and 5 have a length equal to the length of the boat, as of 24 to 30 feet, and are of rectangular cross section as of 2 × 2 feet square. The pontoons are cross braced at 4 feet intervals via bulkheads 22. Each bulkhead 22 includes a 2 × 2 feet rectangular frame of 2 inches frame members screwed and glued to a ¾ inch plywood bulkhead member having dimensions corresponding to the inside cross sectional dimensions of the respective pontoon. The outer skin of the pontoon is formed by ½ inch plywood screwed and glued to the bulkhead members 22 along the sides and bottom of the pontoon when in the extended position. The upper deck portion of the pontoon is constructed of ¾ inch plywood. The pontoon is then coated with fiberglass for increased strength and to insure a watertight construction.

In addition, the bulkheads 22 are sealed in a watertight manner to the inside wall of the pontoon to provide a plurality of watertight compartments within each of the pontoons. A double thickness of 2 × 4 inches cross-bracing members 23 are provided at opposite ends of each of the pontoons 4 and 5.

Steel ¼ inch thick angle plates 24 are provided at each corner of the deck frame 16 and at each corner of the upper ends of the pontoons 4 and 5. In addition, a pair of ¼ inch steel plates 25 are bolted to the ends of the rectangular deck frame 16 intermediate the corner plates 24 via bolts 26 provided in the corners of the respective plates. The corner plates 24 and the intermediate plates 25 each include a ½ inch nut 27 welded to the plate in alignment with a hole 28 through the plate. The end frame structure 16 and the end reinforcing member 23 of each pontoon is bored in alignment with the nuts 27 to receive a ½ inch structural bolt 29 which passes through a hole 31 in the web portion of the channel 14 or 15, such aperture 31 being in alignment with the holes bored through the frame 16 or 23. Thus, each channel member 14 and 15 is detachably secured across the ends of the main deck 3 and pontoons 4 and 5 via the intermediary of 8 structural bolts 29 threaded into nuts 27 welded to the plates fixed on the inside of the frame 16 and pontoons 4 and 5.

A camper body 33 shown in FIG. 3, may be loaded in the center of the trailered boat. A plurality of pipe stanchions 34 are threaded on one end and screwed into threaded sockets provided around the periphery of the boat 1. The upper end of some of the stanchions 34 includes a ring welded to the end of the pipe to form an eye through which a guard rope 35 is strung. A plurality of the stanchions 34', such as four on each side of the boat, approximately midships of the boat, include pipe extensions extending well above the deck 3, such as to an elevation above the deck of 8 feet. These stanchions 34' are interconnected via longitudinal cross pipe members 36 and transverse peaked roof support rods 37, each having down turned end portions 38, inserted into the open ends of the pipe stanchions 34' for supporting a canvass roof over a portion of the boat.

The central after-section of the deck 3 includes an engine well portion 39 having an engine support strut 41 mounted thereacross to which an outboard motor 42 is clamped in the conventional manner. Control cables, not shown, interconnect the helm 8 with the motor 42 for steering the boat 1 via pivoting of the outboard motor 42. An engine cover 43, as of ½ inch plywood, having a length, as of 4 feet a width as of 4 feet and a height as of 2 feet, is hinged at the rear to the deck 3 via hinges 44. The engine housing 43 serves as a seat and also swings back as shown in FIG. 4 for access to the outboard motor 42 and to racks for batteries 45 and a gasoline tank 46.

The trailer 2 is preferably a two axle tandem wheel trailer. The trailer 2 includes a rectangular support carriage structure 48, as of angle iron, with vertical supports to support longitudinal runners 49 which serve to support the lower side of the main deck 3 and which fit inbetween a pair of elongated guide members 51 fixedly secured to the underside of the main deck 3 and extending longitudinally thereof (see FIGS. 1 and 2). The carriage 48 is supported from the axles 52 via coil springs 53. The trailer 2 includes a towing tongue 55 to which is affixed a winch 56 having a cable 57 wound thereon for winching the boat 1 onto the trailer 2. A conventional ball and socket type connector 58 is affixed to the end of the towing tongue 55 for connection to the ball member carried from the towing vehicle.

Since many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings will be interpreted as illustrative and not in a limiting sense.

What is claimed is:

1. In a foldable pontoon boat, a generally horizontally disposed main deck structure, a pair of generally parallel elongated pontoons extending along and secured to the opposite side marginal edge portions of said main deck structure, said pontoons being rotatable about axes parallel to a longitudinal axis of the boat between an inner folded position and an extended position below and outboard of said deck structure, a pair of one piece elongated generally parallel metallic channel members extending transversely of and generally coextensive with the transverse extent of said main deck structure and said pontoons when said pontoons are pivoted into the extended position, said pair of channel members being disposed at the bow and stern respectively of the foldable pontoon boat, and means for detachably securing said pair of channel members to said pontoons and to said main deck structure.

2. The apparatus of claim 1 wherein said means for detachably securing said channels to said deck struc-

ture and to said pontoons includes a plurality of bolts passing through an apertured web portion of said channels for bolting said channels to said deck structure and to said pontoons.

3. The apparatus of claim 1 wherein each of said pontoons is rotatable about its respective axis of rotation by approximately 180° and wherein said channel members are secured across the respective end of said deck and pontoons at the vertical forward and aft side marginal edges of said deck.

4. The apparatus of claim 1 wherein said deck structure includes a generally rectangular frame structure having a plurality of cross brace members fixedly secured within and to said frame structure and wherein said deck structure includes a sheet-shaped structural member secured to and covering over at least the top of said cross brace members to form a composite deck structure.

5. The apparatus of claim 1 wherein said main deck structure has a well therein to accommodate an engine, and a movable engine housing structure covering said engine well.

6. The apparatus of claim 5 wherein said engine housing structure is hinged to said deck structure to be pivoted away from said well for access to said engine well.

7. The apparatus of claim 5 including an engine mounted in said well.

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