Jan. 5, 1965 L. J. FAGEOL 3,164,122

MARINE POWER PROPULSION ASSEMBLIES

Filed Feb. 26, 1962 4 Sheets-Sheet 1

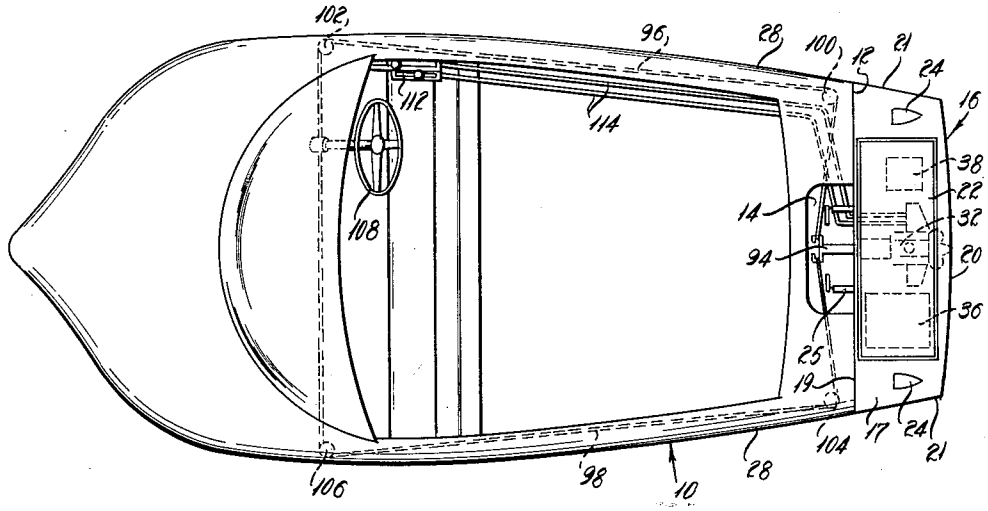

Fig. 1

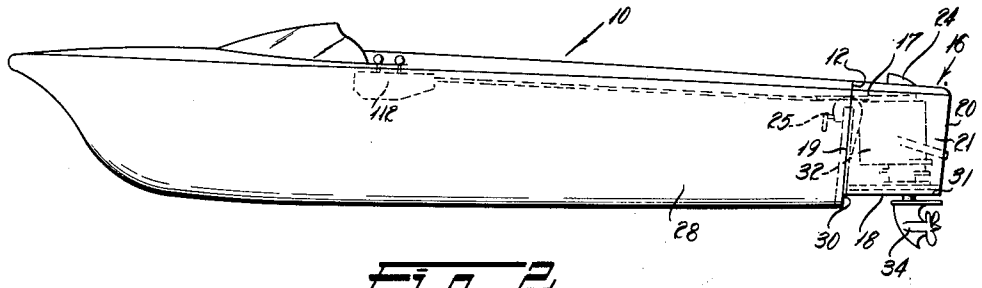

Fig. 2

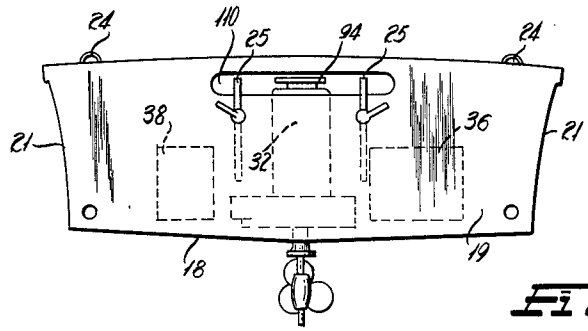

Fig. 3

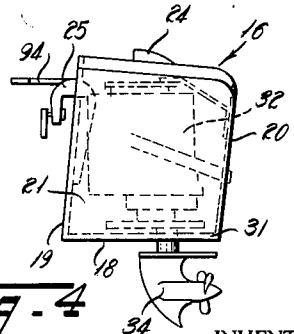

Fig. 4

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MARINE POWER PROPULSION ASSEMBLIES

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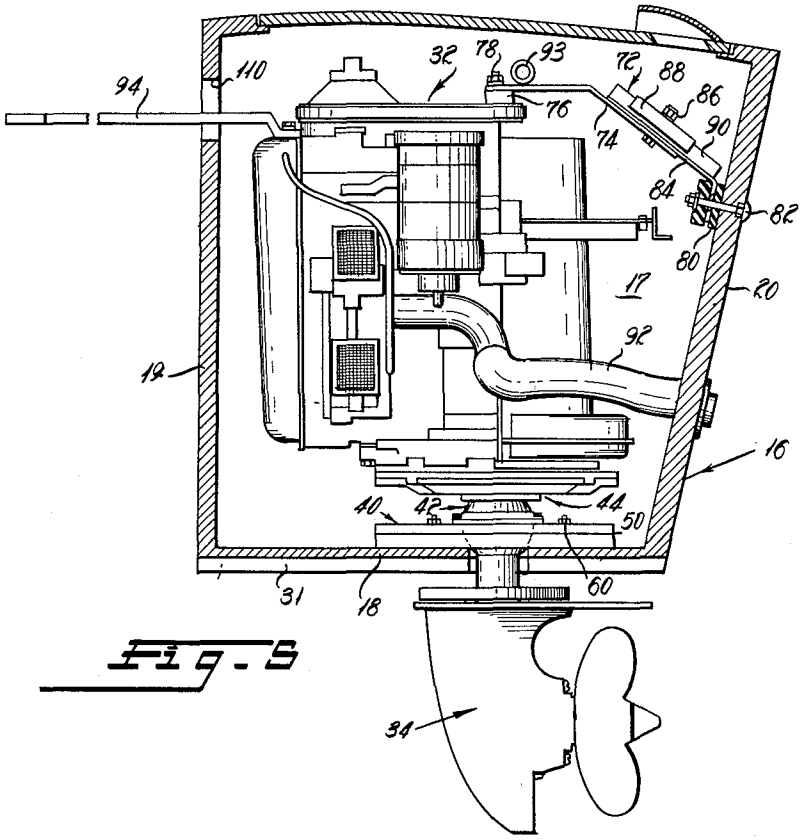
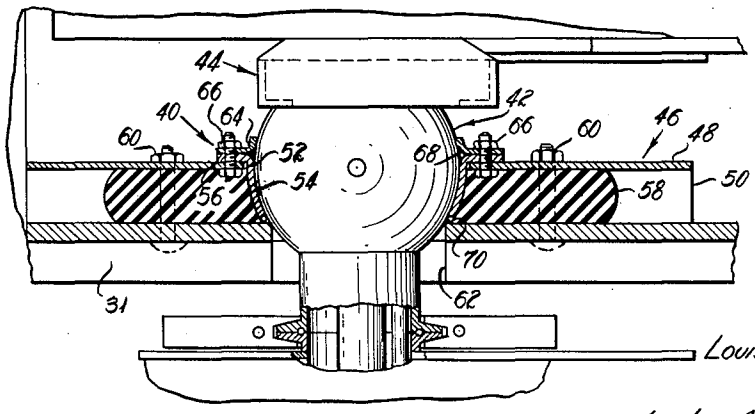


Fig. 5

Fig. 6



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MARINE POWER PROPULSION ASSEMBLIES

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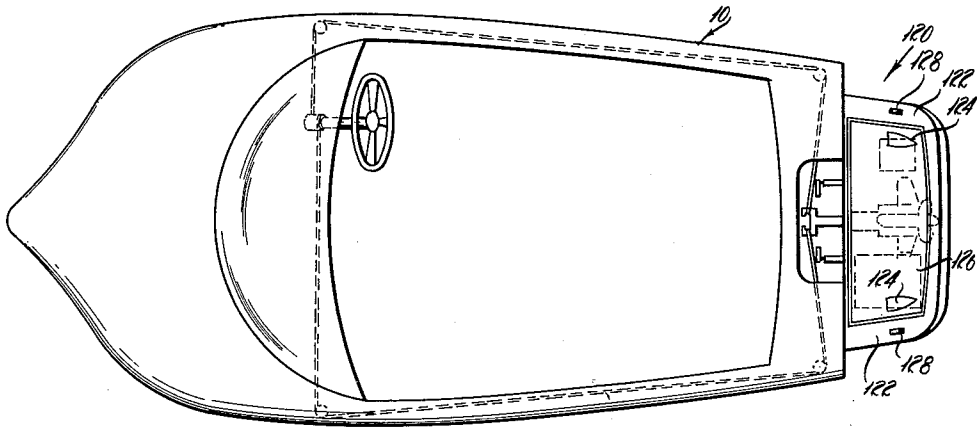

Fig. 1

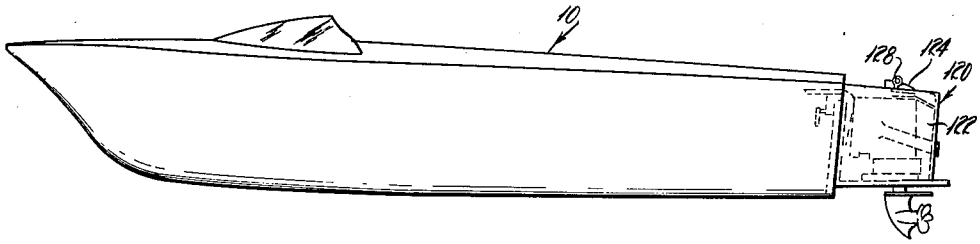

Fig. 2

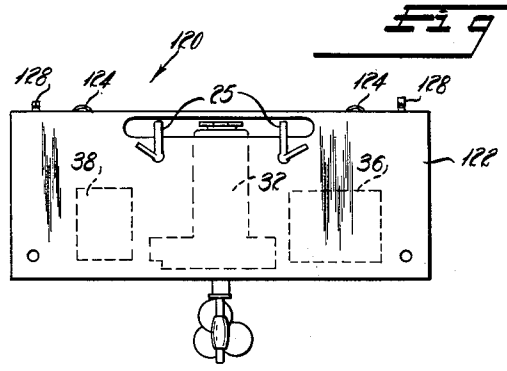

Fig. 3

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MARINE POWER PROPULSION ASSEMBLIES

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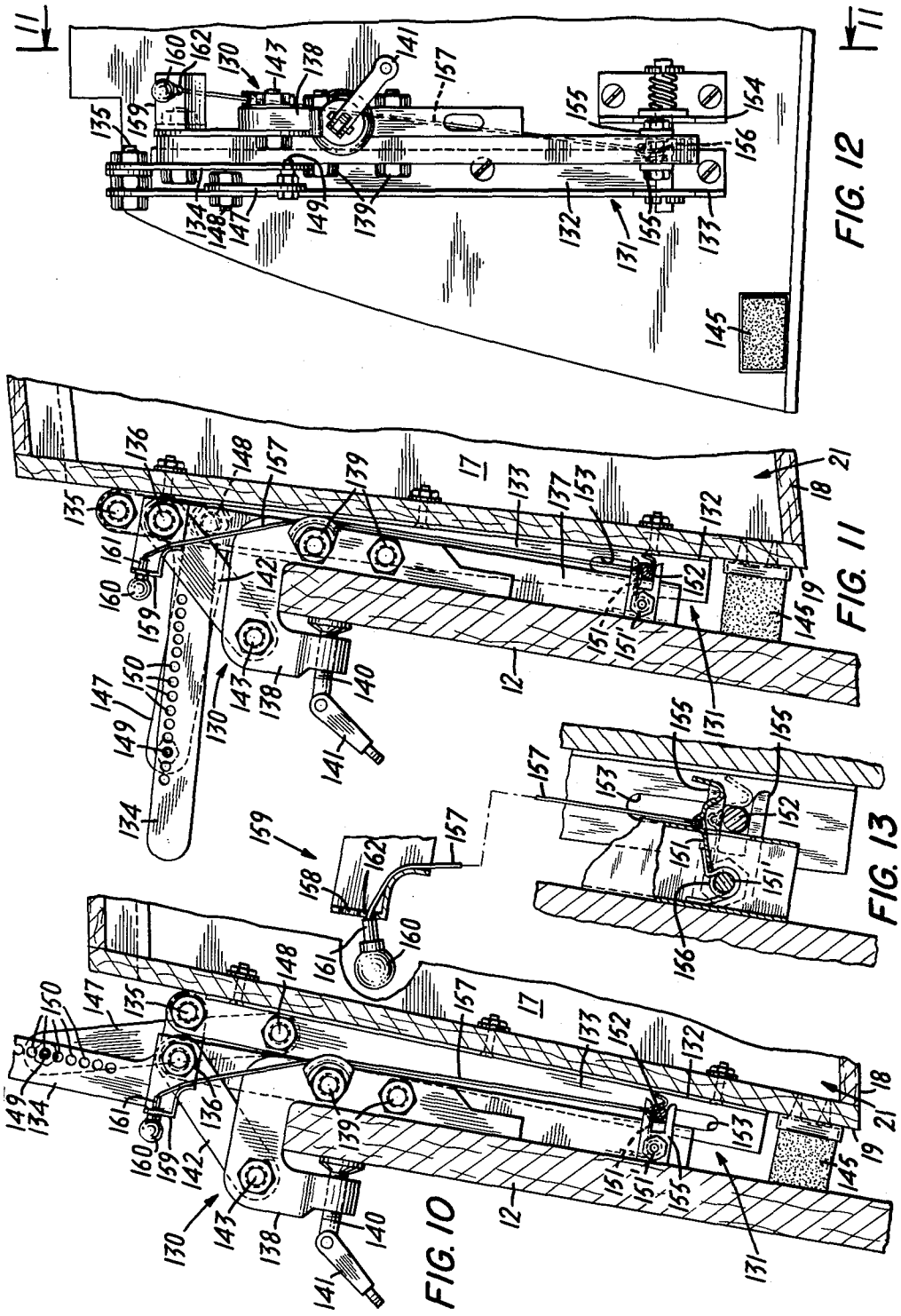

United States Patent Office 3,164,122 Patented Jan. 5, 1965

3,164,122

MARINE POWER PROPULSION ASSEMBLIES

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Filed Feb. 26, 1962, Ser. No. 177,695
11 Claims. (Cl. 115—18)

This invention relates to self-contained packaged marine power plant and propulsion assemblies and more particularly to such assemblies detachably and adjustably mountable on the outside of the transom of a boat hull, especially boat hulls primarily designed for outboard engines. This application is a continuation-in-part of co-pending application S.N. 770,088 filed October 28, 1958, now abandoned.

In the past ten years, the use of outboard engines for small boats has increased tremendously. Their primary advantages are portability and adaptability for use with virtually any type of boat designed for outboard engines. Because of their portability, outboard engines may be transported without difficulty to service stations located remotely from the waterways for quick expert servicing and repairs. With such ease of handling, the servicing and repair of outboard engines do not present the problems encountered with conventional inboard engines.

One of the disadvantages found with modern high-powered outboard engines is that despite their outboard position they require considerable inboard space. For example, a "tilt-in wall" is usually provided at the rear of the hull which represents waste space. Also, the portable gasoline tank which is now standard equipment take up valuable space inside the boat hull as does the battery for those engines having an electric starter. Since a large percentage of present-day outboard hulls are of the 14–16 foot class, space is at a premium. Also, it is well known that these smaller boats do not have the stability and seaworthiness of larger inboard boats.

A factor to be considered with the use of outboard engines on larger boats of the cruiser type is that certain design limitations are imposed on the boat hull because the free board at the transom must be made dangerously low in order properly to accommodate the outboard engines. Such a low freeboard greatly reduces the seaworthiness of the boat, particularly under operating conditions where there is a following sea. In some instances, mounting brackets have been provided on the transoms of boats so that the necessity of lowering the transom freeboard is eliminated but this has its limitations because a following sea may completely engulf the engine.

One of the primary advantages of an inboard-powered boat is its quietness of operation because the engine can be mounted in a sound-insulated engine compartment. Also, inboard-powered boats are usually more seaworthy because there is no necessity for a lowered freeboard at the transom. On the other hand, the engines for small inboard-powered boats usually take up desirable space at the center of the hull. Their installation and removal is a time-consuming and tedious operation. Further, lower regions of an inboard engine in a small boat are usually inaccessible and the engine must be completely removed from the hull for certain repairs. Because of the lack of portability of the inboard engine, a serviceman or mechanic must usually go to the boat instead of taking the engine into a shop where all necessary tools and service equipment are readily available.

In view of the foregoing considerations, a primary object of this invention is to provide apparatus for detachably mounting a complete power plant and propulsion assembly on the outside of the transom of a boat hull designed primarily for outboard engines, the apparatus providing the boat hull with the foregoing combined desirable characteristics of an inboard and outboard powered boat without the inherent disadvantages of either.

Another object of this invention is to provide a self-contained packaged power plant and propulsion assembly, the power plant being a prime mover mounted in a compartment adapted to be readily secured to and removed from the outside of the transom of various boat hulls and more particularly to the transoms of boat hulls primarily designed for outboard engines.

A further object of this invention is to provide apparatus for readily mounting on the transom of a boat hull a packaged power plant and its essential operational components such as gasoline tank and battery which are all disposed in a watertight compartment secured outside the boat hull.

Still another object of this invention is to provide a watertight compartment adapted to be readily mounted on the transom of a boat hull and contain a prime mover and its essential operational components, the compartment having a configuration adapted to increase the effective overall load waterline of the boat hull thereby providing greater stability and seaworthiness.

It is also an object of this invention to provide a self-contained packaged power plant and propulsion assembly which is removably mounted on the transom of a boat hull in such a manner that its position with respect to the hull can be changed as desired so as to provide optimum operating characteristics.

Other objects and advantages of the invention will become apparent from the following detailed description and drawing, in which:

FIGURE 1 is a top plan view of a conventional outboard motorboat hull with the self-contained packaged power plant and propulsion assembly of this invention secured to the boat transom;

FIGURE 2 is a side elevation of the boat and power plant assembly of FIGURE 1;

FIGURES 3 and 4 are front and side elevations respectively of the packaged power plant and propulsion assembly of this invention detached from the boat;

FIGURE 5 is an enlarged transverse sectional view of the self-contained packaged power plant and propulsion assembly of FIGURE 4 illustrating details of the mounting of the power plant in the watertight compartment;

FIGURE 6 is an enlarged fragmentary section showing details of the lower motor mount assembly;

FIGURE 7 is a top plan view of a conventional outboard motorboat hull with a modified form of the power plant and propulsion assembly attached to the transom of the boat;

FIGURE 8 is a side elevational of the boat and power plant assembly shown in FIGURE 7;

FIGURE 9 is a front view of the detached packaged propulsion assembly;

FIGURE 10 is a [side elevation] with portions in [vertical longitudinal section] showing a preferred mounting of the packaged power plant and propulsion assembly on the transom of a boat;

FIGURE 11 is a view similar to FIGURE 10, but showing the parts in another position;

FIGURE 12 is a partial front elevation of the power plant and propulsion assembly detached from the boat hull; and

FIGURE 13 is a fragmentary view showing a latch arrangement.

Referring now more specifically to the drawings, there is illustrated in FIGURES 1 and 2 a conventional open cockpit type boat hull 10 specifically designed to be powered by any conventional outboard motor (not shown) which would normally be detachably clamped to the

transom 12 and be tiltable inwardly into the well 14 in a well known manner.

The complete self-contained packaged power plant and propulsion assembly of this invention indicated generally at 16 comprises a compartment 17 formed by bottom, front, rear and side walls 18, 19, 20, and 21, respectively, secured together in watertight relation. The compartment is provided with hatch cover 22 and air scoops 24. The front wall 19 of compartment 17 fits flush against the transom 12 and is shown detachably secured to the boat 10 by clamps 25. The sides 21 are tailored to conform with sides 28 of the boat to form a smooth continuation of the sheer lines. The bottom 18 of the compartment 17 may be raised slightly as indicated to form a small step 30 on the bottom of the boat hull which in some instances will provide improved speed and planing characteristics, or the bottom of the compartment may be tailored to form a continuation of the bottom as well as the sides of the boat hull. In either case, the assembly 16 may be provided with a keelson as shown at 31.

A suitable length for the sides 21 of compartment 17 when average size engines of about 40 horsepower are used, is about 2½ feet. Thus, the compartment 17 increases the effective overall load waterline of the boat hull by 2½ feet. This increase markedly improves the stability and seaworthiness in boat hulls of the 14 to 20-foot range. Furthermore, openings in the compartment can be made completely watertight by suitable means to form a sizable flotation unit when the boat is left in the water unattended for long periods and will serve to prevent sinking in case the main hull should become punctured or filled with water for any reason. Also, in case of an emergency offshore or when help is not available, the compartment 17 could be quickly made watertight as a safety precaution. In the event of an extreme emergency such as an uncontrollable fire in the compartment 17, the entire package assembly 16 could be quickly jettisoned from the boat hull. Moreover, the compartment 17 is ideally suited for commercially available automatic fire extinguishing systems.

Mounted in the compartment 17 is a power plant comprising a prime mover which is indicated generally at 32 and may be a single or multi-cylinder two or four-cycle water-cooled internal combustion engine preferably having its crank shaft axis disposed vertically for a direct drive through the bottom 18 of the compartment 17 to a conventional propeller drive assembly indicated generally at 34. The propeller drive assembly is preferably of a type widely used with conventional high-power outboard motors, and includes gearing which is shiftable by dog-clutch or other means between forward, neutral and reverse positions.

All essential operational components for the engine 32 including a gasoline tank 36 and a battery 38 are secured in any suitable manner in the compartment 17.

The engine 32 is mounted for limited pivotal or swinging movement about a substantially vertical axis to steer the boat. Details of the mounting assembly are illustrated in FIGURES 5 and 6. The principal components of the mounting assembly for the engine 32 are a socket assembly 40 secured to the bottom of the compartment 17, a ball assembly 42 received in the socket assembly 40, and a frame assembly 44 rigidly secured to the upper surface of the ball assembly and adapted to be directly connected to the power plant.

The socket assembly 40 includes a channel 46 having a flat body portion 48 and downwardly extending integral side flanges 50. The flat body portion 47 is provided with a central circular opening 52 through which a socket member 54 having a segmental spherical surface extends. The member 54 is provided with a peripheral flange 56 preferably welded to the upper surface of the channel. The socket members may be secured in place by other means or may be formed integrally with the channel 46. A resilient shock and insulation panel 58 of rubber or similar elastic material is positioned under the channel 46 in surrounding relation with the socket member 54. When relaxed, the shock panel 58 is of greater thickness than the width of the channel side flanges 50. The assembly comprising the channel 46, socket 54 and shock pad 58 is secured to the bottom of the compartment by a plurality of bolts 60 in a position to dispose the lower lip of the socket 54 in substantially exact alignment with a circular opening 62 which is cut through the floor of the compartment and keelson 31. The rubber panel 58 not only tends to absorb shock and vibration, but also provides a fluid tight seal between the socket assembly 40 and the portion of the compartment floor 18 surrounding the opening 62.

When the socket assembly 40 is in place, the ball assembly 42 carrying the frame assembly 44 is installed and held in place by a retainer ring 64, which is secured after assembly of the ball unit by a plurality of nut and bolt assemblies 66 which extend upwardly through the channel body 46 and the socket flange 56. O-rings 68 and 70 encircle the ball assembly adjacent the joint between the flange 56 and retainer ring 64 and at the lower end of the socket 54, respectively, to provide low-cost, low-friction, reliable seals at these points.

The vertical disposition of the power plant drive axis is determined by adjustment of an upper mount indicated generally at 72 comprising a bracket 74 secured to the upper end of the power plant 32 by a resilient shock mount 76 attached by a bolt 78 suitably threaded into an upper portion of the power plant 32. A resilient shock mount 80 secured to the rear wall 20 by bolts 82 supports a triangular bracket 84 to which bracket 74 is slidably adjustably secured by a lock bolt and nut assembly 86 which clamps a channel 88 rigid with the bracket 84 against a pair of spaced upstanding flanges 90 rigid with bracket 74. With the foregoing upper mount, the vertical axis of the power plant 32 may be tilted forward or aft as desired by loosening the lock bolt and nut assembly 86, moving the power plant to the desired position, and retightening the bolt. The base of the bracket 84 secured to the rear wall 20 is substantially the same width as that of the power plant 32. Thus with the interlocking of the channel 88 and flanges 90, a strong and rigid upper motor mount is achieved. It will be noted that the axis of the bolt 78 which secures the bracket 74 to the upper end of the power plant, coincides closely with the axis of the ball assembly 42, so that the entire power plant and propeller drive assembly may be freely swung about the axis of the bolt 78 and the axis of the ball assembly 42, thereby changing the direction of thrust to steer the boat without the use of rudders and associated mechanisms previously used in all known inboard installations. Swinging of the power plant 32 for steering is facilitated by a flexible exhaust line 92.

The adjustment provided at the upper mount 72 permits fore and aft tilting of the entire assembly to change the angle of the propeller shaft as desired to obtain positive, negative or zero lift at the transom, to permit trimming of the boat to compensate for varying loads and weight distribution to thereby obtain maximum performance under widely varying conditions.

Bracket 74 may be provided with a lift ring as indicated at 93 for convenience in removing the power plant 32 from the compartment 20 when so desired.

Further details of the apparatus for mounting of a power plant and propeller drive assembly and its removal from a boat are illustrated and described in co-pending application Serial No. 586,949 filed May 24, 1956, now Patent No. 2,976,836.

A tiller 94, rigid with the power plant 32 so that swinging movement thereof steers the boat, is controlled by the usual steering cables 96 and 98 passing over respective pulleys 100, 102, 104 and 106 (FIGURE 1) to a conventional steering wheel and drum assembly indicated generally at 108. The tiller 94 extends through

an elongated horizontally disposed opening 110 in the front compartment wall 19, coinciding with the bottom and length of the usual cut-out section in the transom of conventional outboard powered boat hulls. Operation of the cables 96 and 98 will thus swing the entire power plant 32 and propeller drive assembly 34 about a substantially vertical axis. Other commonly used types of steering controls, such as gear and sector, etc. may also be used advantageously when connected to the tiller 94.

Operation of the power plant 32 is controlled through a conventional throttle and gear shift assembly indicated generally at 112 which is operatively connected through control cables 114 to the power plant 32 in any well known manner.

Referring now to FIGURES 7, 8 and 9 of the drawings, there is illustrated a modification of the invention wherein a packaged power plant and propulsion assembly indicated generally at 120 is mounted on the boat hull 10. The assembly 120 is identical with the assembly 16 illustrated and described in connection with FIGURES 1–6, except that a compartment 122 having a transverse cross-section of substantially rectangular configuration and of smaller width and depth than compartment 17 is used instead. With its smaller size and rectangular cross-sectional configuration, compartment 122 is adapted to be mounted on virtually any boat hull having a flat substantially vertical transom. The assembly 120 has all of the advantages of the apparatus illustrated and described thus far and has the additional advantage in that the compartment 122 does not have to be tailored to fit a particular boat hull. Because of its smaller size, air scoops 124 are provided on a hatch cover 126 instead of the top of compartment 122.

For ease in handling when the assembly 120 is to be frequently removed from the boat, installed on another boat, or dropped off at a service station, lifting rings 128 are provided on the top of compartment 122. These rings may also be used for water ski tow lines, mooring lines and the like.

While both compartment 17 illustrated in FIGURES 1–6 and compartment 122 illustrated in FIGURES 7–9 are detachably secured to the boat transom by clamps 25, it should be understood that if desired, the compartments may be permanently secured to the boat transom by suitable bolts (not shown) through the transom and adjoining wall of the compartment. Such a semi-permanent installation of the compartment on the boat does not detract from the portability of the power plant because the entire power plant and propeller drive assembly may be easily removed from its compartment or installed therein in less than ten minutes.

In FIGURES 10 to 12 of the drawings, there is illustrated a preferred mode of mounting the compartment 17 of the power plant and propulsion assembly on the transom 12 of a boat so as adjustbly to vary the position of the compartment relative to the boat. The compartment 17 is releasably secured to the boat transom in selected position by two laterally spaced mounting assemblies 130 which are preferably located near, but spaced inwardly from, the lateral sides 21 of the compartment. As the two mounting assemblies 130 are identical except that one is preferably reversed in position from the other, only one of the assemblies is shown in the drawings.

Each of the mounting assemblies 130 comprises an attaching bar 131 secured to the forward wall 19 of the compartment 17 and extending in an up-and-down direction. As illustrated by way of example in the drawings, the attaching bar 131 is of angular cross-section with one flange 132 bolted or otherwise secured to the forward wall 19 of the compartment 17 and a second flange 133 projecting forwardly from the wall 19 at approximately right angles. At its upper end, the attaching bar 131 is pivotally attached to one end of a trim adjustment lever 134 by a bolt 135 passing through aligned holes in the

latter and in the flange 133 of the attaching bar. The trim adjustment lever 134 is shown as being L-shaped and is pivotally mounted by a bolt 136 on the upper end of a transom transport 137 which is secured to the boat transom 12 by a clamp 138. The clamp is approximately C-shaped so as to fit over the upper edge of the boat transom and is secured to the transom clamp support 137 by bolts 139. It is provided with a conventional threaded clamping member 140 and pivoted handle 141 for securing the clamp on the transom. An upper end portion of the transom clamp support 137 extends up above the boat transom and is braced by an angularly extending stabilizer bar 142 secured at one end to the transom clamp support 137 by the pivot bolt 136 and at the other end to a forward portion of the clamp 138 by a bolt 143.

Near the bottom 18 of the compartment 17, there are provided laterally spaced lower transom supports 145 which are secured to and project forwardly from the front wall 19 of the compartment in a position to engage the boat transom 12. The lower transom supports 145 are preferably resilient, comprising, for example, rubber blocks which provide cushioning, and vibration and shock absorption. It will be seen that the lower transom supports co-operate with the trim adjustment levers 134 to support and position the compartment 17 on the transom of a boat. When the adjustment lever 134 is swung about the pivot 136 in a counterclockwise direction from the position shown in FIGURE 10 to that shown in FIGURE 11, the point of pivotal attachment of the attaching bar 131 to the lever 134 is moved upwardly and forwardly. The compartment 17 is thereby raised and tilted forwardly with respect to the boat transom 12. In this movement, the lower transom supports 145 act as sliding fulcrums about which the compartment 17 is tilted. It will thus be seen that the angular position of the compartment 17 and also its vertical position with respect to the boat transom 12, can be trimmed as desired to provide optimum operating characteristics. If desired, the levers 134 can be reversed by turning them side-for-side so that when the handle portion of the levers are in the position shown in FIGURE 11, the other leg of each lever will extend downwardly instead of upwardly. With this reversal, the compartment will move downwardly instead of upwardly when it is tilted forwardly with the transom.

Means is provided for releasably locking the trim adjustment lever 134 in any selected position. As illustrated in the drawings, the locking means comprises a locking lever 147 pivotally connected to the attaching bar 131 by a pivot bolt 148 located below the pivotal connection 135 of the trim adjustment lever 134. Near its opposite end, the locking lever 147 is provided with a laterally projecting pin 149 adapted to fit into one or another of a series of holes 150 provided in the trim adjustment lever 134. The trim adjustment lever 134 and locking lever 147 are sufficiently resilient to permit disengagement of the locking pin 149 from the hole 150 in which it is engaged and its reengagement in another selected hole. Except when disengaged by lateral force exerted on one or another or both of the levers 134 and 147, the locking pin 149 is held in secure engagement with a selected hole 150 by the inherent resilience and elasticity of the lever.

The mounting of the power plant and propulsion assembly is not illustrated in FIGURES 10 to 12 as it may be the same as described above with reference to FIGURES 1 to 9. It will be understood that the propelling force exerted by the propulsion assembly will be transmitted through the lower transom supports 145 directly to the boat transom 12, thus providing a strong yet cushioned connection between the compartment and the boat for transmission of the propeller thrust. As the lower transom supports 145 engage the transom near the bottom of the boat, the transom is relieved of the high stress to which it is frequently submitted by large

outboard motors clamped to the upper edge portion of the transom.

Means is provided for releasably holding the compartment 17 from tipping up when the direction of drive of the propeller unit is reversed while permitting tipping if the propeller unit strikes an obstacle or if it is desired to inspect or service the propeller unit. As illustrated in the drawings, the holding means comprises a spring hook 151 pivotally monuted on the transom by a pin 152. The hook 151 engages a striking pin 152 which is slidable in elongated holes 153 provided in the flange portions 133 of the bar 131 and an auxiliary bar 154. Spaced arms 155 on the transom hold the pin in position to be engaged by the hook 151 while a coil spring 156 urges the hook into engagement with the striking pin. The hook is so formed and is sufficiently resilient to be disengaged by predetermined force acting rearwardly on the compartment. The hook 151 is manually disengageable from the striking pin by a cable 157 attached to the hook and extending upwardly. The cable extends through a hole 158 provided in a bracket 159 attached to the upper part of the boat transom. A knob 160 attached to the end of the cable has a shank portion 161 which is small enough to pass through the hole 158 but too large to enter a connecting smaller hole 162 in the bracket 159. The length of the cable is selected to hold the hook 151 disengaged when the knob is in its outer position.

It will be understood that the several features of the embodiments herein shown and described are mutually interchangeable in so far as they are compatible with one another.

The double wall provided by the boat transom and adjoining side of the compartment provides a highly effective sound barrier. If desired, additional quietness of operation may be had by providing the interior of the compartments with a sound insulating material. Thus with the packaged power plant and propulsion assembly of this invention, a quietness of operation is achieved that is not possible with conventional exposed outboard engine installations.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiments are therefore to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claims are therefore intended to be embraced therein.

What is claimed and desired to secure by Letters Patent is:

1. Apparatus for mounting a power and propulsion assembly outside a boat hull having a transom, the combination comprising a compartment watertight at least at the sides and bottom thereof, means for securing said compartment on the outside of the transom, as an extension of the hull, a mount assembly adapted to detachably support a power plant vertically in said compartment, an opening through the bottom of said compartment below the hull waterline, a socket construction mounted in the bottom of said compartment adjacent said opening, a ball construction carrying said mount assembly and received in said socket for universal movement therein with respect to the compartment, a propulsion assembly disposed below the bottom of said ball construction, driving connections between said propulsion assembly and power plant, said driving connections extending through said ball and means sealing said opening to maintain watertightness of said compartment.

2. In combination with a boat hull having a transom and a bottom, a complete self-contained power plant and propulsion assembly comprising a floatable compartment having side walls including a front side wall and a bottom having a hole therein, means for removably mounting said compartment on the transom of a boat, an internal combustion engine in said compartment and having a housing and a drive shaft, means supporting said engine in said compartment with said drive shaft registering with said hole, said supporting means comprising a socket mounted on said bottom over said hole, an engine housing support portion fitting in said socket to permit rotation of said engine housing about an approximately vertical axis and fore-and-aft tilting of said engine relative to said compartment and means adjustably positioning an upper portion of said engine housing to vary the tilt position of said engine, and a propeller assembly comprising a propeller and a housing carried by said engine housing support portion and driving connections extending through said socket to connect said propeller with said engine drive shaft, whereby said engine housing is rotatable about said axis to provide steering for said boat and is adjustably tiltable to trim said propeller assembly with respect to the boat.

3. A power plant and propulsion assembly according to claim 2, in which said mounting means comprises means for selectively tilting said compartment relative to the transom of a boat and means for releasably retaining said compartment in selected position.

4. A power plant and propulsion assembly according to claim 3, in which said mounting means comprises fulcrum means between said front side wall of said compartment and the transom of a boat, said fulcrum means being near the bottom of said compartment, and means acting between an upper portion of said compartment and said transom to tilt said compartment about said fulcrum.

5. A power plant and propulsion assembly according to claim 4, in which said fulcrum means comprises resilient means providing a cushioned, thrust-transmitting connection between said compartment and transom.

6. In combination with a boat hull having a transom and a bottom, a complete self-contained power plant and propulsion assembly comprising a floating compartment having a bottom and side walls including a front side wall, an internal combustion engine mounted in said compartment, a propulsion assembly driven by said engine and mounted on said compartment and means removably mounting said compartment on the transom of a boat, said mounting means comprising fulcrum means between a lower portion of said front side wall of the compartment and a lower portion of said transom, said fulcrum permitting tilting of the compartment about a horizontal transverse axis located near the bottom of said compartment, clamp means removably clamped over an upper edge portion of said transom and means connecting said clamp means with an upper portion of said compartment, said connecting means comprising means for varying the distance between the upper portion of said compartment and the transom to cause said compartment to tilt about said fulcrum and means for releasably securing said compartment in selected tilted position.

7. A power plant and propulsion assembly according to claim 6, in which said fulcrum means comprises resilient means providing a cushioned thrust-transmitting connection between said compartment and transom.

8. A power plant and propulsion assembly according to claim 6, in which said connecting means comprises at least one lever pivoted on said clamp means and pivotally connected with said compartment, said lever being swingable about its pivot on said clamp means to move the upper portion of the compartment toward or away from the transom.

9. A complete self-contained power plant and propulsion assembly for a boat hull having a transom comprising a floating compartment having a bottom and side walls, means for detachably mounting said compartment on the transom of a boat hull so that said compartment is positioned rearwardly of said hull, an inboard internal combusion engine having a drive shaft, means mounting said engine inside said compartment with said drive shaft

approximately vertical, said engine being supported solely by said compartment, means defining an opening in the bottom of said compartment in line with said engine drive shaft, a propeller assembly mounted below said opening, means operatively connecting said propeller assembly to said drive shaft to be driven thereby and means sealing said opening to maintain watertightness of said floating compartment, whereby said entire power plant and propulsion assembly is detachable from said boat hull as a complete floatable unit, said detachable mounting means comprises fulcrum means between a lower portion of said compartment near the bottom thereof and said transom to permit tilting of said compartment about a horizontal transverse axis, clamp means removably clamped over an upper edge portion of said transom and means connecting said clamp means with an upper portion of said compartment, said connecting means comprising means for varying the distance between the upper portion of said compartment and the transom to cause said compartment to tilt about said fulcrum and thereby vary the trim of said propeller assembly, and means for releasably securing said compartment in selected tilted position.

10. A power plant and propulsion assembly according to claim 9, in which said connecting means comprises at least one lever pivoted on said clamp means and pivotally

connected with said compartment, said lever being swingable about its pivot on said clamp means to move the upper portion of the compartment toward or away from the transom.

11. A power plant and propulsion assembly according to claim 6, in which said connecting means comprises means for raising or lowering said compartment relative to said transom.

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