Nov. 1, 1966 G. R. PIPES 3,282,240

MARINE DRIVE APPARATUS

Filed Sept. 14, 1964 3 Sheets-Sheet 1

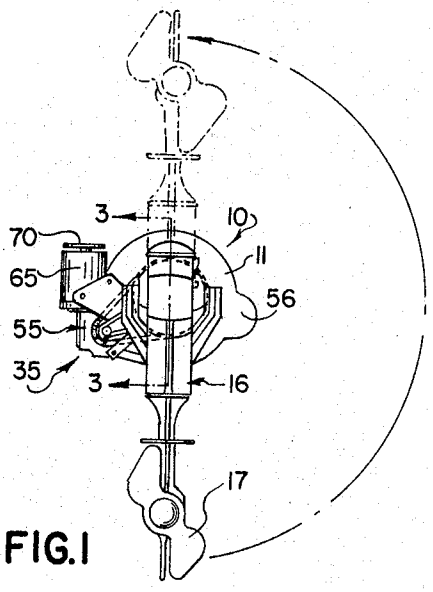


FIG.1

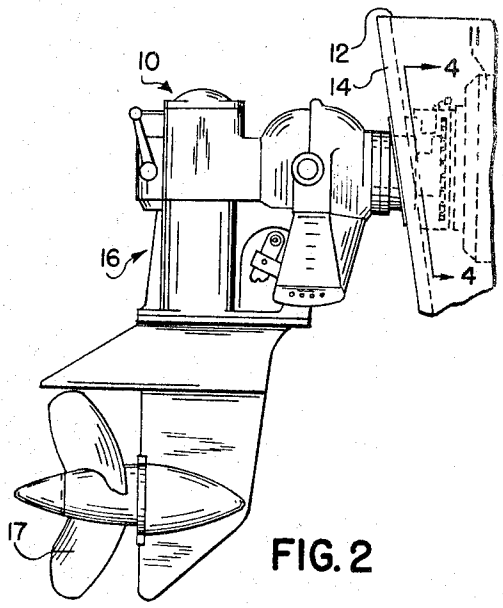


FIG. 2

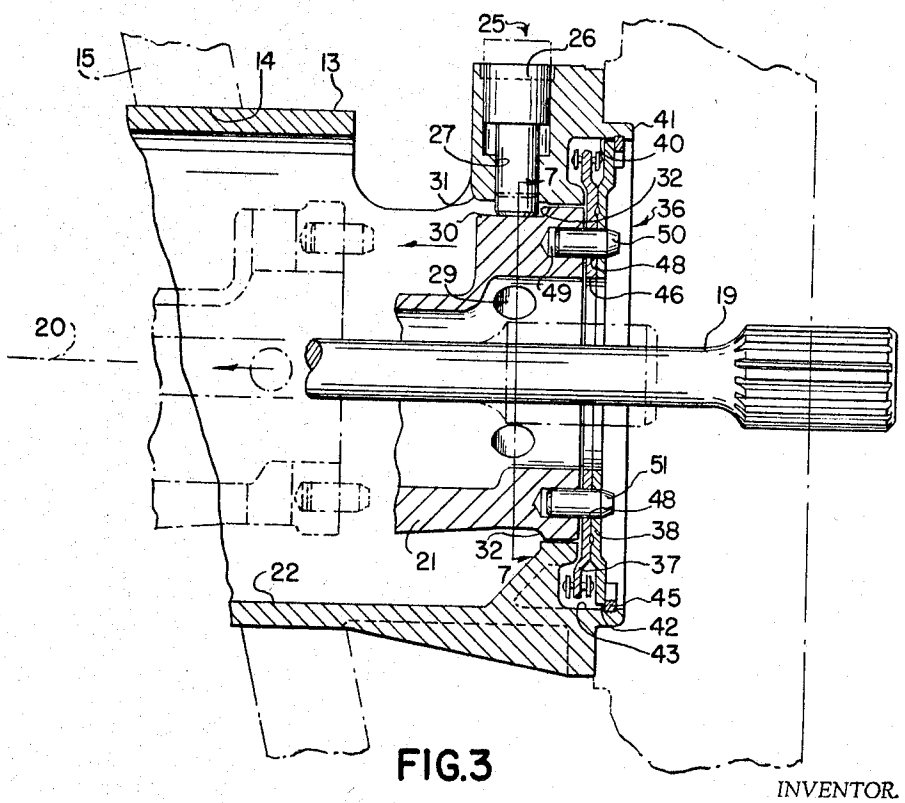


FIG.3

INVENTOR.
GEORGE R. PIPES
BY Williams, David, Hoffmann & Yount
ATTORNEYS

Nov. 1, 1966 G. R. PIPES 3,282,240

MARINE DRIVE APPARATUS

Filed Sept. 14, 1964 3 Sheets-Sheet 2

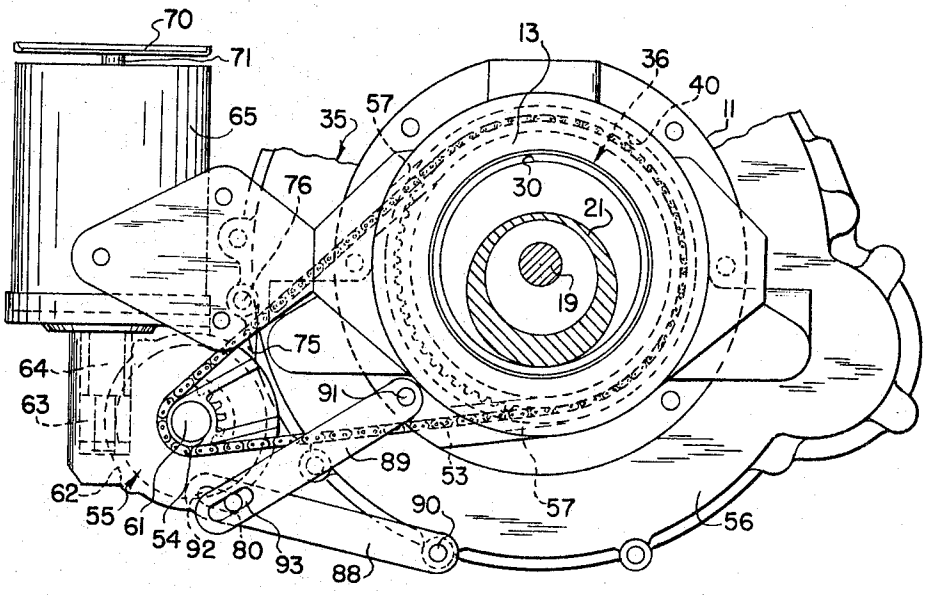


FIG. 4

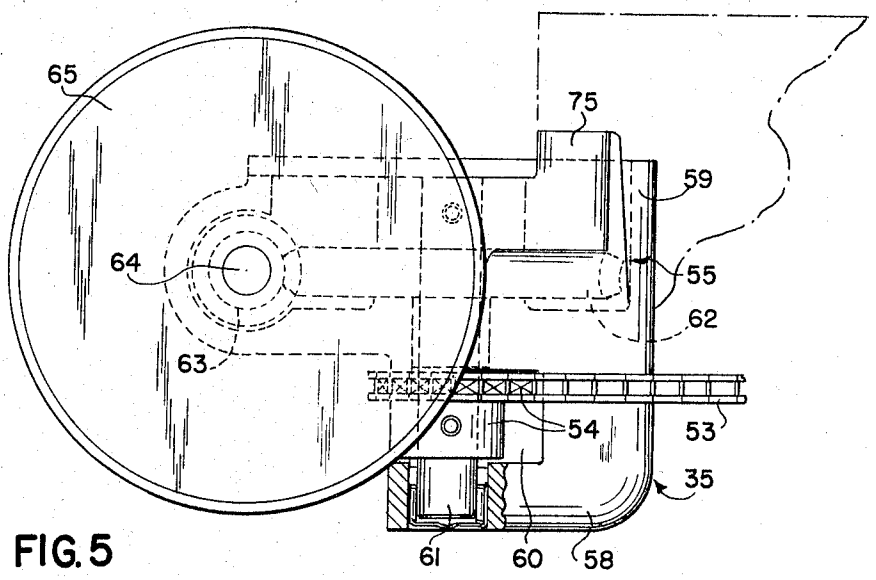


FIG. 5

INVENTOR.

GEORGE R. PIPES

BY Williams, David, Hoffmann & Yount

ATTORNEYS

Nov. 1, 1966 G. R. PIPES 3,282,240

MARINE DRIVE APPARATUS

Filed Sept. 14, 1964 3 Sheets-Sheet 3

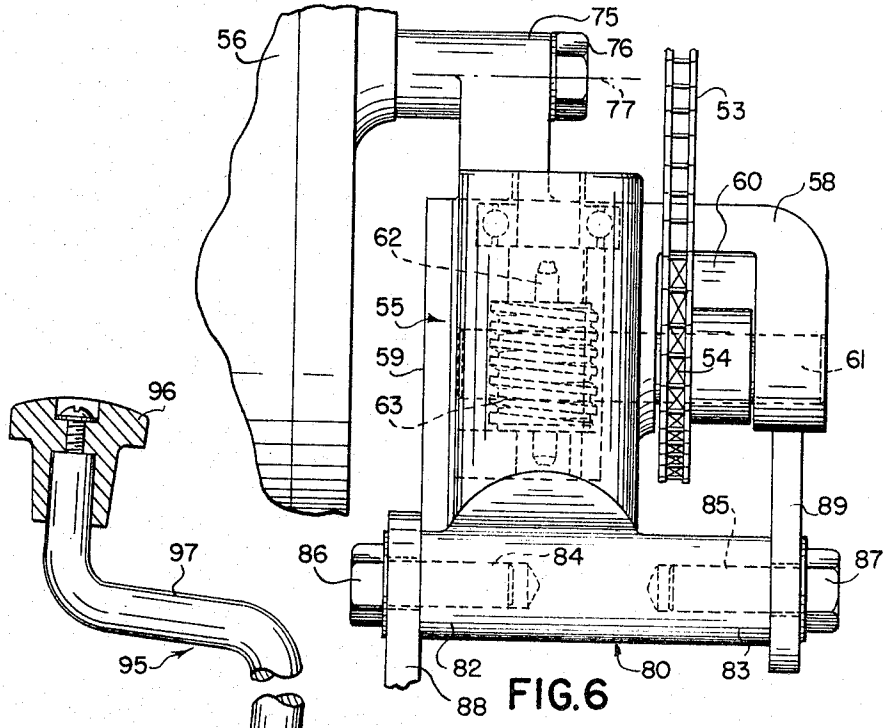


FIG.6

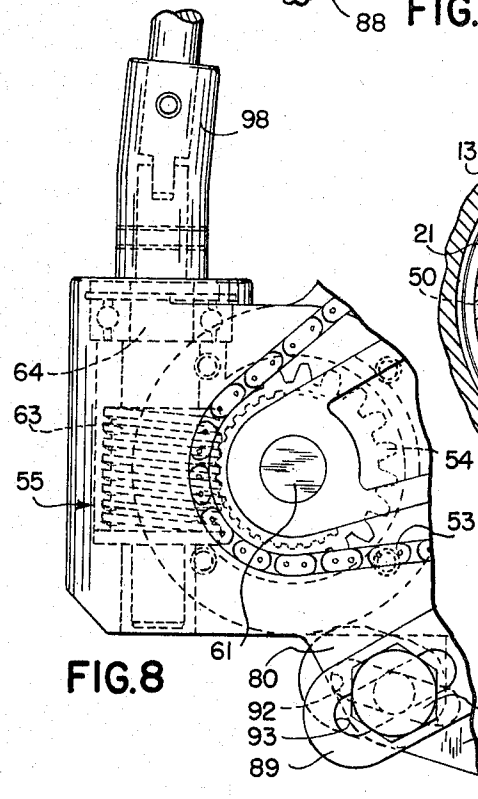


FIG.8

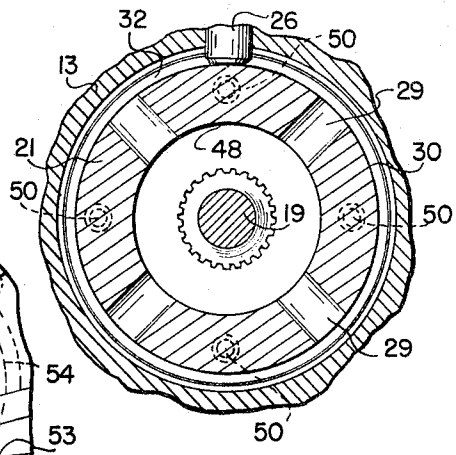


FIG.7

INVENTOR.
GEORGE R. PIPES
BY Williams, David, Hoffmann & Yount
ATTORNEYS

United States Patent Office

3,282,240

Patented Nov. 1, 1966

3,282,240

MARINE DRIVE APPARATUS

George R. Pipes, South Euclid, Ohio, assignor to Eaton Manufacturing Company, Cleveland, Ohio, a corporation of Ohio

Filed Sept. 14, 1964, Ser. No. 396,258
20 Claims. (Cl. 115—41)

The present invention relates to a marine drive apparatus, and more particularly to a marine drive apparatus including an outboard power leg, which carries a propeller for moving a boat through water, and which is rotatable to a position in which the propeller extends out of the water as well as being readily removable from the boat.

Known marine drive apparatuses include a drive mechanism for swiveling or rotating the outboard power leg to a position where the propeller is out of the water. However, these prior marine drive apparatuses have been of a complex and complicated nature and the removal of the outboard power leg from the boat necessitated extensive disassembly of the drive mechanism for swiveling the outboard power leg.

Accordingly, the principal object of the present invention is the provision of a new and improved marine drive apparatus having an outboard power leg which is rotated by a drive mechanism to move the outboard power leg between first and second angularly related positions, and wherein the outboard power leg may be readily disconnected from the drive mechanism and removed from the boat without disassembly of the drive mechanism for rotating the outboard power leg.

Another object of the present invention is the provision of a new and improved marine drive apparatus having an outboard power leg carrying a propeller for propelling a boat through water and a drive mechanism for swiveling or rotating the outboard power leg to a position where the propeller is out of the water, and wherein the drive mechanism comprises a driving member releasably connected to the outboard power leg and disconnectable or disengageable therefrom in response to movement of the outboard power leg from the boat.

Yet another object of the present invention is the provision of a new and improved marine drive apparatus, as defined in the next preceding paragraph, wherein the outboard power leg is releasably connected with the driving member by a plurality of pin members carried by the outboard power leg which are receivable in corresponding openings in the driving member upon mounting of the power leg in its operative position on the boat and which pin members rotate the outboard power leg on rotation of the driving member and which are disconnectable from the driving member in response to movement of the outboard power leg from its operative position.

A further object of the present invention is the provision of a new and improved marine drive apparatus having an outboard power leg which carries a propeller for propelling a boat through water and which is supported by the boat for rotation about an axis and for movement along the axis of rotation and a drive mechanism including a drive member releasably connected to the outboard power leg when in its operative position on the boat for rotating the outboard power leg about the axis between two angularly related positions, and disconnectable from the outboard power leg in response to movement of the latter along the axis.

A still further object of the present invention is the provision of a new, improved, simple marine drive apparatus comprising an outboard power leg carrying a propeller for propelling a boat through water and including a forward joint housing member which is supported within an engine mount adaptor sleeve mounted on the boat for rotation and axial movement relative thereto, latch means carried by the engine mount adaptor sleeve and cooperable with the forward joint housing member for holding the outboard power leg in its operative position on the boat and releasable to permit rotation and axial movement of the outboard power leg relative to the engine mount adaptor sleeve, and a chain and sprocket drive mechanism for rotating the outboard power leg relative to the engine mount adaptor sleeve and including a sprocket member connected to the outboard power leg when the latter is in its opertive position on the boat and another sprocket member carried by a housing which supports a drive arrangement for the sprocket member carried thereby and wherein a chain is trained around the sprocket members to drivingly interconnect them.

A further object of the present invention is the provision of a new and improved marine drive apparatus, as defined in the next preceding paragraph, wherein the sprocket member is rotatably supported within the engine mount adaptor sleeve.

Further objects and advantages of the present invention will be apparent to those skilled in the art to which it relates from the following detailed description of a preferred embodiment thereof made with reference to the accompanying drawing forming a part of this specification and in which;

FIG. 1 is an end elevational view of a marine drive apparatus embodying the present invention;

FIG. 2 is a side elevational view of the marine drive apparatus shown in FIG. 1, looking at FIG. 1 from the right;

FIG. 3 is an enlarged fragmentary sectional view of the marine drive apparatus of FIG. 1 taken approximately along the section line 3—3 of FIG. 1;

FIG. 4 is a fragmentary sectional view of the marine drive apparatus of FIG. 2 taken approximately along the section line 4—4 of FIG. 2;

FIG. 5 is a fragmentary top elevational view, on an enlarged scale, of the marine drive apparatus shown in FIG. 4;

FIG. 6 is a fragmentary side elevational view of the marine drive apparatus shown in FIG. 4 looking at the marine drive of FIG. 4 from the left;

FIG. 7 is a fragmentary sectional view of the marine drive apparatus of FIG. 3 taken approximately along section line 7—7 of FIG. 3; and

FIG. 8 is a fragmentary view of a modified form of marine drive apparatus embodying the present invention.

As representing the preferred embodiment of the present invention, a marine drive apparatus **10** is illustrated in the drawings. The marine drive apparatus **10** includes an engine **11** of any suitable or well-known construction mounted within a boat **12** and for providing the power for powering the boat through the water. The marine drive apparatus **10** also includes an engine mount adaptor sleeve **13** secured at one end to the engine **11**, and extending through an opening **14** in a transom **15** of the boat, and an outboard power leg **16** releasably secured within the engine mount adaptor sleeve **13** and carrying a propeller **17** for propelling the boat through water. The outboard power leg **16**, as is well known, includes a suitable drive mechanism including a shaft **19** releasably connected to the engine **11** for rotating the propeller **17**.

The outboard power leg **16** is supported on the boat for rotary or swiveling movement relative to the boat in order to position the outboard power leg properly for trailering, storage, changing of propellers while the boat is in the water, etc. The outboard power leg is also supported for removal from the boat by movement axially of

its axis of rotation. The outboard power leg 16 is supported for its rotary and axial movements by the engine mount adaptor sleeve 13 and specifically is supported thereby for rotation about the axis 20 of the engine mount adaptor sleeve 13 and for movement axially along the axis 20 relative to the engine mount adaptor sleeve. The outboard power leg 16 includes a forward joint housing member 21 which extends through an axial opening 22 in the engine mount adaptor sleeve 13 and cooperates therewith to support the outboard power leg. The forward joint housing member 21 is rotatably supported in the opening 22 in the adaptor sleeve and is axially movable relative thereto.

The outboard power leg 16 and the propeller 17 carried thereby are adapted to be swiveled or rotated about the axis 20 and locked in any one of four positions, namely, a first position in which the outboard power leg 16 and the propeller 17 extends vertically downwardly, a second position in which the outboard power leg and the propeller are located 90° in a counterclockwise direction from its first position, a third position, shown in the dot-dash lines in FIG. 1, in which the outboard power leg 16 and the propeller 17 carried thereby are in a vertical upwardly extending position spaced 180° from the first position, and a fourth position in which the outboard power leg 16 and the propeller 17 are positioned 180° from the second position.

The engine mount adaptor sleeve 13 carries a suitable locking or latch means 25 for releasably securing the forward joint housing member 21 of the outboard power leg 16 within the engine mount adaptor sleeve 13 in any of the above noted positions. The locking means 25 comprises a pin or locking member 26 positioned in an opening 27 in the engine mount adaptor sleeve 13. The forward joint housing 21 of the outboard power leg 16 is provided with a plurality of circumferentially spaced openings 29; best seen in FIG. 7, preferably four such openings spaced 90° apart, located adjacent the forward end thereof and into which the pin 26 may extend for locking the forward joint housing 21 in position and preventing the housing 21 from rotating or moving axially relative to the adaptor sleeve 13. In each of the four above mentioned positions to which the outboard power leg 16 may be rotated, one of the openings 29 will be aligned with the pin 26 so that the outboard power leg 16 and the propeller 17 may be locked in that position.

The pin member 26 may be removed from the opening 29 in the forward joint housing 21 in which it is located by lifting it upwardly to a position, indicated by the solid lines in FIG. 3, in which rotation of the forward joint housing 21 and the outboard power leg 16 about the axis 20 relative to the adaptor sleeve 13 is permitted. In this position the pin member 26 rides on the outer surface 30 of the forward joint housing 21, which surface is radially spaced from the inner surface 31 of the engine mount adaptor sleeve 13, as the outboard power leg 16 and the forward joint housing 21 thereof are rotated relative to the annular sleeve 13 and falls into the next adjacent opening 29 and locks the forward joint housing 21 against further rotation. When the pin member 26 is in the solid line position shown in FIG. 3, axial movement of the housing 21 in a rearward direction or to the left, as viewed in FIG. 3, relative to the engine mount adaptor sleeve 13 is prevented by an annular shoulder 32 formed on the forward portion of the forward joint housing 21 which engages the pin 26. The pin 26 is also removable to a position indicated by the dot-dash lines in FIG. 3 wherein the lower end of the pin member is spaced upwardly from the shoulder 32 of the forward joint housing 21 to permit the forward joint housing 21 to be moved axially relative to the adaptor sleeve 13 and toward the transom 15 of the boat.

According to the present invention, a suitable drive mechanism, indicated generally by reference character 35, is provided for rotating the outboard power leg 16 relative to the engine mount adaptor sleeve 13 when the pin member 26 is in the full line position shown in FIG. 3. The drive mechanism 35 includes a suitable driving member 36 which is releasably connected to the forward joint housing 21 in order to effect rotary movement or rotation of the forward joint housing 21 and is readily disconnectable therefrom to permit removal of the forward joint housing 21 from the driving member 36, as will be apparent from the description hereinbelow.

The driving member 36, in the illustrated embodiment, includes a sprocket wheel 37 having an annular plate or member 38 secured thereto in any suitable manner, preferably by being welded to the sprocket wheel 37. The driving member 36 is disposed within an annular recess or counterbore 40 formed in the forward end 41 of the engine mount adaptor sleeve 13, with the periphery 42 of the plate 38 thereof being spaced from the annular inner wall 43 of the recess or counterbore 40 to provide for smooth rotation thereof. A suitable snap ring 45 is provided for holding the driving member 36 within the recess 40. The driving member 36 is provided with a central opening 46 therethrough through which the shaft 19 extends, and the sprocket wheel 37 and the plate 38 are provided with a plurality of annularly spaced aligned openings 48 therearound.

The forward joint housing 21 at its forward end 41 is provided with a plurality of annularly spaced axially extending openings 49 which receive pin members 50. The pin members 50 are press fitted or otherwise fixedly secured within the openings 49 and project forwardly of the forward end 41. The spacing and the number of the pin members 50 correspond to the spacing and the number of openings 48 contained within the driving member 36. When the outboard power leg 16 is moved axially relative to the engine mount adaptor sleeve 13, to the right, as viewed in FIG. 3, and to its operative position on the boat, the pin members 50 carried thereby are received within the openings 48 and cooperate therewith to effect a driving connection between the forward joint housing 21 of the outboard power leg 16 and the driving member 36. The pin members 50 are readily removable or disconnectable from the openings 48 in the driving member 36 in response to axial movement of the forward joint housing 21 relative to the engine mount adaptor sleeve 13 away from the driving member 36 and to the left, as viewed in FIG. 3. Thus, the pin member 50 and the portions of the drive member 36 defining the openings 48 therein constitute cooperating means for effecting a driving connection in response to movement of the outboard power leg 16 to its operative position and are disconnectable to in response to movement from its operative position, as shown by the phantom lines in FIG. 3.

The pin members 50 are preferably tapered at their forward end portions 51 to facilitate entry into the openings 48 of the driving member 36 and coaxially align the driving member 36 and the forward joint housing member 21 so that the outer periphery 42 of the plate member 38 will be spaced from the inner wall 43 to provide for smooth rotation of the driving member 36. It will be apparent from the above description, that upon rotation of the driving member 36, the forward joint housing 21 and the outboard power leg 16 will be rotated therewith, presuming, of course, that the pin member 26 has been moved from its locking position in one of the openings 29.

The drive mechanism 35 further includes a drive arrangement for rotating the driving member 36 comprising a chain 53 trained around the sprocket wheel 37 and around a sprocket wheel 54 rotatably supported in a housing 55 located adjacent to and adjustably mounted on one side of a housing 56 containing portions of the engine 11. The engine mount adaptor sleeve 13 is provided with a pair of tangent openings 57 adjacent its forward end through which the chain 53 extends. It can be seen therefore that upon movement of the chain 53,

the sprocket wheel 37 will be rotated to rotate the outboard power leg 16.

The housing 55 which supports the sprocket wheel 54 has a bridge portion 58 extending from the main portion 59 of the housing 35 and defining with the main portion 59 of the housing 55 a generally U-shaped space 60 in which the sprocket wheel 54 is disposed. The sprocket wheel 54 is fixed on a shaft 61 which is rotatably supported at one end by suitable bearings in the main portion 59 of the housing 55 and rotatably supported at the other end by suitable bearings in the bridge portion 58. Also fixed to the shaft 61 in the housing 55 is a worm wheel 62 which is in constant mesh with a worm gear 63 rotatably supported in the housing 55 and fixed to an output shaft 64 of a motor 65. The shaft 64 extends substantially vertically, as shown in the drawings. The motor 65 may be of any suitable construction, and preferably is an electric motor. The motor 65 is manually actuated by any suitable control arrangement positioned so as to be convenient to the operator of the boat.

From the above description, it should be readily apparent that upon energization of the motor 65 the sprocket wheel 54 will be rotated causing rotation of the sprocket wheel 37 of the driving member 36 and rotation of the outboard power leg 16 relative to the engine adaptor sleeve 13 when the outboard power leg 16 is connected with the driving member 36.

When it is desired to rotate the outboard power leg 16 to a different position, it is difficult to stop the motor 65 at the precise point where the pin 26 is aligned with an opening 29 of the forward joint housing 21 and thus, the motor 65 after the pin 26 has dropped into an opening 29 continues to apply a torque force to the driving member 36 tending to move the forward joint housing member 21 into binding engagement with the pin member 26. Because of this binding engagement, it is difficult to remove the pin 26 from the opening 29 at a subsequent time in order to provide for further rotation or swiveling of the outboard power leg 16. In order to reduce this binding force, a suitable handwheel 70 connected to a projecting shaft portion 71 of the output shaft 64 of the motor 65 is provided. The handwheel 70 upon rotation effects rotation of the output shaft 64. It is readily apparent that upon a slight rotation of the handwheel 70, the driving member 36 will be likewise rotated, to relieve the binding force on the pin member 26 exerted by the forward joint housing 21.

For the purposes of enabling the chain 53 to be tensioned, the housing 55 is adjustably mounted to the housing 56 of the engine 11. To this end the housing 55 has an arm 75 having one end rigidly secured to the housing 55 at its upper portion, as viewed in the drawings, and the other end pivotally connected to the housing 56 by a pivot pin 76 for pivotable movement about the axis 77 of the pin 76. The housing 55 at its lower side has a projecting portion 80 having opposite ends 82 and 83 provided with threaded openings 84 and 85, in which suitable screw or bolt members 86 and 87, respectively, are threadably secured. The housing 55 is adjustably positioned with respect to the housing 56 by connecting members 88 and 89 having one end pivotally connected to the housing 58 by pivot pins 90 and 91 and the other end provided with slots 92 and 93 through which the bolts 86 and 87 extend, respectively. By loosening the bolts 86 and 87, the housing 55 may be pivoted about the axis 77 either toward or away from the driving member 36 in order to effect a change in the tension in the chain 53. The housing 55 is held in the position to which it is pivoted by tightening the bolts 86 and 87.

FIG. 8 shows a modified embodiment of the present invention which is generally similar to the embodiment shown in FIGS. 1–7 except that a crank mechanism 95 is substituted for the motor means 65. In other respects the modified embodiment is the same as the embodiment illustrated in FIGS. 1–7 and the same reference characters have been applied to identical or substantially identical parts. The crank mechanism 95 is utilized to manually actuate the driving member 36 and comprises a handgrip 96 connected at one end to a suitable crank member 97 which in turn is connected at its other end through a suitable universal type coupling 98 to the shaft 64 on which the worm gear 63 is fixed. It should be apparent that upon rotation of the crank member 97, the worm gear 63 is rotated. Rotation of the worm gear 63 in turn effects rotation of the driving member 36 and the outboard power leg 16, in a manner hereinbefore described in connection with the modification shown in FIGS. 1–7.

Although in the preferred embodiment of the invention, the outboard power leg 16 may be rotated and locked in any one of the four above-named positions, it will, of course, be understood that any suitable spacing or number of openings 29 may be provided so that the outboard power leg can be swiveled to any desired position and locked in place. It should further be understood that the preferred embodiments of the present invention have been described hereinabove in considerable detail and that certain modifications, changes, and adaptations may be made therein by those skilled in the art, and it is hereby intended to cover all such changes, modifications, and adaptations made therein coming within the scope of the appended claims.

Having described my invention, I claim:

1. In a marine drive for a boat, an outboard power leg carrying a propeller for moving the boat through water, means supporting the outboard power leg for rotation relative to the boat about an axis extending longitudinally thereof and for movement axially for removal from the boat, latch means for holding the outboard power leg in operative position on the boat and releasable to permit rotation of the outboard power leg and axial movement of the outboard power leg for removal from the boat, and a drive mechanism including a rotatable drive member releasably connected to said outboard power leg when in its operative position for rotating said outboard power leg between first and second angularly related positions about said longitudinal axis, said outboard power leg and said drive member having cooperable means for effecting a driving connection therebetween and being disconnectable in response to axial movement of said outboard power leg from its operative position.

2. In a marine drive for a boat, an outboard power leg carrying a propeller for moving the boat through water, means supporting the outboard power leg for rotation relative to the boat about an axis extending longitudinally thereof and for linear movement axially from the boat, latch means for holding the outboard power leg in operative position on the boat and releasable to permit rotation of the outboard power leg and axial movement of the outboard power leg for removal from the boat, and a drive mechanism including a rotatable drive member releasably connected to said outboard power leg when in its operative position for rotating said outboard power leg between first and second angularly related positions about said longitudinal axis, said outboard power leg and said drive member having cooperable interengaging portions for effecting a driving connection therebetween in response to linear axial movement of said outboard power leg to its operative position.

3. In a marine drive for a boat, an outboard power leg carrying a propeller for moving the boat through water, means supporting the outboard power leg for rotation relative to the boat and for linear movement axially from the boat, latch means for holding the outboard power leg in operative position on the boat and releasable to permit rotation of the outboard power leg and axial movement of the outboard power leg for removal from the boat, and a drive mechanism including a drive member releasably connected to said outboard power leg when in its operative position for rotating said outboard

power leg between first and second angularly related positions, said outboard power leg and said drive member having cooperable interengaging portions for effecting a driving connection therebetween in response to linear axial movement of said outboard power leg to its operative position and being disconnectable in response to linear axial movement of said outboard power leg from its operative position.

4. In a marine drive for a boat, an outboard power leg carrying a propeller for driving a boat through water and having a forward joint housing member, means for supporting said forward joint housing member for rotation about its axis relative to said boat and for movement axially for removal from the boat, latch means for holding the outboard power leg in an operative position on said boat and being releasable to permit rotation of the outboard power leg and axial movement of the outboard power leg for removal from the boat, a drive mechanism for rotating said forward joint housing member and the outboard power leg about said axis between a position in which the propeller is in the water and a position in which the propeller extends above the water, said drive mechanism comprising a drive member and means for selectively rotating said drive member, one of said members having a plurality of openings therearound for receiving corresponding aligned pin members carried by the other member to effect a driving connection therebetween in response to axial movement of the outboard power leg to its operative position and being disconnectable in response to axial movement of said outboard power leg from its operative position.

5. In a marine drive for a boat, an outboard power leg carrying a propeller for driving a boat through water and having a forward joint housing member, means for supporting said forward joint housing member for rotation about its axis relative to said boat and for movement axially from the boat, latch means for holding the outboard power leg in an operative position on said boat and being releasable to permit rotation and axial movement of the outboard power leg, a drive mechanism for rotating said forward joint housing member and the outboard power leg about said axis between a position in which the propeller is in the water and a position in which the propeller extends above the water, said drive mechanism comprising a drive member and means for selectively rotating said drive member, said drive member having a plurality of openings therearound for receiving corresponding aligned pin members carried by the forward joint housing member to effect a driving connection therebetween in response to axial movement of the outboard power leg to its operative position and being disconnectable in response to axial movement of said outboard power leg from its operative position.

6. In a marine drive for a boat, as defined in claim 5, wherein said pin members have tapered end portions to facilitate entry into said openings of said driving member.

7. In a marine drive for a boat, as defined in claim 5, wherein said forward joint housing member is positioned within an engine mount adaptor sleeve secured to the boat and wherein said driving member is rotatably supported within said engine mount adaptor sleeve adjacent the forward joint housing member.

8. In a marine drive for a boat, as defined in claim 7, wherein said driving member comprises a sprocket wheel and an annular plate member rigidly connected to said sprocket wheel and rotatably supported within the engine mount adaptor sleeve.

9. In a marine drive, as defined in claim 8, wherein said means for rotating said driving member comprises a chain extending around said sprocket wheel and another sprocket wheel operatively connected with a power means for rotating said another sprocket wheel.

10. In a marine drive, as defined in claim 9, wherein said last named sprocket wheel is also operatively connected with a handwheel for rotating said another sprocket wheel.

11. In a marine drive as defined in claim 8, wherein said means for rotating said driving member comprises a chain extending around said sprocket wheel and another sprocket wheel operatively connected with a manually operable crank mechanism for rotating said last named sprocket wheel.

12. In a marine drive, as defined in claim 9, wherein said marine drive includes an engine housing for a marine engine and wherein said last named sprocket is rotatably supported within a housing adjustably connected to said engine housing for movement toward and away from said driving member to effect tensioning of the chain.

13. In a marine drive, as defined in claim 12, wherein said housing for rotatably supporting said last named sprocket has a bridge portion and a main portion, and wherein said last named sprocket is rotatably supported between said main portion and said bridge portion.

14. In a marine drive for a boat, an outboard power leg releasably secured in an operative position on the boat and carrying a propeller for moving the boat through water, a drive mechanism including a drive member releasably connected to said outboard power leg for rotating said outboard power leg between first and second angularly related positions about an axis extending longitudinally of the boat, said outboard power leg and said driving member having cooperable means for effecting a driving connection therebetween when said outboard power leg is in its operative position and being disconnectable in response to movement of said outboard power leg from said boat.

15. In a marine drive for a boat, an outboard power leg releasably secured in an operative position on the boat and carrying a propeller for moving the boat through water, a drive mechanism including a rotatable drive member releasably connected to said outboard power leg for rotating said outboard power leg between first and second angularly related positions about an axis extending longitudinally of the boat, said outboard power leg and said driving member having cooperable interengaging portions for effecting a driving connection therebetween in response to movement of said outboard power leg to its operative position and being disconnectable in response to movement of said outboard power leg from its operative position.

16. A drive mechanism for rotating an outboard power leg carrying a propeller of a marine drive for a boat between first and second angularly related positions and which is supported for removal from the boat comprising a rotatable drive member and means for rotating said drive member, said drive member having portions which are cooperably interengageable with portions carried by said outboard power leg to effect a driving connection therebetween, said cooperably interengageable portions being disconnectable in response to movement of said outboard power leg from said boat.

17. A drive mechanism for rotating an outboard power leg carrying a propeller of a marine drive for a boat between first and second angularly related positions and which is supported for removal from the boat comprising a rotatable drive member and means for rotating said drive member, said drive member having means cooperably interengageable with means carried by said outboard power leg to effect a driving connection therebetween in response to linear movement of said outboard power leg to its operative position on the boat and being disconnectable in response to linear movement of said outboard power leg from the boat.

18. In a marine drive for a boat, an outboard power leg carrying a propeller for driving a boat through water and having a forward joint housing member, means for supporting said forward joint housing member for rotation about its axis relative to said boat and for movement axially from the boat, latch means for holding the outboard power leg in an operative position on said boat and being releasable to permit rotation and axial move-

ment of the outboard power leg, a drive mechanism for rotating said forward joint housing member and the outboard power leg about said axis between angularly related positions, said drive mechanism comprising a drive member drivingly connected with said forward joint housing member and including a sprocket wheel and an annular plate member rigidly secured to said sprocket wheel and rotatably supported within the engine mount adaptor sleeve adjacent the forward joint housing member, and means for rotating said sprocket wheel.

19. In a marine drive for a boat, as defined in claim **18**, wherein said means for rotating said sprocket wheel comprises a chain extending around said sprocket wheel and around another sprocket wheel laterally spaced from the former sprocket wheel and a power means for driving said another sprocket wheel.

20. In a marine drive for a boat, as defined in claim **19**, including means for supporting said another sprocket wheel for rotation and for movement toward and away from said drive member to effect tensioning of said chain.

References Cited by the Examiner

UNITED STATES PATENTS

1,745,235	1/1930	Svendsen et al.	115—41
2,536,894	1/1951	Wanzer	115—35
3,091,211	5/1963	Hansen	115—41
3,150,631	9/1964	Tillman	115—41 X

MILTON BUCHLER, *Primary Examiner.*

T. MAJOR, *Assistant Examiner.*