Sept. 7, 1965 E. H. SHARP 3,204,598

RESILIENT MOUNT FOR MARINE DRIVE UNITS

Filed May 1, 1963 3 Sheets-Sheet 1

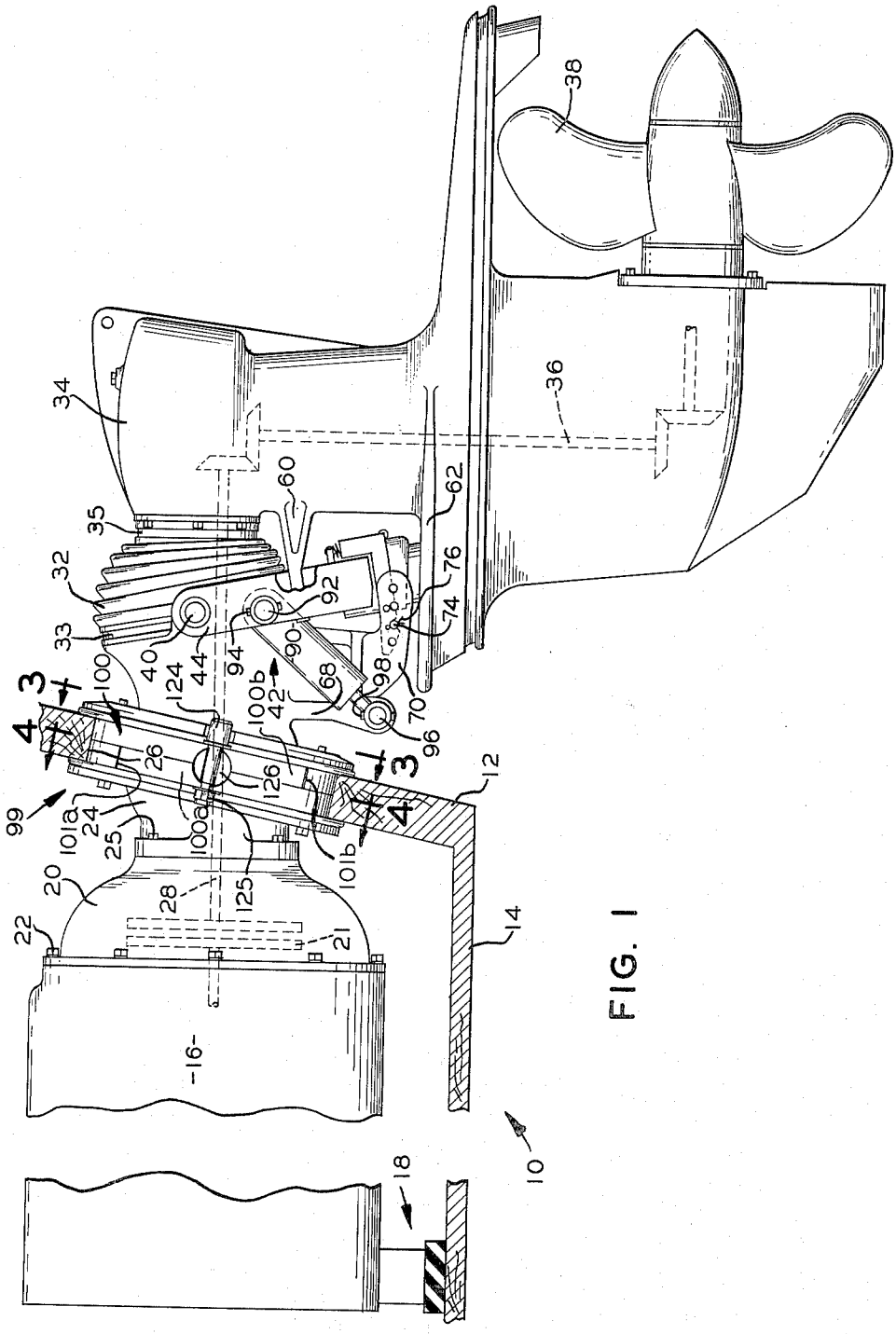


FIG. 1

Sept. 7, 1965 E. H. SHARP 3,204,598

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Filed May 1, 1963 3 Sheets-Sheet 2

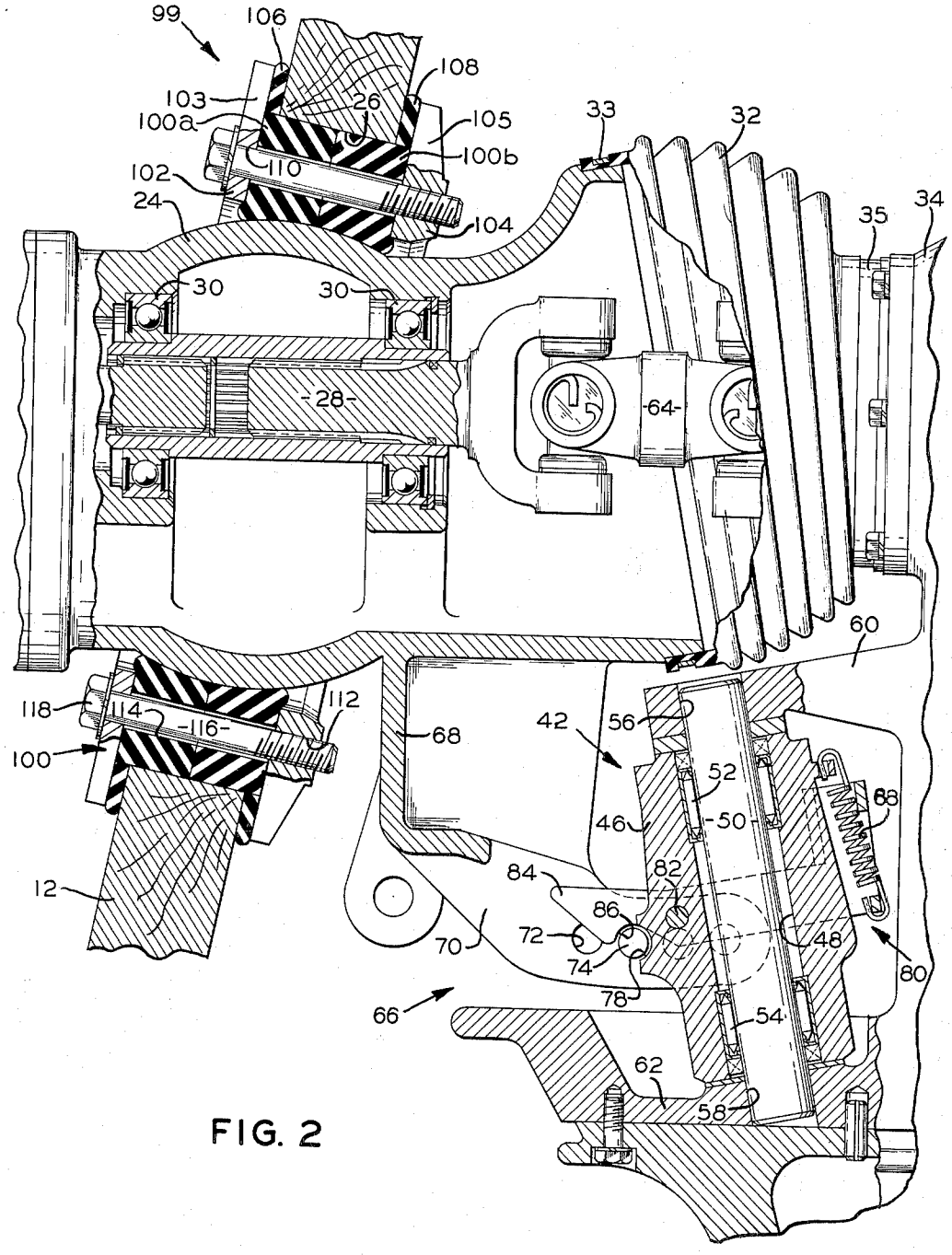


FIG. 2

Sept. 7, 1965 E. H. SHARP 3,204,598

RESILIENT MOUNT FOR MARINE DRIVE UNITS

Filed May 1, 1963 3 Sheets-Sheet 3

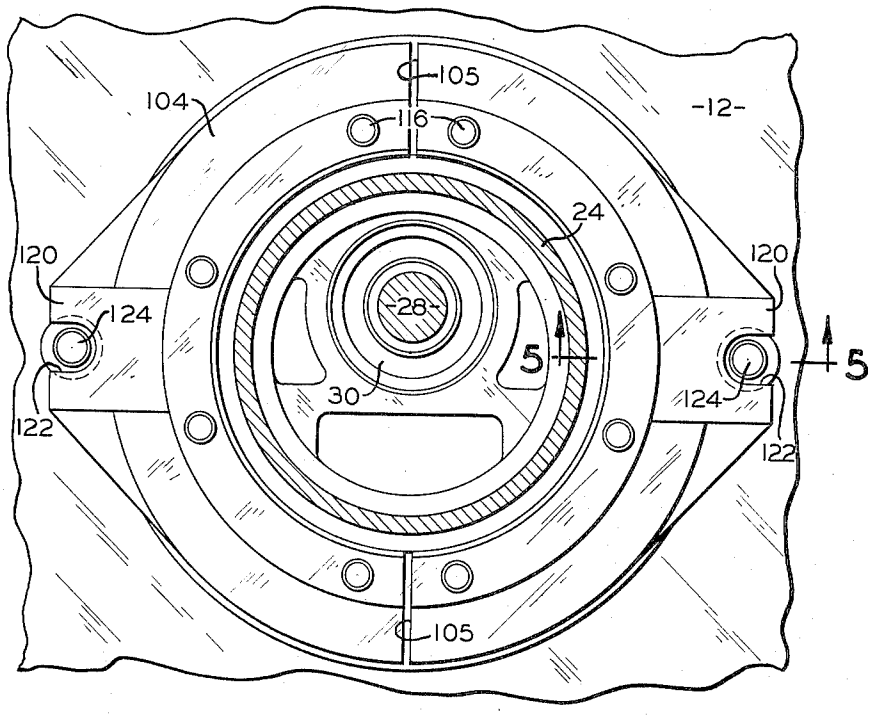


FIG. 3

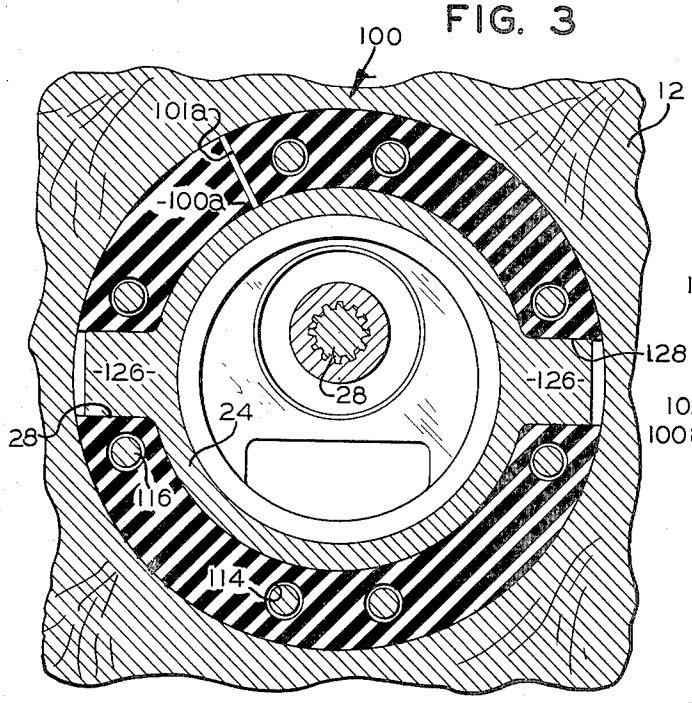


FIG. 4

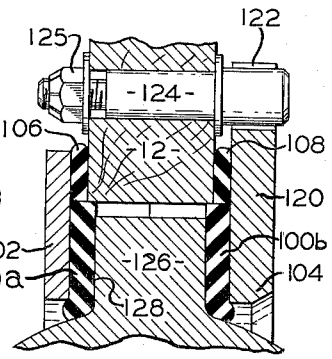


FIG. 5

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3,204,598

# RESILIENT MOUNT FOR MARINE DRIVE UNITS

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18 Claims. (Cl. 115—34)

This invention relates to mounting means in general and more specifically to a resilient means for mounting an outboard propulsion unit to the transom of a boat wherein the forces imposed upon the transom by the propulsion unit are transmitted through the resilient means.

Prior art devices for resiliently mounting such a propulsion unit are deficient in several respects. One such mount, as shown in Patents 2,977,923 and 3,006,311, is deficient in that much of the thrust and impact load from the propulsion unit is transmitted in a non-resilient manner to the transom of the boat by the forward stop means which limits movement of the lower end of the unit toward the transom. Accordingly, vibrations and thrust are transmitted directly to the transom, and additionally, when the propulsion unit is pivoted vertically upwardly, as when the lower end of the unit strikes an obstruction, the impact of the unit's return to a driving position against the forward stop means is imposed non-resiliently upon the transom.

Further, the unit described above requires that the forward stop means is carried by a member which is bolted to the transom requiring the provision of holes in the transom. Also, no provision is present in the resilient mount whereby the same is adapted for use with a wide variety of transoms disposed at different angles; accordingly, if the angle of the transom varies substantially from that for which the particular mount is designed, the mount cannot be used therewith.

Another shortcoming of these prior art devices is that in the propulsion of the craft by the propulsion unit, the latter is being driven through the water by a propeller. This action tends to rotate the propulsion unit about a longitudinal axis and, such rotational forces are transmitted to the mounting means for the propulsion unit. The resilient means of the prior art does not satisfactorily absorb such rotational forces; also, the forward stop means will transmit such forces directly to the transom.

In another prior art device, as shown in Patent 2,953,335, a shock absorber is shown disposed between the propulsion unit and the mounting means to cushion shock loads therebetween. However, the mounting means is secured to the transom so that the reaction forces of the shock absorber to the mounting means are directly imposed on the transom.

It is, therefore, an object of this invention to provide a resilient mounting means for use between the transom of a boat hull and an outboard propulsion unit wherein forces are transmitted to the transom from the propulsion unit in a resilient manner.

Another object of this invention is to provide such a resilient mounting means which also functions as a rear mounting means for the motor which drives the propulsion unit.

Yet another object of this invention is to provide such a mounting means wherein the forward stop means for the propulsion unit is resiliently mounted relative to the transom.

A further object of this invention is to provide a resilient mounting means for a propulsion unit and the forward stop means which does not require mounting bolts passing through the transom for the attachment thereof.

Yet a further object of this invention is to provide a resilient mounting means wherein rotational forces are



transmitted by the propulsion unit to the transom in a resilient manner.

Further and other objects of this invention will become apparent upon a consideration of the specification when taken in view of the following drawings wherein:

FIG. 1 is an elevational view of the propulsion unit of this invention shown mounted on a sectioned boat transom and drivingly connected to a motor mounted in the boat hull;

FIG. 2 is an enlarged sectional view of the resilient mounting means and the structure in the immediate vicinity thereof;

FIG. 3 is a view taken along the line 3—3 of FIG. 1;

FIG. 4 is a view taken along the line 4—4 of FIG. 1; and

FIG. 5 is a view taken along the line 5—5 of FIG. 3.

In one preferred embodiment of this invention, a boat terminating at its rearward end with the usual transom, is provided with an inboard mounted motor connected by suitable drive means through an aperture in the transom to a dirigibly mounted propulsion unit. Housing means connected to the rearward end of the motor extend through the aperture in the transom, which means houses the usual clutch and a portion of the drive means to the propulsion unit. Rearwardly of the transom, the housing carries a pair of spaced aligned first pivot means to which an intermediate pivotal member is pivotally secured. The intermediate member in turn has second pivot means thereon to which the propulsion unit is pivotally secured. Either the first or second pivot means may be adapted for pivoting about a horizontal axis so that the propulsion unit may be pivoted vertically into and out of the water while the other pivot is adapted for pivoting about a substantially vertical axis so that the propulsion unit may be pivoted for steering. The housing also carries a forward stop means, which depends therefrom and is adapted to positionably engage the propulsion unit and limit the forward pivoting movement of the lower end thereof. The forward stop means additionally carries a spring loaded latch means which engages and maintains the propulsion unit against the stop means during reverse drive operation of the propulsion unit; the spring loading is provided so that the latch means may be overruled during vertical kickup of the unit.

Interposed between the housing and the transom is a resilient mounting means which provides the resilient connection therebetween. The resilient mounting means includes an elastomeric element disposed between the housing and the transom and a pair of flanges, one disposed forwardly and one disposed rearwardly of the transom and adapted to be secured together to securedly compress the elastomeric elements against the transom and the housing. Preferably, the housing and the resilient mounting means are formed with co-operating spherical surfaces of engagement so that the angle of the transom can vary substantially without interfering with the engagement between the resilient mounting means and the housing.

Lug means are also provided on the housing and extend horizontally therefrom, at its laterally extending centerline, into engagement with the resilient mounting means so that circumferential and longitudinal movement between the housing and the resilient mounting means is resiliently resisted by this engagement. By positioning the trunnions on the laterally extending centerline of the housing, the trunnions do not interfere with relative angular positioning between the resilient mounting means and the housing resulting from transom angle variation.

Referring to the drawings, a boat hull shown fragmentarily at 10 includes a transom 12 disposed at an obtuse angle with respect to the hull bottom 14. The forward end of a motor 16 is suitably secured to the bottom 14 by means of a pair of laterally spaced resilient mounts

one of which is shown at 18. Secured to the rearward end of the motor 16 is a two-piece housing including a clutch housing 20, surrounding the usual motor driven clutch 21, suitably secured to the motor 16 as by bolts 22, and a drive line housing 24, suitably secured to the rear of the clutch housing 20 as by bolts 25 and extending rearwardly through an opening 26 in the transom 12.

The drive line housing 24 rotatably mounts a portion of a drive line 28 by means of a pair of longitudinally spaced bearings 30 carried by the housing. The portion of the drive line shown in FIG. 2 is connected to the clutch 21 and driven by the motor 16.

The drive line housing 24 terminates rearwardly of the transom 12 and a flexible boot 32 is suitably secured to the rearward end thereof as by a strap 33 and to a propulsion unit 34 as by a strap 35 which unit is driven by the drive line 28 and pivotally connected to the housing 24. The drive line 28 is suitably drivingly connected to a double right angle driving arrangement 36 within the propulsion unit 34, which right angle driving arrangement in turn drives the usual propeller 38 carried by the unit in a well known manner.

The propulsion unit 34 is pivotally secured to the housing 24 so that the same may pivot vertically about a horizontal, laterally extending axis for "kick-up" out of the water and may pivot about a substantially, vertically extending axis for steering. More particularly, the housing 24 is provided with a pair of axially spaced aligned pivot means in the form of trunnions, one of which is shown at 40, the other trunnion being diametrically opposed with respect to the shown trunnion and secured to the opposite side of the housing 24. An intermediate pivotal member in the form of a yoke 42 has a pair of furcations 44, with each furcation pivotally connected to one of the trunnions 40. The central body portion 46 of the yoke 42 is provided with a central opening 48 in which a shaft 50 is pivotally mounted by means of a pair of spaced bearings 52 and 54. The shaft 50 is securedly attached in a pair of aligned openings 56 and 58 in bosses 60 and 62 respectively, which bosses are carried by and extend forwardly from the unit 34.

Accordingly, for vertical kick-up of the propulsion unit 34 about a horizontal axis, the unit and the intermediate pivot member 42 pivot unitarily about the trunnions 40, while for turning of the propulsion unit 34 about a substantially vertical axis as in steering, the unit is pivoted relative to the intermediate pivot member. It is understood that the pivots may be reversed so that the intermediate member 42 and the unit 34 pivot unitarily about a vertical axis relative to the housing 24 for steering, and that the unit 34 pivots about a horizontal axis relative to the intermediate member 42 for kick-up.

The axes of the horizontal and vertical pivots are constructed so that they intersect, and the drive line 28, which passes between the furcations 44, is provided with a universal connection 64 with a medial universal action at the point of intersection so that the drive line 28 may be angularly displaced to accommodate the above pivotal movement.

Forward stop means, shown generally at 66, is provided to restrain forward movement of the lower end of the propulsion unit 34, that is, clockwise pivotal movement of the unit as shown in FIGS. 1 and 2, from its driving position. More particularly, the housing 24 has a bracket 68 depending therefrom at a position just rearwardly of the transom 12. The bracket 68 and housing are shown as an integral structure, however, the bracket may be formed separately from the housing and suitably secured thereto. The bracket 68 has a pair of laterally spaced legs 70 extending rearwardly from the base thereof, with one leg positioned on either side of the body portion 46 of the yoke 42. The legs 70 are provided with a plurality of aligned openings 72, through a selected pair of which an abutting rod 74 is positioned and secured as by a cotter pin 76. The yoke 42 is provided with a detent



78 which engages the rod and thereby prevents clockwise pivoting of the yoke 42 and propulsion unit 34. The aligned openings 72 are selected which will provide the proper positioning of the propulsion unit in the correct pivoted attitude for efficient driving operation of the boat hull 10. It should be noted that during forward propulsion of the boat hull 10, the propulsion unit 34 is constantly driven to pivot clockwise and firmly abuts the forward stop means 66. Additionally, when the unit 34 kicks-up and pivots counterclockwise, as when striking an obstruction, in the return of the unit to the driving position the same shockingly abuts the stop means 66. Further, the driving forces of the propeller which tend to rotate the unit about a longitudinally extended axis are transmitted to the forward stop means 66 through the engagement of the yoke 42 with the rod 74 as well as through the yoke 42 and trunnions 40. The forward stop means 66 and trunnions 40 transmit all these forces to the housings 20 and 24.

When the propulsion unit 34 is driven in reverse, it tends to pivot the unit counterclockwise and away from the forward stop means 66. To prevent such pivoting, a latch means 80, pivotally secured to the yoke 42 as by a pin 82, has a pair of forwardly extending spaced legs 84 which legs pass between the yoke 42 and the legs 70 of the bracket 68 and have detents 86 provided therein which engage the rods 74. A tension spring 88 carried by the yoke 42 and engaging the latch means 80, resiliently maintains the engagement between the detent 86 and the rod 74. During normal reversed operation, the detent's 86 engagement with the rod 74 prevents counterclockwise rotation of the unit 34, however, upon a shock load to the unit 34, as by striking a submerged obstruction, the rod 74 cams the latch means 80 clockwise against the biasing effect of spring 88 so that the unit may pivot to clear the obstruction.

Means are provided to dampingly absorb such kick-up. A pair of laterally spaced shock absorbers, one of which is shown at 90, each have one operative end thereof suitably secured to a furcation 44 as by a rod 92 passing through registering openings therein and fixed by a pin 94, and the other operative end thereof suitably secured to the forward stop means 66 by a rod 96 passing through registering openings therein and suitably fixed by a pin 98. Upon kick-up and shock return of the propulsion unit 34, the shock absorber cushions the pivotal movement in a well known manner. It should be noted that the reaction of the shock absorbers is imposed upon the forward stop means and through the latter directly to the housing 24.

Resilient mounting means, shown generally at 99, is provided to resiliently and sealingly mount the housing 24 in the opening 26 of the transom 12. More particularly, an annular resilient member 100 is positioned in the opening 26 and interposed between the transom 12 and the housing 24. The member 100 is formed from a suitable elastomeric material and is prepared in two portions, 100*a* and 100*b*, being split on the centerline of the transom; however this split is mainly for assembly purposes to accommodate certain structural elements to be discussed hereinafter. Additionally, the portions 100*a* and 100*b* may each be provided with a radially extending slot, shown at 101*a* and 101*b* respectively, for assembly purposes so that the same may be flexibly deformed to pass over the drive line housing 24. It should be noted that the slots 101*a* and 101*b* are not aligned and thereby do not interfere with the sealing qualities of the member 100. The cooperating surfaces of the resilient member and the housing 24 are spherical in form so that angular displacement of the transom 12 relative to the housing 24 does not affect the cooperation therebetween. The member 100 is formed with a width that is greater than the width of the transom 12. A pair of annular plates 102 and 104 are disposed forwardly and rearwardly respectively of the member 100, which plates ex-

tend radially beyond the opening 26 to overlie the transom 12, while being spaced radially outwardly from the housing 24. Each plate 102 and 104 may be provided with a diametric slot, 103 and 105 respectively, so that the plates are formed in equal halves for ease of assembly; however, each plate functions in a unitary manner. A pair of annular resilient rings 106 and 108 are respectively positioned between the plates 102 and 104 and the transom 12. The rings 106 and 108 are shown as separate structures; however, they can be formed integrally with the resilient member 100 if desired. The plates 102 and 104 and the member 100 are provided with a plurality of registering openings 110, 112, and 114 respectively, the opening 112 being threaded, and a bolt 116 is disposed in each of the plurality of aligned openings with its head 118 engaging the plate 102 and is threaded into the opening 112. The bolts 116 are tightened to compress the rings 106 and 108 between the plates 102 and 104 and the transom 12 and to compress the member 100 between the plates 102 and 104 so that the same, when compressed, securely resiliently engages the transom 12 and the housing 24.

Referring to FIGS. 1, 3 and 5, the plate 104 has a pair of diametrically opposed lugs 120, each having a radially extending slot 122. A stop pin 124 is secured to the transom as by the nut 125 and positioned medially in each slot 122; the slots 122 being greater in width than the pin 124. Accordingly, circumferential deflection between the housing 24, resilient member 100, and the plates 102 and 104 and the transom is first resiliently absorbed by the member 100; however, the pins 124 act as a positive stop to limit circumferential deflection between the member 100 and the transom 12 while such deflection can still resiliently take place between the housing 24 and the transom through deflection of the member 100.

To insure that no circumferential slip occurs between the housing 24 and the resilient member 100 and, further, to aid in transferring longitudinal loads therebetween, the housing 24, as shown in FIGS. 4 and 5, has a pair of radially extending diametrically opposed lugs 126, which lugs are positioned on the laterally extending centerline of the housing. The lugs 126 are positioned in registering openings 128 formed in the member 100; the openings 128 being divided between the two portions of the member 100 and it is mainly to accommodate these lugs that the member 100 is formed in two parts.

When relative movement occurs between the housing 24 and the transom 12, the same is transmitted from the housing to the resilient member 100 both by the pressing fit therebetween and by the engagement between the lugs 126 and the member 100. These loads are then resiliently transferred to the transom by the resilient member 100 and the rings 102 and 104 pressing against the transom. Since all loads from the propulsion unit 34 to the transom 12 are transmitted through the housing 24, all such loads are transmitted in a resilient manner. Further, since the housing 24 is secured to the back of the motor 16, the motor is also resiliently mounted to the transom.

While only a single embodiment of this invention has been shown and described it is understood that many changes can be made therein without departing from the scope of this invention as defined by the following claims.

What is claimed is:

1. The combination with a boat having a propulsion unit dirigibly mounted thereon and means for driving the propulsion unit extending through an opening in the boat transom and including a housing for the driving means on which the propulsion unit is dirigibly mounted, of a resilient mounting means mounting said housing to said transom, and trunnon means carried by said housing at the laterally extending centerline thereof and extending laterally from said housing into engagement with said resilient means whereby circumferential loads between said housing and said resilient means are transmitted therebetween by at least said trunnion means.



2. A resilient mounting for an outboard propulsion unit for a boat wherein drive means to said propulsion unit extends through an opening in the boat transom and is surrounded by a housing and the propulsion unit is pivotally mounted to the housing and resilient mounting means is disposed in the transom opening and is in pressing engagement with the housing and transom characterized in that the cooperating engaging surfaces of said housing and said resilient mounting means are arcuate in shape, and trunnion means carried by said housing at the laterally extending centerline thereof and extending laterally from said housing into engagement with said resilient mounting means so that circumferential loads between said housing and said resilient mounting means are transmitted by at least said trunnion means and the transom angle of inclination does not affect the engagement between said housing and said resilient housing means.

3. A sealing and mounting means for a transom mounted propulsion unit comprising in combination, a boat having a transom, an opening extending longitudinally through said transom, housing means extended through said opening and terminating rearwardly of said transom, a propulsion unit mounted on said housing means, and resilient means engaging said housing and said transom and including elastomeric means disposed between said housing and the opening in said transom and having a free width greater than said transom, and compressing means compressingly engaging said elastomeric means and compressing the same against said housing and transom to provide a resilient connection therebetween.

4. A sealing and mounting means for a transom mounted propulsion unit comprising in combination, a boat having a transom, an opening extending longitudinally through said transom, a motor carried by said boat, housing means carried by said motor and extending through said opening and being spaced from said transom and terminating rearwardly of said transom, a propulsion unit pivotally mounted on said housing means whereby the lower end thereof is adapted to move forwardly and rearwardly with respect to said transom, drive means drivingly connecting said motor and said propulsion unit and disposed within said housing means, a pair of compressing elements with one disposed forwardly and one disposed rearwardly of said transom, said compressing elements overlying said transom and being radially spaced from said housing, and elastomeric means compressively disposed between said compressing elements and between said compressing elements and said transom, said elastomeric means pressingly engaging said transom and said housing to provide a resilient connection therebetween, whereby said housing is resiliently connected to said transom and the space therebetween is sealed.

5. The sealing and mounting means defined in claim 4 wherein the engaging surfaces of said housing and said elastomeric means are formed arcuately so that variations in the transom angles do not affect the cooperation therebetween.

6. A sealing and mounting means for a transom mounted propulsion unit comprising in combination, a boat having a transom, an opening extending longitudinally through said transom, housing means extending through said opening and being spaced from said transom and terminating rearwardly of said transom, a propulsion unit pivotally mounted on said housing means so that the lower end thereof is adapted to move forwardly and rearwardly with respect to said transom, forward stop means carried by said housing and operative to limit the pivotal movement of the lower end of said propulsion unit, and resilient means engaging said housing and said transom and including elastomeric means

disposed between said housing and the opening in said transom and having a free width greater than said transom, and compressing means compressingly engaging said elastomeric means and compressing the same against said housing and transom to provide a resilient connection therebetween, whereby said housing, said propulsion unit, and said forward stop means are resiliently connected to said transom.

7. The combination according to claim 6 wherein said housing and resilient means have arcuate cooperating engaging surfaces whereby the transom angle does not affect the engagement therebetween.

8. The combination according to claim 6 wherein trunnion means are carried by said housing at the laterally extending centerline thereof and projected into engagement with said resilient means.

9. A sealing and mounting means for a propulsion unit comprising in combination, a boat having a transom, an opening extending longitudinally through said transom, a motor carried by said boat, housing means carried by said motor and extending through said opening and being spaced from said transom and terminating rearwardly of said transom, a propulsion unit pivotally mounted on said housing means so that the lower end thereof is adapted to move forwardly and rearwardly with respect to said transom, drive means drivingly connecting said motor and said propulsion unit and disposed within said housing means, forward stop means carried by said housing and operative to limit the pivotal movement of the lower end of said propulsion unit, an annular elastomeric means disposed in the opening of said transom and engaging said housing and having a free width greater than the width of said transom, the cooperating surfaces of said elastomeric means and said housing being of generally spherical configuration, a pair of annular compressing elements with one being disposed forwardly and one being disposed rearwardly of said transom and engaging opposed longitudinal sides of said elastomeric means, said compressing elements overlying said transom and said elastomeric means, means urging said compressing elements together thereby longitudinally compressing said elastomeric means and deforming the latter radially into pressing engagement with said transom and said housing, whereby said housing and said transom are resiliently connected and the space therebetween is sealed.

10. A sealing and mounting means for a propulsion unit comprising in combination, a boat having a transom, and opening extending longitudinally through said transom, a motor carried by said boat and including driving means extending through said transom, a housing means carried by said motor and extending through and spaced from said opening, said housing means surrounding at least a portion of said drive line and terminating rearwardly of said transom, a propulsion unit driven by said driving means, means pivotally connecting said propulsion unit to said housing means whereby the lower end of said unit is movable toward and away from said transom and the unit is pivotal about a substantially vertical axis for steering, forward stop means carried by said housing means and operative to limit the pivotal movement of the lower end of said propulsion unit toward and away from said transom, resilient means engaging said housing means and said transom and including elastomeric means disposed between said housing means and the opening in said transom and having a free width greater than the width of said transom, and a pair of anniular compressing elements defining a central opening through which said housing means extends, one of said elements being disposed forwardly and one being disposed rearwardly of said transom and engaging opposed longitudinal sides of said elastomeric means and overlying said transom, means urging said compressing elements together thereby longitudinally compressing said elastomeric means and deforming the latter radially into pressing engagement with said transom and said housing means, whereby said housing means, said propulsion unit and said forward stop means are resilently connected to said transom and the opening between said housing means and said transom is sealed, and a pair of trunnion means carried by said housing means and projecting laterally from said housing means at the laterally extending centerline thereof, said elastomeric means engaging said trunnion means whereby circumferential loads between said housing means and said elastomeric means is transmitted therebetween by at least the engagement between said trunnion means and said elastomeric means.

11. A sealing and mounting means for a propulsion unit comprising in combination, a boat having a transom, an opening extending longitudinally through said transom, a motor carried by said boat and including driving means extending through said transom, a housing means carried by said motor and extending through and spaced from said opening, said housing means surrounding at least a portion of said drive line and terminating rearwardly of said transom, a propulsion unit driven by said driving means, means pivotally connecting said propulsion unit to said housing means whereby the lower end of said unit is movable toward and away from said transom and the unit is pivotal about a substantially vertical axis for steering, forward stop means carried by said housing means and depending therefrom and operative to limit the pivotal movement of the lower end of said propulsion unit toward and away from said transom whereby said housing means provides the sole support for said propulsion unit, a pair of annular compressing elements defining central openings through which said housing means extends, one of said elements being disposed forwardly and one disposed rearwardly of said transom and overlying the same, elastomeric means engagingly disposed between said housing means and said transom and between said compressing elements and said transom, means urging said compressing elements together thereby compressing the portion of said elastomeric means between said elements and said transom to resilently connect said compressing elements and said transom and longitudinally compressing the portion of the elastomeric element between said housing means and said transom thereby deforming it radially into pressing engagement with said transom and said housing means, the engaging surfaces of said housing means and said elastomeric elements being formed substantially arcuate in shape so that the transom angle of inclination does not affect the engagement therebetween, and a pair of trunnion means carried by said housing means and projecting laterally from said housing means at a laterally extending centerline thereof, said resilient means surrounding and engaging said trunnion means whereby circumferential and longitudinal loads between said housing means and said elastomeric means are transmitted therebetween by at least said trunnion means and the engagement between said trunnion means and said elastomeric element does not interfere with variations in the position of the engagement of said housing means and said elastomeric element resulting from variations in the transom angle of inclination.

12. A device comprising incombination, a boat having a transom, said transom having an opening extending longitudinally through the same, a motor carried by said boat, a propulsion unit disposed rearwardly of said transom, drive means extending through said opening and drivingly connecting said motor and said propulsion unit, housing means carried by said motor and extending through said transom opening and surrounding at least a portion of said drive means, said housing means being spaced from said transom, means pivotally connecting said propulsion unit to said housing means whereby the lower end of said propulsion unit is pivotal toward and away from said transom, stop means for limiting forward pivoting movement of the lower portion of said propulsion

unit toward said transom, said stop means being carried by said housing means and spaced from said transom whereby said stop means transmits the load imposed thereon by said propulsion unit to said housing, and resilient means provided in said transom pressingly engaging said housing and resiliently mounting said housing to said transom and resiliently transferring fore and aft and circumferential loads therebetween.

13. The combination with a boat having a propulsion unit dirigibly mounted thereon and means for driving the propulsion unit extending through an opening in the boat transom and including housing means for the driving means and to which housing means the propulsion unit is pivotally mounted, of a stop means carried by said housing means for limiting vertical pivoting movement of said propulsion unit toward said transom, and resilient mounting means mounted in the opening in said transom and pressingly engaging said housing and said transom and resiliently mounting said housing means to said transom for resiliently transferring fore and aft and circumferential loads therebetween, and damping means operatively connecting said propulsion unit to said housing means to dampen vertical pivotal movement of said unit relative to said housing means so that the reaction loads of said damping means are imposed on said housing means and resiliently through said housing means and said resilient mounting means to said transom.

14. The combination with a boat having a propulsion unit dirigibly mounted thereon and a mechanism for driving the propulsion unit extending through an opening in the boat transom means and including housing means for the driving mechanism and to which housing means the propulsion unit is pivotally mounted, of a stop means carried by one of said aforementioned means for limiting vertical pivoting movement of said propulsion unit toward said transom means, resilient mounting means mounted in the opening in said transom means and pressingly engaging said transom means and said housing means and resiliently mounting said housing means to said transom means for resiliently transferring fore and aft and circumferential loads therebetween, and damping means operatively connecting said propulsion unit to said housing means to dampen vertical pivotal movement of said propulsion unit relative to said housing means so that the reaction loads of said damping means are imposed on said housing means and resiliently through the housing means and said resilient mounting means to the transom.

15. A resilient mounting for an outboard propulsion unit for a boat having a transom with an opening therethrough, a driveline to said propulsion unit extending through said opening and a housing surrounding at least the portion of said driveline within said transom opening, the propulsion unit being mounted to the housing and wherein resilient means is in pressing engagement with the housing and transom, characterized in that said housing has an external peripheral engaging surface, said resilient means has an internal engaging surface peripherally engaging said external surface, one of said surfaces being concavely arcuate with respect to the other while the other of said surfaces being convexly arcuate and cooperative with said one surface whereby the transom angle of inclination does not affect the engagement therebetween, and means pressingly secures said resilient means to said housing whereby no rotation exists therebetween and loads from said propulsion unit to said housing tending to rotate said housing relative to said transom deform said resilient means.

16. A resilient mounting as defined in claim 15 characterized in that said resilient mounting means is an annular member and has at least a portion thereof disposed radially intermediate said housing and said transom within the opening in the latter, and said pressingly securing means axially compresses and radially expands said resilient means into radial pressing engagement with said housing and said transom within the opening therein.

17. A resilient mounting means as defined in claim 16 wherein said pressingly securing means is a pair of compressing elements with one disposed forwardly and one disposed rearwardly of said resilient means and means axially secure said compressing elements to each other in a compressing relationship with said resilient means.

18. A device comprising in combination, a boat having a transom, said transom having an opening extending longitudinally through the same, a motor carried by said boat, drive means drivingly connected to said motor and extending through said transom opening, housing means extending through said transom opening and surrounding at least a portion of said drive means, a propulsion unit disposed rearwardly of said transom and drivingly connected to said drive means, intermediate means pivotally connected to said housing means and to said propulsion unit and pivotally connecting said propulsion unit to said housing means for pivotal steering movement about a vertically extending axis and for vertical pivoting movement about a horizontally extending axis, said intermediate means said housing means and said propulsion unit comprising three pivotal means, damping means connecting two of said pivotal means to dampen vertical pivotal movement of said propulsion unit and imposing its reaction load on said housing means, and resilient mounting means mounted in said transom opening and pressingly engaging said housing means and said transom and resiliently mounting said housing means to said transom and being the sole force transferring means therebetween so that the reaction loads in the fore and aft and circumferential directions imposed on said housing means by said damping means are resiliently imposed on said transom through said resilient mounting means.

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