United States Patent

Miklos

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[54] MOTOR BOAT PROPELLED PONTOON BOAT

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[52] **U.S. Cl.** .....**114/235 R,** 114/0.5 BD, 114/43.5
[51] **Int. Cl.** **B63b 21/00,** B63b 35/44
[58] **Field of Search** .....114/235 R, 43.5, 66.5 P, 0.5 BD, 114/45, 51

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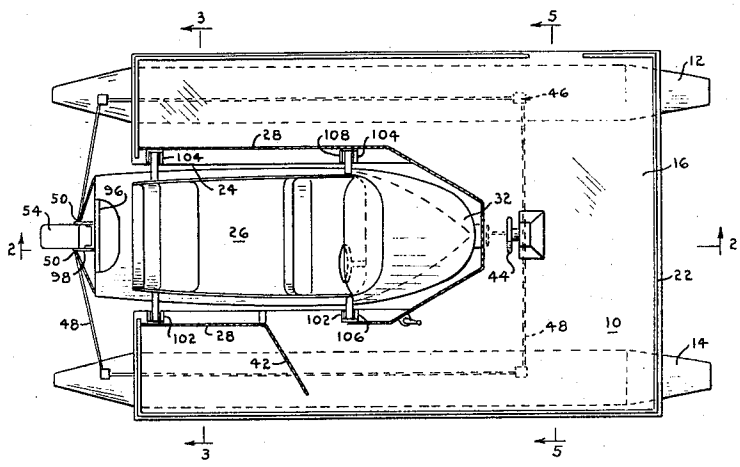
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[57] **ABSTRACT**

This invention relates to pontoon boats which normally carries a dingy for transporting the passengers to and from the pontoon boat. The stern end of the pontoon boat is provided with a novel structure for incapsulating a motor boat which provides the motive means to propel the pontoon boat. This invention combines the motor boat and pontoon boat to form an integral structure for purposes of propulsion of both crafts. Both crafts are separable when it is desired to use the motor boat as a tender craft.

8 Claims, 10 Drawing Figures



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3 Sheets-Sheet 1

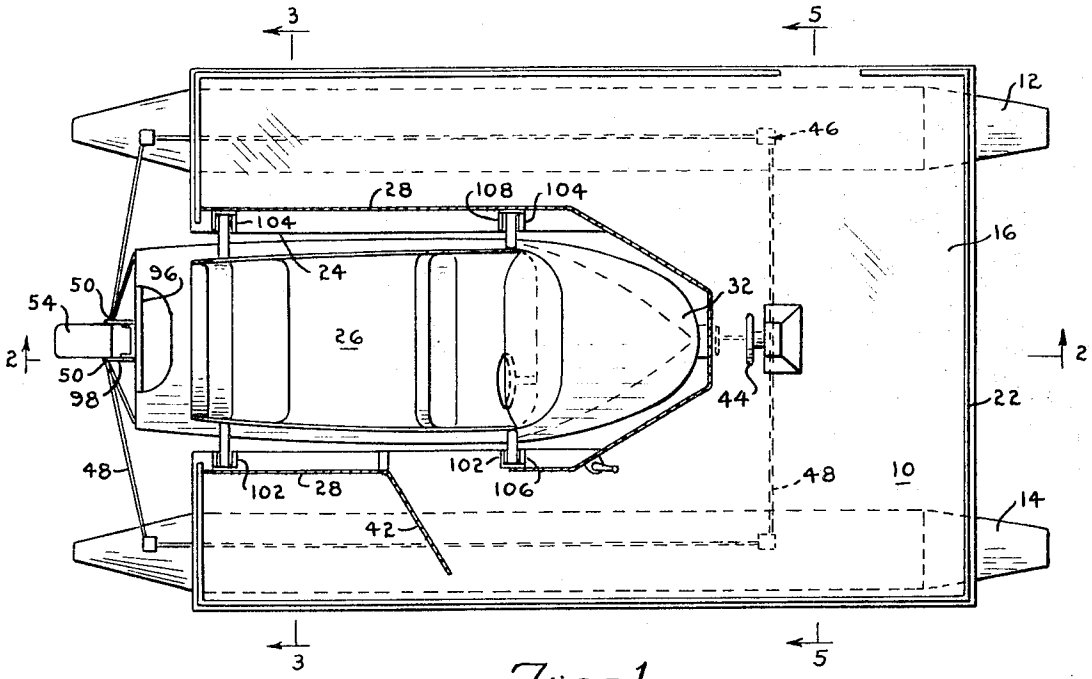


Fig.-1

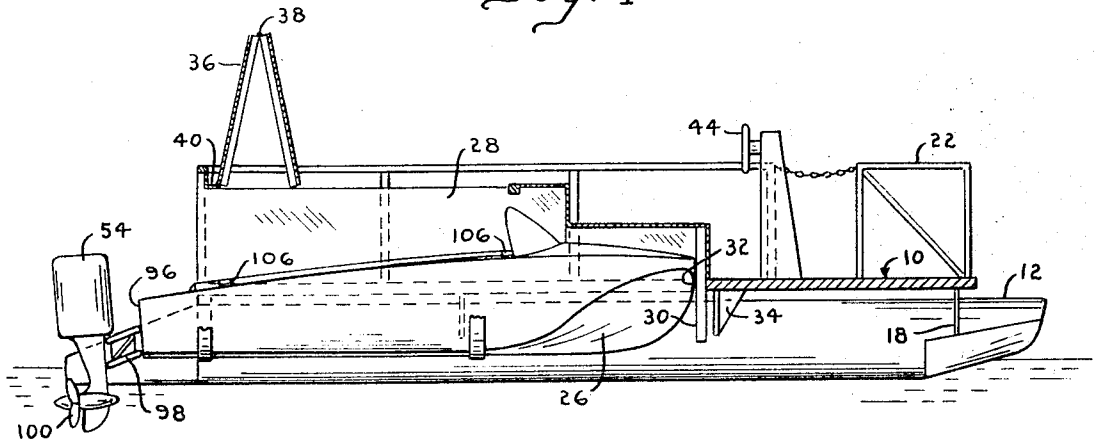


Fig.-2

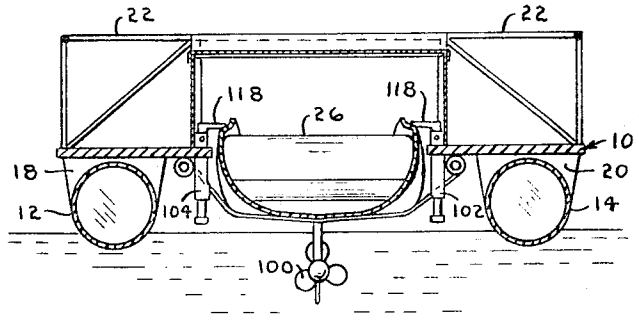


Fig.-3

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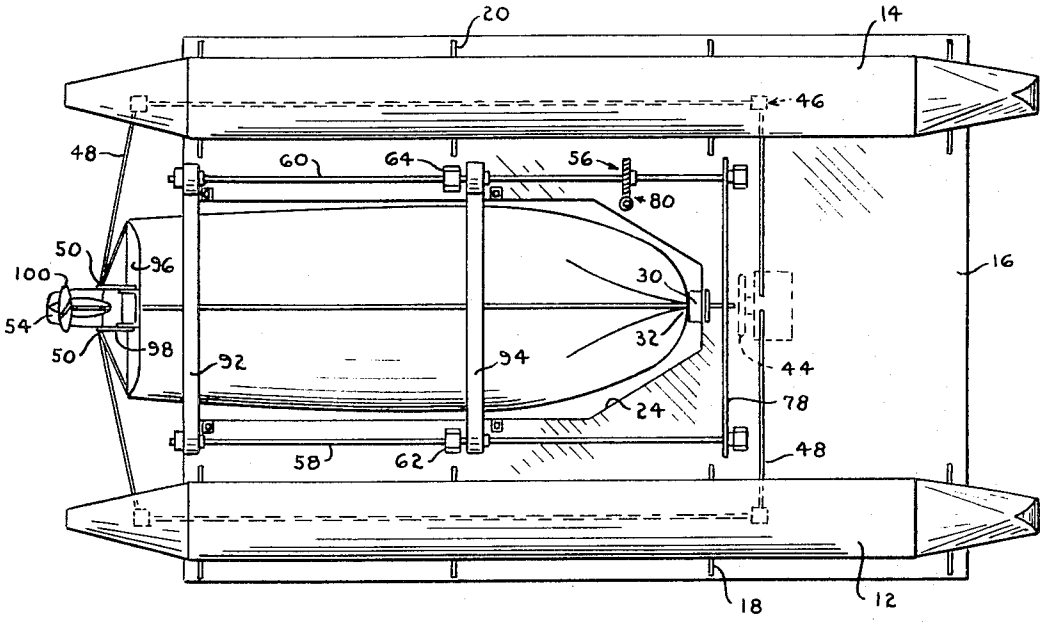


Fig.-4

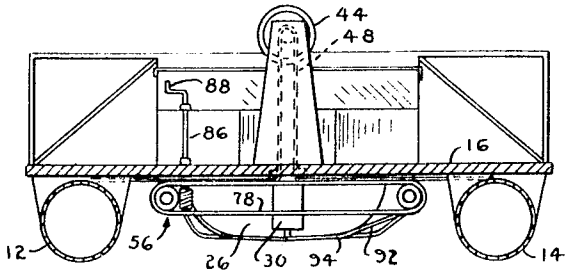


Fig.-5

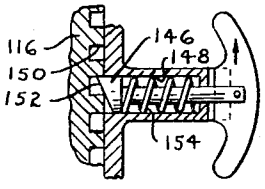


Fig.-6

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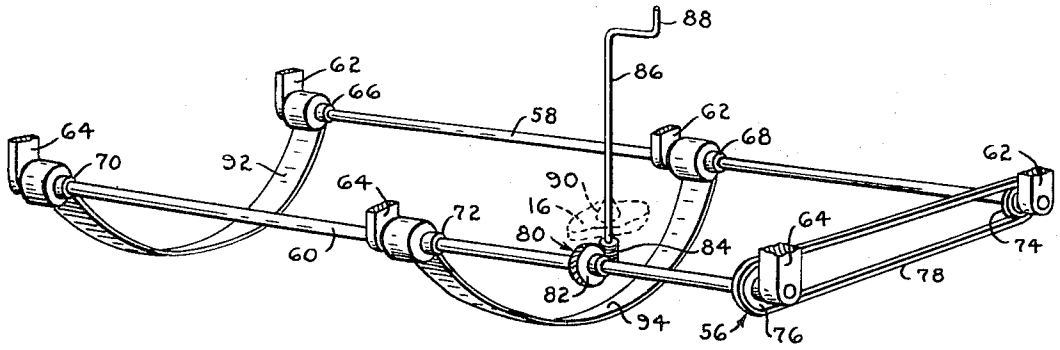


Fig.-7

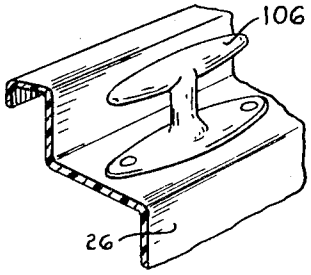


Fig.-8

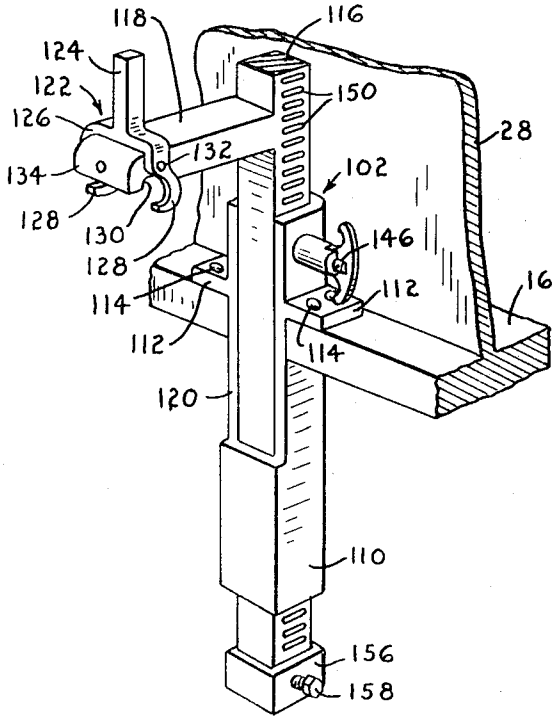


Fig.-9

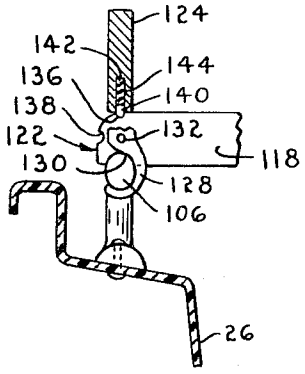


Fig.-10

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MOTOR BOAT PROPELLED PONTOON BOAT

This invention relates generally to water crafts and more particularly to pontoon boats.

The basic structure of the pontoon boat of the prior art comprises twin hulls or pontoons which are laterally spaced apart in parallel relation to which is connected a framework therebetween to support a platform thereon. This platform provides deck space on which passengers on the pontoon boat perform their activity. Portions of the deck space are also used as the base for the construction of superstructures such as cabins or framework for awnings.

Pontoon crafts because of their sturdy design and their very shallow draft can be made relatively large and can carry a large load; also they provide a large deck space and can be used on rivers, lakes, and marshy expanses and other sheltered water ways which are too shallow for conventional boats of comparable size. The prior art practice in the use of pontoon boats is to carry a small boat for use as a dingy if the docking facilities are not suitable for the pontoon boat. The purpose of the dingy is to transport the passengers to shore or dock from the pontoon boat which has been moored off shore or away from the dock.

This invention contemplates the use of a motor boat for the purpose of transporting passengers to and from a moored pontoon boat, and provide a novel structure and design for a pontoon boat for incapsulating the motor boat when not used for passenger transportation and utilize the motive means of the motor boat to propel the pontoon boat. This invention combines the motor boat and the pontoon boat in such a way to form an integral structure for purposes of propulsion. When it is necessary to moor the pontoon boat off shore because of its size or because of lack of satisfactory docking facilities, the motor boat may be disincapsulated and utilized for transportation of the passengers to dock or shore.

Accordingly, the general object of this invention is to provide a pontoon boat having a novel structure to incapsulatingly receive a motor boat to use its motive power to propel the pontoon boat.

Another object of this invention is to provide a pontoon boat which is economical to manufacture and which utilizes a conventional motor boat for its means for propulsion.

Other objects and advantages of this invention will become apparent after a study is made of the following detailed descriptions of the preferred embodiments of this invention which is to be read with reference to the accompanied drawing in which:

FIG. 1 is a plan elevation of the present invention;

FIG. 2 is a side elevation of FIG. 1 in longitudinal section taken along line 2—2 of FIG. 1;

FIG. 3 is a cross sectioned elevation taken along the line 3—3 of FIG. 1;

FIG. 4 is a bottom view of this invention;

FIG. 5 is a cross sectioned elevation taken along line 5—5 of FIG. 1;

FIG. 6 is a side view of a ratchet pin in section showing the details thereof;

FIG. 7 is a pictorial diagram of the motor boat lifting apparatus;

FIG. 8 is a perspective view of a cleat connected to the gunwale shown in fragment which is used for anchoring the motor boat to the pontoon boat;

FIG. 9 is a detail perspective view of a locking bar device connected to the deck portion of the pontoon boat shown in fragment; and

FIG. 10 is a side view partly in section of the cooperating elements of the cleat and a portion of the locking bar device shown clamped together.

Referring now more particularly to the drawings, particularly FIG. 1–3, reference numeral 10 designates generally the pontoon boat of my invention. It comprises laterally spaced pontoons 12 and 14 which are in parallel relations and are cylindrically shaped and the forward and rearward ends thereof are formed to converge cone-like for streamlining the flow of water therearound. Pontoons 12 and 14 are hollow in the conventional manner to provide maximum buoyancy. I have shown deck 16 to be connected to pontoons 12 and 14 in the most elementary manner by gussets 18 and 20 respectively. It is contemplated, of course, that the framework connecting pontoons 12 and 14 to deck 16 comprising gussets 18 and 20 shown in the drawing as being properly designed and interconnected to support deck 16 for the use intended. The superstructure shown on deck 16 comprises railing 22 and is minimal in character. Additional superstructure may be included but has not been shown for purposes of clarity in the drawing and description.

The stern portion of deck 16 equally spaced between pontoons 12 and 14 is provided with an opening 24 to longitudinally receive the hull of motor boat 26. I provide an incapsulating wall 28 around opening 24 mounted upright from deck 16. The forward end thereof is provided with a bumper plate 30 suitably shaped and formed from suitable material to prevent damage to the bow 32 of motor boat 26 which is in pressing contact therewith. I show only as a preference bumper plate 30 extending above and below deck 16. I further shown bumper plate 30 reinforced by gusset plate 34 which is connected to deck 16. Incapsulating side walls 28, as more clearly shown in FIG. 2, is provided with a cover 36 which is hinged at 38 and 40 for folding and opening respectively and thereby the motor boat 26 may be utilized to store marine or sport gear and equipment. Side gate 42 is provided in side wall 28 as shown in FIG. 1 to provide another and more convenient means to enter or exit from motor boat 26. Pilot wheel 44 is located in any convenient location on deck 16 which operated a cable and pulley system 46 which is supported below deck surface 16. The ends of cable 48 are provided with hooks as at 50 to removably connect eye bolts on each side of the outboard motor 54 of motor boat 26 to control the lateral pivoting of outboard motor 54 and thereby function to steer the pontoon boat 10.

Motor boat 26 is lifted out of the water into its incapsulated position and therein fixedly connected to the pontoon boat in the manner hereinafter described. With particular reference to FIGS. 4 through 10, pontoon boat 10 is provided with hoist means 56 which comprise, as better shown in FIG. 7, a pair of shafts 58 and 60 rotatably supported by spaced bearings 62 and 64 respectively. Bearings 62 and 64 are connected to the underside of deck 16 for longitudinally supporting shafts 58 and 60 respectively, adjacent each side of opening 24. To each of shafts 58 and 60 are provided thereon, longitudinally spaced sleeves 66, 68 and 70, 72 respectively. Sleeves 66 and 70, and 68 and 72 are positioned on shafts 58 and 60, in lateral alignment. Also connected to shafts 58 and 60 in lateral alignment are sprocket wheels 74 and 76 respectively, which are linked together for counter rotation by sprocket chain 78. I further provide shaft drive means 80 which may be any convenient mechanical link device for rotating either of shafts 58 and 60, or motor means may be provided to drive either of shafts 58 and 60. For purposes of clarity I show a simple mechanical shaft drive means comprising a worm gear 82 keyed to shaft 60 at any convenient location. Meshingly engage to worm gear 82 is worm wheel 84 which is connected to the journalled end of upright crank shaft 86. The other end of crank shaft 86 is shown formed with a bell crank handle 88 for manual turning. Support bearing 90 is fixed to deck 16 to journally support crank shaft 86 upright. As stated above, drive means 80 may be connected to either shaft 58 or 60 at any position so that the operation thereof is available at any convenient location on deck 16.

Connecting each pair of laterally aligned sleeves 66, 70 and 68, 72 on shafts 58 and 60 respectively, are belts 92 and 94 formed from tensilely strong, flexible material such as nylon for convolute wrapping thereover when shafts 58 and 60 are rotated. Belts 92 and 94 are connected to their respective sleeve pairs 66, 70 and 68, 72 in order that the convolute wrapping thereon does not produce longitudinal shifting of the belts, but only a shortening thereof to take up the girting portion thereof loosely slung therebetween.

The above described laterally spaced shafts **58** and **60**, and belts **92** and **94** connected thereto for convolute wrapping therearound and slung therebetween, serve as cradle means for raising motor boat **26** out of the water and supporting it in a raised incapsulated position. While in the raised position, bow **32** of motor boat **26** abuts against bumper plate **30** and it is intended that outboard motor **54** connected to transom **96** of motor boat **26** by extensible linkage means **98** capable of being extensilely movable to allow the screw propeller **100** of outboard motor **54** to be lowered into the water when the motor boat **26** is connected to the pontoon boat **10** in its incapsulated position; and thereby allow motor **54** to serve as a drive motor for the pontoon boat. The cradling of motor boat **26** by means of belts **92** and **94** is insufficient to rigidly secure motor boat **26** to pontoon boat **10**. Accordingly, I provide longitudinally spaced gunwale hitches **102** on one side of opening **24**, and hitches **104** longitudinally spaced on the opposite side of opening **24** in deck **16**. Hitches **102** and **104** are mounted in facing position but otherwise are identical in structure and accordingly the description of one will serve to describe the other hitches. I prefer to mount side walls **28** on deck **16** spaced from the edge of opening **24** so that gunwale hitches **102** and **104** may be mounted on deck **16** within said space. Provided on both sides of the gunwales of motor boat **26** are rope cleats **106** and **108** at locations thereon for vertical alignment with hitches **102** and **104** when motor boat **26** is positioned in opening **24** with its bow **32** against bumper plate **30**. With particular reference to FIGS. **6** and **8** to **10**, one of gunwale hitches **102** is shown in greater detail. Gunwale hitch **102** comprises bar guide frame **110** which is provided with projecting lugs **112** on both sides thereof to provide a base for resting on deck **16** on the space between opening **24** and side wall **28** and is secured to deck **16** by fastening means such as bolts **114**. I prefer to form bar guide frame **110** rectangular in shape and hollowed to slidingly receive therethrough hitch bar **116**. Hitch bar **116** is provided with a cantilever beam **118** which extends over the gunwale of motor boat **26**. A substantial portion of infacing side **120** of bar guide frame **110** is open to allow the cantilever beam **118** of hitch bar **116** to slidingly move downwardly in the substantially open portion of guide frame **110**. A hooking clamp device **122** is connected to the end of cantilever beam **118**. Clamp device **122** comprises a unitary handle end **124** and a bifurcated end **126**, the distal ends of which are formed in the shape of hooks **128** which are spaced apart to straddle cantilever beam **118**. The bottom side of cantilever beam **118** is provided with a transverse recess **130** contoured to matingly receive therein cleat **106** connecting the gunwale of motor boat **26**. Clamp device **122** is pivotally connected to the sides of cantilever beam **118** by pin **132** projecting therefrom and are vertically aligned with transverse recess **130** so that the load of motor boat **26** dependingly supported by the hooks **128** have no moment arm spaced from pin **132** connecting clamp device **122** to cantilever beam **118**. Therefore, the load of motor boat **26** will not operate to pivot hooks **128** open. The distal end **134** of cantilever beam **118** is shaped with a radius or truncated to allow clearance thereover of bifurcated end **126** of clamp device **122** when pivotally moved thereover. Beam **118** is also provided with locking detents **136** and **138** for retention of clamp device **122** in a cleat clamp and unclamp position, respectively, by mechanically engaging therein pin **140** which is axially movable in hole **142** provided in the crotch of bifurcated end **126** of clamp device **122**. I provide a coil spring **144** in hole **142** to provide a resilient bias to the movement of pin **140**.

In the operation of my invention motor boat **26** is utilized to transport passengers to and from pontoon boat **10** when it is necessary to moor the pontoon boat off-shore or away from the dock if the docking facilities are not designed to handle a large craft such as a pontoon boat. Motor boat **26** may also be used for any purpose that similar crafts are used and need not be limited as a tender only; for example, pontoon boat **10** may be driven to a location in a river or lake where it may be anchored or even left to drift while the passengers thereon carry on the activity of fishing or other activity they may be engaged in while motor boat **26** is separated from the pontoon boat and used for exploring other nearby inlets and waterways or conduct any other activity that may best be performed by a motor boat. When it is desired to combine both crafts, that is motor boat **26** and pontoon boat **10**, crank handle **88** is manually rotated to actuate drive means **80** which causes the rotation of shafts **58** and **60** as hereinabove described to unwrap nylon belts **92** and **94** and cause the portion therebetween to lower into the water sufficiently to reach below the bottom of the hull of motor boat **26**. Motor boat **26** is driven or pulled into opening **24** in deck **16** of pontoon boat **10** and the bow **32** thereof is abutted against bumper plate **30** on pontoon boat **10**.

Belt shaft drive means **80** is caused to rotate in the opposite direction which operates to wrap thereon belts **92** and **94**. This causes motor boat **26** to be cradled by belts **92** and **94** and thereby lifted from the water to its incapsulated position. Hitch bar **116** of each gunwale hitches **102** and **104** is allowed to drop downwardly in bar guide frame **110** by pulling out notch pin **146** from hole **148** of each guide frames **110** sufficiently to release its engagement with notches **150** formed in the side of hitch bar **116**. I prefer to form the end of notch pin **146** with an incline side **152** as illustrated in FIG. **6**. I also provide pin **146** with a coil spring **154**, one end of which is connected to pin **146** and the other end thereof is connected to guide frame **110**. Pin **146** is manually rotatable in hole **148** for the purpose of facing the incline side **152** downwardly or upwardly against notches **150** of hitch bar **116**. Spring **154** serves to urge pin **146** into hole **148** against notches **150** and to provide the flexibility for allowing ratchet like movement for pin **146** as the multiple ridge and notch configuration of hitch bar **116** moves against the incline side **152** of pin **146**. Pin **146** is either pulled out through hole **148** sufficiently to release the hitch bar **116** and allow it to move downwardly or pin **146** is pulled sufficiently to rotate the pin so that the incline side **152** thereof is facing upwardly. Hitch bar **116** may then be pushed downwardly causing the pin **146** to be wedged passed each notch **150**. When motor boat **26** is elevated by belts **92** and **94** a sufficient distance so that the cantilever beams **118** of the lowered hitch bars **116** can reach the level of cleats **106** and **108** on the gunwale of motor boat **26**, the clamp devise **122** on each cantilever beam **118** is pivoted to hook under the rope cleats **106** and **108** aligned therewith to bring them in connecting engagement in the cleat contoured recesses **130** formed in the underside of cantilever beams **118**. Pin **146** of each clamp devise **122** engages the detent in the top side of cantilever beam **118** and is retained therein by means of spring **144** which serves to retain clamp devise **122** in a cleat holding position. With cleats **106** and **108** of motor boat **26** clamped in position against the underside of cantilever beams **118** of hitch bars **116**, further lifting of motor boat **26** by belts **92** and **94** will be constrained by the guided movement of hitch bars **116** in guide frames **110**. Hitch bars **116** are elevated in guide frames **110** by the lifting movement of motor boat **26**. The incline side **152** of each pin **146** connecting guide frames **110** is faced downwardly to meet the upwardly travelling notches **150** of hitch bars **116**. Ridges and notches **150** of hitch bar **116** proceed past the end of pin **146** by riding against the incline side thereof moving pin **146** outwardly against the urging of spring **154**. When motor boat **26** is lifted to its incapsulated position shaft drive means **80** for belts **92** and **94** is stopped and the motor boat **26** is supported by belts **92** and **94** and rigidly connected to bar hitches **116** to which are clamped rope cleats **106** and **108** of motor boat **26**. Bar hitches **116** are retained in their elevated positions by pins **146** engaging the notches **150** in the side of hitch bars **116**. This lifting apparatus stabilizes motor boat **26** in a raised fixed position out of the water. Belts **92** and **94** are tightly stretches across the bottom of the hull of motor boat **26** and bar hitches **116** are raised until adjustably positioned stop collar **156** provides on the bottom end of each bar hitch **116** by means of a bolt **158**. Motor boat **26** is now in an incapsulating position, removed from the water and outboard motor **50** is lowered by extensi-

ble movement of linkage means **98** connecting the outboard motor **50** to the transom **96** of the motor boat **26**. This allows the screw propeller to descent deeper into the water to compensate for the raising of motor boat **26** to its incapsulating position. The end hooks **50** of control cable **48** connecting pilot wheel **44** are hooked to each side of outboard motor **54** so that the steering of outboard motor **54** may be controlled by pilot wheel **44**. The motor boat **26** incapsulated in the structure of the pontoon boat **10** of my invention is now utilized to drive pontoon boat **10** by utilizing the propelling means of motor boat **26** as the propelling means for pontoon boat **10** when the motor boat is not used as a tender craft.

Though I have shown and described a particular construction and arrangement of parts and portions, I do not wish to be limited to this particular construction and arrangement but desire to include in the scope of my invention the construction, combination and arrangement substantially as set forth in the appended claims.

I claim:

1. A pontoon boat comprising:
spaced apart parallel hulls and a deck spanning said hulls above the water line;
said deck having a longitudinal opening between said hulls for longitudinally receiving therein a single hull pivotally movable outboard motor boat;
sleeve members rotatably supported from said deck;
a belt means between said sleeve members laterally spanning said opening girting below said single hull outboard motor boat;
drive means on said deck for rotating said sleeve members to convolutely wrap thereover said belt means to vertically move said single hull boat;
hitch means on said deck for releasably connecting said single hull boat;
steering means on said deck;
link means supported from said deck connecting said steering means for actuation thereby; and
said link means connected to said pivotally movable outboard motor of said single hull boat for controlling said pivotal movement by said steering means.

2. The pontoon boat of claim **1** wherein said opening in said deck is further characterized as being in the stern end thereof and equidistant between said hulls.

3. The pontoon boat of claim **1** wherein said rotatable support of said sleeve member are further characterized as being connected to longitudinal shafts adjacent the longitudinal sides of said opening.

4. The pontoon boat of claim **2** wherein said rotatable support of said sleeve members are further characterized as being connected to longitudinal shafts adjacent the longitudinal sides of said opening.

5. The pontoon boat of claim **1** wherein said hitch means are further characterized as comprising; upright guide members connected to said deck adjacent said opening; adjustably positioned bars movable in said guide members; and means at the upright end of said bars to releasably connect to means on said single hull motor boat.

6. The pontoon boat of claim **1** wherein said deck is further characterized as having connected adjacent the forward end of said opening therein, a vertically disposed plate for buttingly receiving the bow end of said single hull motor boat.

7. The combination of:
a pontoon boat comprising,
spaced apart parallel hulls,
a deck spanning said hulls above the water line,
said deck having a longitudinal opening between said hulls;
a single hull boat having a movable outboard motor,
detachably connected to said deck in said opening to maintain said hull above said water line, the propelling member of said motor below said water line, and the bow of said hull against said pontoon boat; and
steering means on said deck linked to said outboard motor to move said outboard motor.

8. A pontoon boat comprising;
spaced apart parallel hulls,
a deck spanning said hulls above the water line,
said deck having incapsulating means between said hulls;
a single hull outboard motor boat longitudinally positioned in said incapsulating means of said deck;
said incapsulating means having belt members for raising said motor boat above said water,
said incapsulating means being provided with laterally inflexible upright member for transmitting the thrust of said motor boat to said pontoon boat.
fastening means on said incapsulating means for detachably connecting said motor boat to said pontoon boat; and
steering means on said deck connecting the steering means on said motor boat.

* * * * *