Oct. 9, 1962 H. E. McGUIRE 3,056,977

OUTBOARD MOTOR MOUNTINGS

Filed Dec. 5, 1958 3 Sheets-Sheet 1

FIG. 1

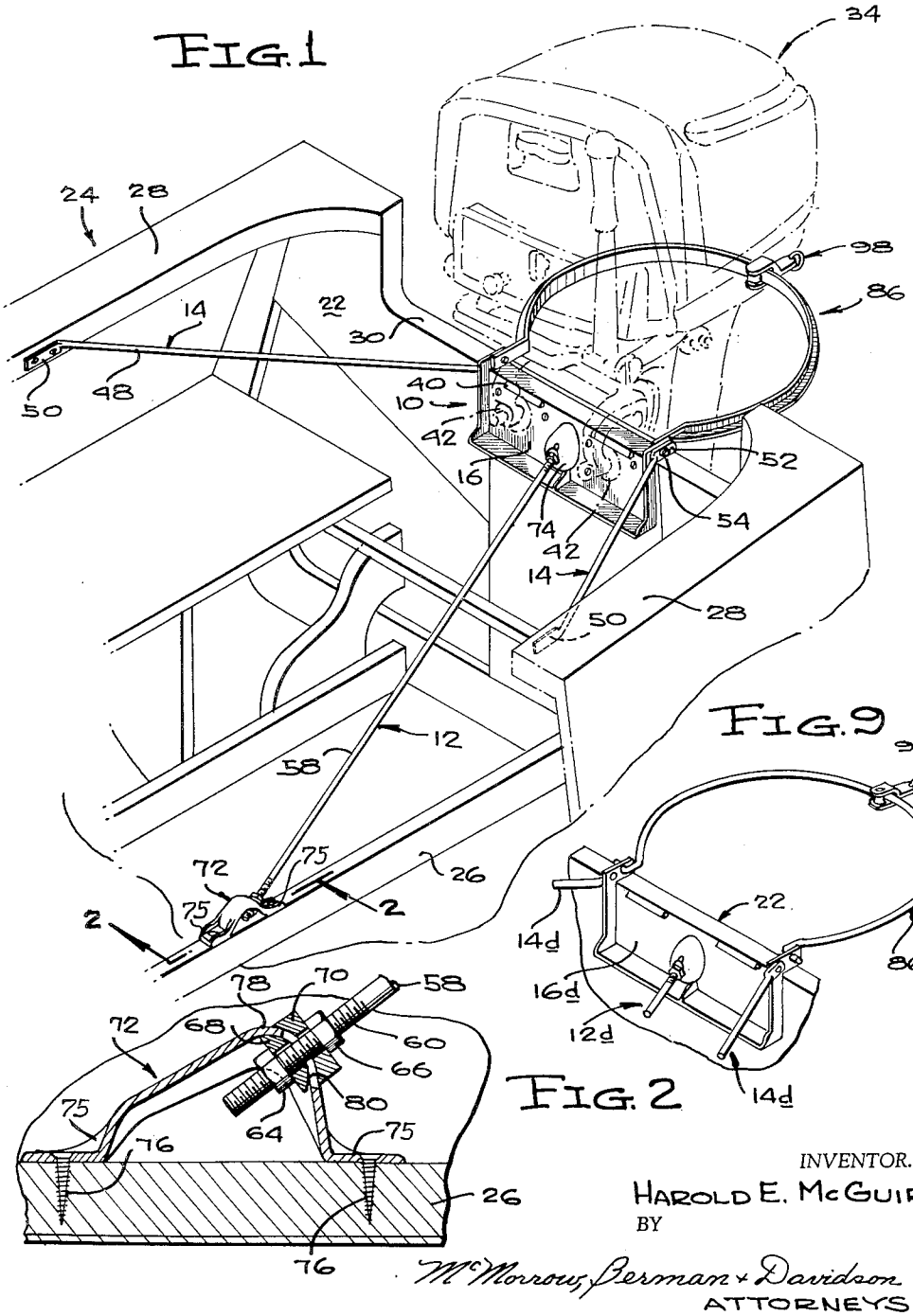


FIG. 9

FIG. 2

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FIG. 3

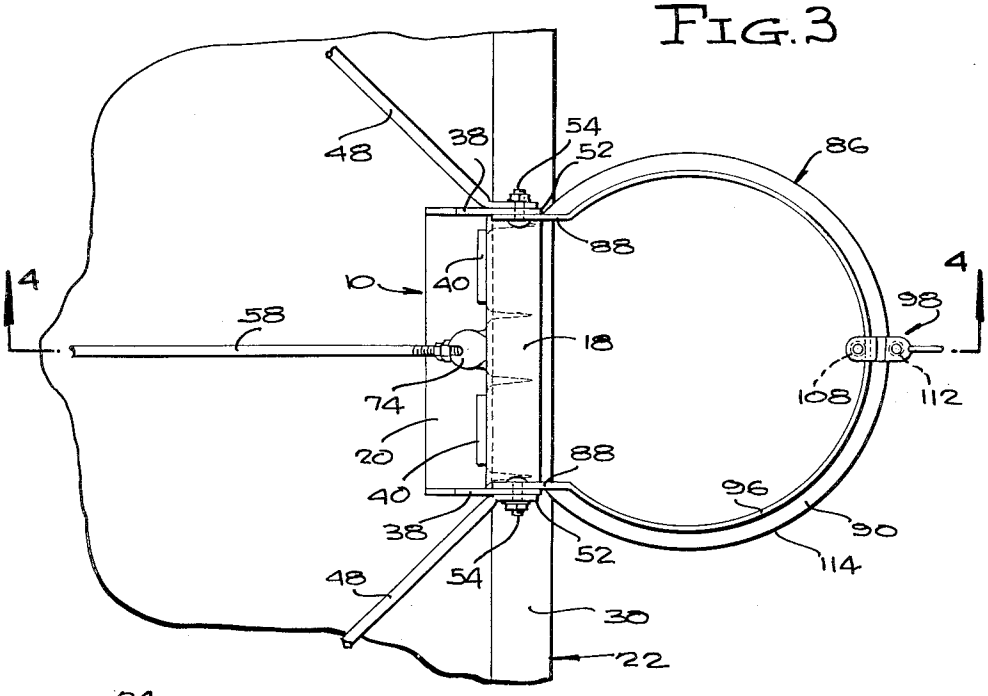
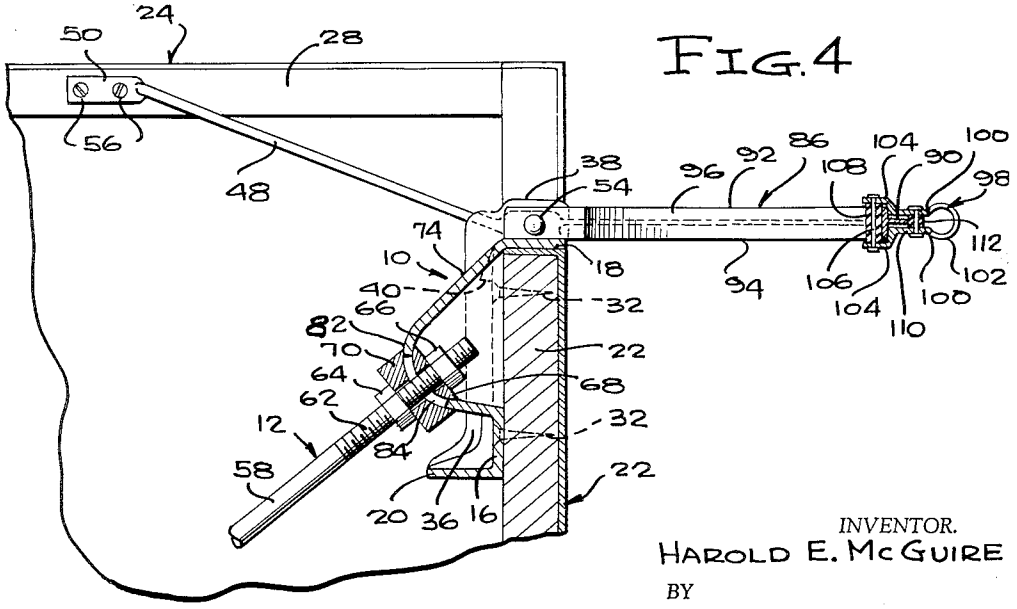


FIG. 4



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FIG. 5

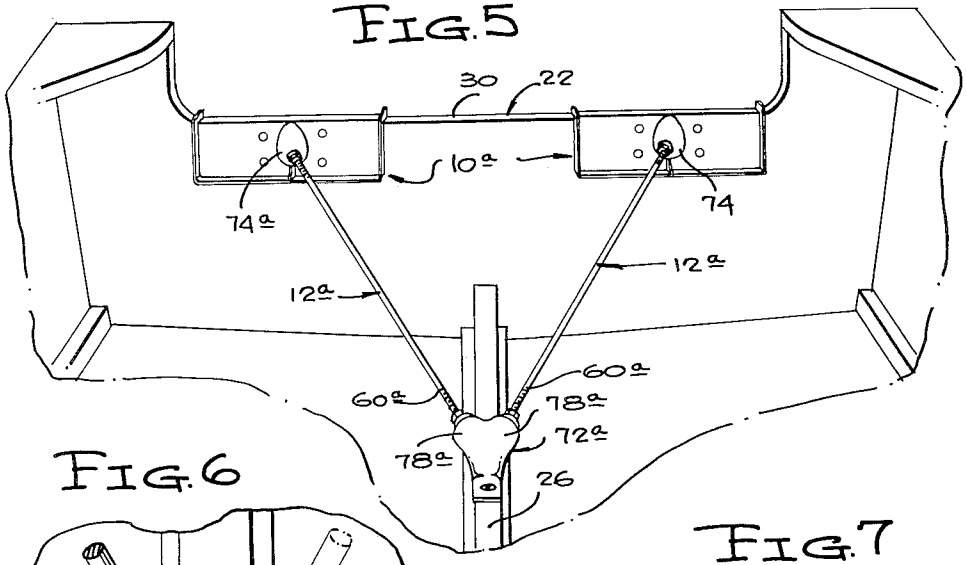


FIG. 6

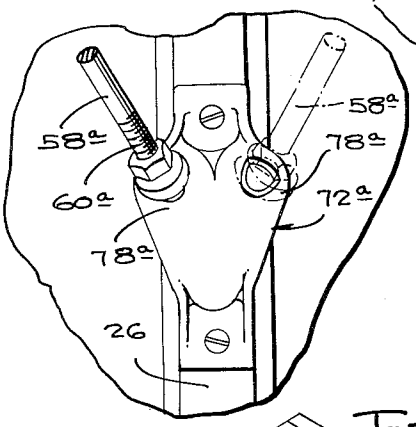


FIG. 7

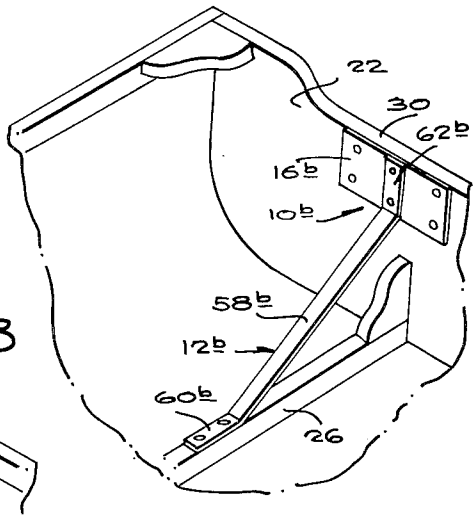
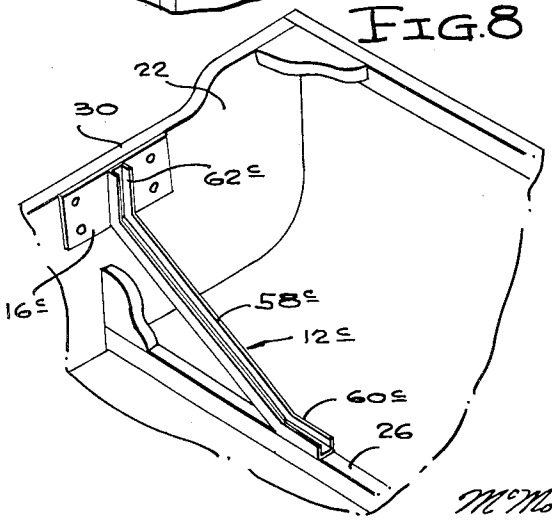


FIG. 8



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OUTBOARD MOTOR MOUNTINGS

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8 Claims. (Cl. 9—6)

This invention relates to improvements in outboard motor mountings for boat transoms.

The primary object of the invention is to provide more efficient devices of this kind which distribute the strains and stresses of vibrations produced by outboard motors, while in operation, on boat transoms on which the motors are mounted, to other parts of the hulls of the boats, in a manner to reduce the deleterious effects which such vibrations otherwise have upon the transoms and other parts of boat hulls and upon motors.

Another object of the invention is to provide devices of the character indicated, which insure more secure, accurate and non-shifting mounting of outboard motors on boat transoms, and which include, in at least one form, a towing ring which has thereon a towing line tie ring which can run freely around the towing ring.

A further object of the invention is to provide devices of the character indicated above which involve transom mounted motor mounting plates which have means thereon engageable with outboard motor clamping means in a manner to limit shifting of outboard motors relative to the plates and to prevent disengagement of motors from the plates while the motor-clamping means are in clamping engagement with the plates and associated transoms.

A still further object of the invention is to provide devices of the character indicated above which involve keel brace means extending between and secured to the motor-mounting plates and the keels of boats on whose transoms the plates are mounted, so as to brace the plates on the transoms and distribute to the keels strains and stresses of motor vibrations; and to provide devices of this character which further involve gunwale brace means secured to and extending between boat hull gunwales and motor-mounting plates, so as to further brace the plates on the transoms and distribute strains and stresses of motor vibrations to the gunwales.

Still another object of the invention is to provide devices of the character indicated above which are easily installed and adjusted for different boat hull and transom dimensions, and which are simple in construction and can be made in well-finished and rugged forms at relatively low cost, the devices being capable of mass production and mechandising in compact, knocked-down condition.

Other important objects and advantageous features of the invention will be apparent from the following description and the accompanying drawings, wherein, for purposes of illustration only, a specific form of the invention is set forth in detail.

In the drawings:

FIGURE 1 is a fragmentary perspective view of the stern portion of a boat hull, showing one form of the device of the invention installed therein, relative to an outboard motor shown in phantom lines;

FIGURE 2 is an enlarged fragmentary vertical longitudinal section taken on the line 2—2 of FIGURE 1;

FIGURE 3 is an enlarged fragmentary top plan view of FIGURE 1;

FIGURE 4 is a fragmentary vertical longitudinal section taken on the line 4—4 of FIGURE 3;

FIGURE 5 is a fragmentary front perspective view of the stern portion of a boat hull, and its transom and keel, showing another form of the invention installed therein;

FIGURE 6 is an enlarged fragmentary top plan view of the keel bracket shown in FIGURE 5;

FIGURE 7 is a fragmentary perspective view showing a further form of the invention installed in a boat hull;

FIGURE 8 is a fragmentary perspective view showing a still further form of the invention installed in a boat hull; and,

FIGURE 9 is a perspective view of yet another form of the invention.

Referring in detail to the drawings, wherein like or similar numerals designate like parts throughout the several views, and first to FIGURES 1 to 4 thereof, the form of the invention therein shown comprises an outboard motor transom mounting plate assembly **10**, a keel brace assembly **12**, and gunwale brace assemblies **14**.

The motor-mounting plate **10** comprises a horizontally elongated web **16** having on its upper edge a rearwardly directed longitudinal flange **18**, and on its lower edge a forwardly directed longitudinal flange **20**. The mounting plate **10** is installed with its web **16** against the forward side of the transom **22** of a boat hull **24** having a central forwardly extending longitudinal keel **26**, and gunwales **28** along opposite sides of the hull, on a level, in this case, above the upper edge **30** of the transom **22**; with the upper flange **18** engaged on the upper edge **30** of the transom. Fastening means, such as screws **32** traverse the web **16** and are threaded into the transom **22** so as to secure the mounting plate **10** in place. Where a single outboard motor **34** is involved, the mounting plate **10** is installed centrally on the transom **22**, but where two outboard motors are involved, two mounting plates are installed on the transom in appropriate off-center positions, as shown in FIGURE 5.

The mounting plate **10** further comprises forwardly extending vertical end flanges **36** on its ends which merge, at their upper ends, into upstanding rearwardly extending flanges **38** joined to the ends of the upper longitudinal flange **18**. The flanges **18**, **20**, **36** and **38** serve to stiffen the mounting plate **10**, and the forwardly extending longitudinal flange **20** serves additionally as a drip-catcher for oil which may drop from an outboard motor **34** clamped on the transom **22** and the mounting plate **10**.

On the forward side of the web **16** immediately below the upper flange **18** are two longitudinally spaced forwardly projecting stop or abutment ribs **40**, for stop engagement by clamp heads **42** of the bracket of an outboard motor **34** which are engaged with the forward side of the web **16** in mounting the motor **34** on the transom **22** in the usual manner. The ribs **40** positively prevent the clamp heads **42** from riding up on the mounting plate **10** and thereby positively prevent disengagement of the motor clamp bracket from the transom **22** unless and until the clamp heads **42** are loosened. Further, the end flanges **36** prevent the motor bracket from moving endwise off the mounting plate **10**, should the clamp heads **42** become loosened, while frictional engagement of the clamp heads with the undersides of the ribs prevents the motor **34** from shifting sidewise relative to the plate **10** and the transom **22** while the clamp heads **42** are tight.

Each of the gunwale brace assemblies **14** preferably comprises a pair of straight rods **48** having opposite angled flats **50** and **52** on their forward and rear ends. The rear flats **52** are engaged with the laterally outward sides of the upstanding mounting plate flanges **38** and are secured in place by bolts **54**. The forward flats **50** are secured to related gunwales, as to the laterally inward edges thereof, by such as screws **56**, with the rods **48** disposed at forwardly inclined and divergent angles.

The keel brace assembly **12** comprises a rod **58** having theraded forward and rear ends **60** and **62**, respectively, having thereon forward and rear lock nuts **64** and **66**, engaged with hemispherical convex washers **68** and con-

cave washers **70**, respectively. The keel brace assembly **12** further comprises a keel bracket **72** and a mounting plate bracket **74**. As shown in FIGURES 1 and 2, the keel bracket **72** comprises a longitudinally elongated hollow concave-convex form having channel ears **75** on its opposite ends, which are secured upon the boat hull keel **24** by such as screws **76**, at a point spaced forwardly from the transom **22**. As shown in FIGURE 2, the keel bracket **72** has an elevated hemispherical portion **78** at its rear end which is formed with a vertically elongated slot **80**, through which the forward end **60** of the rod **58** freely extends and which enables major angular adjustments of the rod **58** relative to the hemispherical portion **78**. The concave washer **70** is engaged with the convex outer side of the portion **78** while the convex washer **68** is engaged with the concave inner side of the portion **78**, so as to provide an adjustable ball-joint arrangement.

The mounting plate bracket **74**, which is preferably formed integral with the web **16** of the mounting plate **10**, is located centrally of the web **16**, and comprises a hollow concave-convex form similar to that of the keel bracket **72**, and has on its lower end a forwardly projecting hemispherical portion **82** having therein a vertically elongated slot **84** through which the rear end **62** of the rod **58** freely extends. The slots **80** and **84** are wide enough to enable some lateral adjustments of the rod ends, as well as adjustments along these slots. The convex washer **68** on the rear end of the rod **58** engages the concave rear side of the portion **82**, while the concave washer **70** thereon engages the convex forward side of the portion **82**. When adjustments of the keel brace rod **58** have been made, with the lock nuts **64** and **66** loose, the adjustments are secured by tightening the nuts against the washers.

The outboard motor mounting of FIGURES 1 to 4 further comprises a towing ring **86**, which is preferably three-quarter circular in form, and has on its ends parallel, forwardly extending flat ears **88** which engage the laterally rearward sides of the upstanding mounting plate flanges **38**. The bolts **54** which secure the rear ends of the gunwale brace rods **48** to the upstanding flanges **38** also traverse the ears **88** for mounting the towing ring **86** on the mounting plate **10**. The bolts **54** can be tightened to maintain the towing ring **86** in a desired generally horizontal position.

The towing ring **86** has preferably a T-shaped cross-section, providing on its radially outward side a rail or rib **90** which is spaced from the upper and lower edges **92** and **94**, respectively, of the cross head **96**.

As shown in FIGURE 4, a tow line trolley ring **98** comprises a generally U-shaped form, of preferably flat stock, having arms **100** joined at their radially outward ends to a tie loop **102**, and positioned close to the upper and lower sides of the rail **90**. The arms **100** merge at their radially inward ends into laterally outwardly offset terminals **104** which reach around the edges **92** and **94** of the ring cross head **96**, and are traversed by an axle pin **106** having thereon a roller **108** which rolls on the radially inward side of the cross head **96**. The arms **100** are traversed, near the loop **102** by another axle pin **110** having thereon, between the arms **100**, another roller **112** which runs on the radially outward edge **114** of the rail **90**. With the foregoing arrangement, the tie ring **98** is securely mounted on the towing ring **86**, but can run freely around the towing ring, under towing conditions.

In FIGURES 5 and 6 is shown another form of the invention, involving dual outboard motor mounting plate assemblies **10***a*, and a dual keel brace assembly **12***a*, but permissively devoid of gunwale brace assemblies, which, however, could be combined therewith, as in FIGURES 1 to 4.

The mounting plate assemblies **10***a* are mounted, in the manner described above, on a boat hull transom **22**, in spaced side-by-side relation to each other. Although the assemblies **10***a* are shown as being without stop ribs **40** thereon, these can be provided as in FIGURES 1 to 4, and the assemblies **10***a* are otherwise the same in construction as the mounting plate assembly of FIGURES 1 to 4, and include keel brace assembly brackets **74***a*, to which are secured, as in FIGURES 1 to 4, the rear ends of dual rearwardly divergent keel brace rods **58***a*, whose threaded forward ends **60***a* are secured to laterally spaced hemispherical portions **78***a* of a keel bracket **72***a*, secured to the associated keel **26**, and which is otherwise the same in construction as the keel bracket **72** of FIGURES 1 to 4.

In FIGURE 7 is shown another form of the invention, consisting of a mounting plate assembly **10***b*, and a keel brace assembly **12***b*. The mounting plate assembly **10***b* consists of a flat plate **16***b* secured to the forward side of the transom **22** immediately below or flush with the upper edge **30** of the transom **22**. The keel brace assembly **12***b* consists of a forwardly declining flat bar **58***b*, having an upstanding rear end portion **62***b* secured to the forward side of the plate **16***b* at the center thereof, and having a horizontal forward end portion **60***b* secured to the keel **26**.

The form of the invention shown in FIGURE 8 is the same in construction as that of FIGURE 7, except that the keel brace bar **58***c* and its end portions **60***c* and **62***c* are of channel form, instead of flat.

The form of the invention shown in FIGURE 9 is substantially the same as that of FIGURE 1, except that the towing ring **86***d* is of round bar stock, and the trolley ring **98***d* is conformed to roll around the towing ring **86***d*.

What is claimed is:

1. In combination, a boat hull having a transom having a forward side and an upper edge, a hull bottom extending forwardly from the transom, and hull sides having gunwales spaced above the hull bottom, outboard motor mounting means comprising a flat web on and secured to the forward side of the transom, said web having a forward side with which a forward element of an outboard motor clamp is adapted to be engaged with a rear element of the clamp engaged with the rear side of the transom, a first bracket fixed to and extending forwardly from the middle of said web, a second bracket fixed centrally upon the hull bottom at a location forwardly of the transom, and a rigid brace rod extending between and fixed at its ends to the first and second brackets.

2. In combination, a boat hull having a transom, having a forward side and an upper edge, a hull bottom extending forwardly from the transom, and hull sides having gunwales spaced above the hull bottom, outboard motor mounting means comprising a flat web on and secured to the forward side of the transom, said web having a forward side with which a forward element of an outboard motor clamp is adapted to be engaged with a rear element of the clamp engaged with the rear side of the transom, a first bracket fixed to and extending forwardly from the middle of said web, a second bracket fixed centrally upon the hull bottom at a location forwardly of the transom, and a rigid brace rod extending between and fixed at its ends to the first and second brackets, said brace rod having threaded ends engaged in the brackets, and nuts threaded on said ends and bearing against the brackets.

3. In combination, a boat hull having a transom having a forward side and an upper edge, a hull bottom extending forwardly from the transom, and hull sides having gunwales spaced above the hull bottom, outboard motor mounting means comprising a flat web on and secured to the forward side of the transom, said web having a forward side with which a forward element of an outboard motor clamp is adapted to be engaged with a rear element of the clamp engaged with the rear side of the transom, a first bracket fixed to and extending forwardly from the middle of said web, a second bracket fixed centrally upon the hull bottom at a location forwardly of the transom, and a rigid brace rod extending between and fixed at its ends to the first and second brackets, said brace rod being a flat bar having angled end portions severally constituting said first and second brackets.

4. In combination, a boat hull having a transom having a forward side and an upper edge, hull bottom extending forwardly from the transom, and hull sides having gunwales spaced above the hull bottom, outboard motor mounting means comprising a flat web on and secured to the forward side of the transom, said web having a forward side with which a forward element of an outboard motor clamp is adapted to be engaged with a rear element of the clamp engaged with the rear side of the transom, a first bracket fixed to and extending forwardly from the middle of said web, a second bracket fixed centrally upon the hull bottom at a location forwardly of the transom, and a rigid brace rod, extending between and fixed at its ends to the first and second brackets, said brace rod being a channel bar having angled end portions severally constituting said first and second brackets.

5. In combination, a boat hull having a transom having a forward side and an upper edge, a hull bottom extending forwardly from the transom, and hull sides having gunwales spaced above the hull bottom, outboard motor mounting means comprising a flat web on and secured to the forward side of the transom, said web having a forward side with which a forward element of an outboard motor clamp is adapted to be engaged with a rear element of the clamp engaged with the rear side of the transom, a first bracket fixed to and extending forwardly from the middle of said web, a second bracket fixed centrally upon the hull bottom at a location forwardly of the transom, and a rigid brace rod, extending between and fixed at its ends to the first and second brackets, said web having a rearwardly extending upper flange on its upper edge engaged over the upper edge of the transom, upstanding flanges on the ends of said upper flange having means thereon for pivoting thereto a towing ring.

6. In combination, a boat hull having a transom, having a forward side and an upper edge, a hull bottom extending forwardly from the transom, and hull sides having gunwales spaced above the hull bottom, outboard motor mounting means comprising a flat web on and secured to the forward side of the transom, said web having a forward side with which a forward element of an outboard motor clamp is adapted to be engaged with a rear element of the clamp engaged with the rear side of the transom, a first bracket fixed to and extending forwardly from the middle of said web, a second bracket fixed centrally upon the hull bottom at a location forwardly of the transom, and a rigid brace rod, extending between and fixed at its ends to the first and second brackets, said brace rod having threaded ends engaged in the brackets, and nuts threaded on said ends and bearing against the brackets, said brackets having concavo-convex portions provided with slots through which the rod ends extend, said nuts including first and second nuts bearing against opposite sides of the concavo-convex portions.

7. In combination, a boat hull having a transom having a forward side and an upper edge, a hull bottom extending forwardly from the transom, and hull sides having gunwales spaced above the hull bottom, outboard motor mounting means comprising a flat web on and secured to the forward side of the transom, said web having a forward side with which a forward element of an outboard motor clamp is adapted to be engaged with a rear element of the clamp engaged with the rear side of the transom, a first bracket fixed to and extending forwardly from the middle of said web, a second bracket fixed centrally upon the hull bottom at a location forwardly of the transom, and a rigid brace rod, extending between and fixed at its ends to the first and second brackets, an upper flange on said flat web, upstanding flanges on the ends of said upper flange and gunwale brace rods secured at their rear ends to said upstanding flanges and at their forward ends to related gunwales.

8. In combination, a boat hull having a transom having a forward side and a hull bottom, a pair of laterally spaced flat outboard motor clamp receiving webs secured to the forward side of the transom, single central brackets on said webs, a single bracket fixed to the hull bottom forwardly of the transom, and a pair of forwardly converging brace rods having rear ends rearwardly fixed to the web brackets and forward ends fixed to the hull bottom bracket.

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