April 21, 1931. V. J. SHACK 1,801,644

GREASING DEVICE FOR OUTBOARD MOTORS

Filed Sept. 13, 1929

FIG. 1

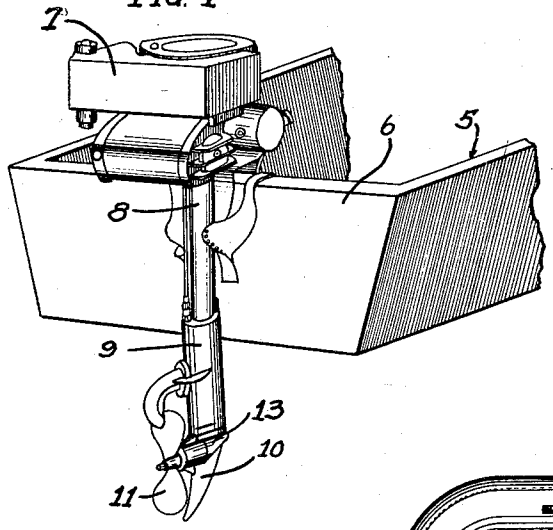


FIG. 2

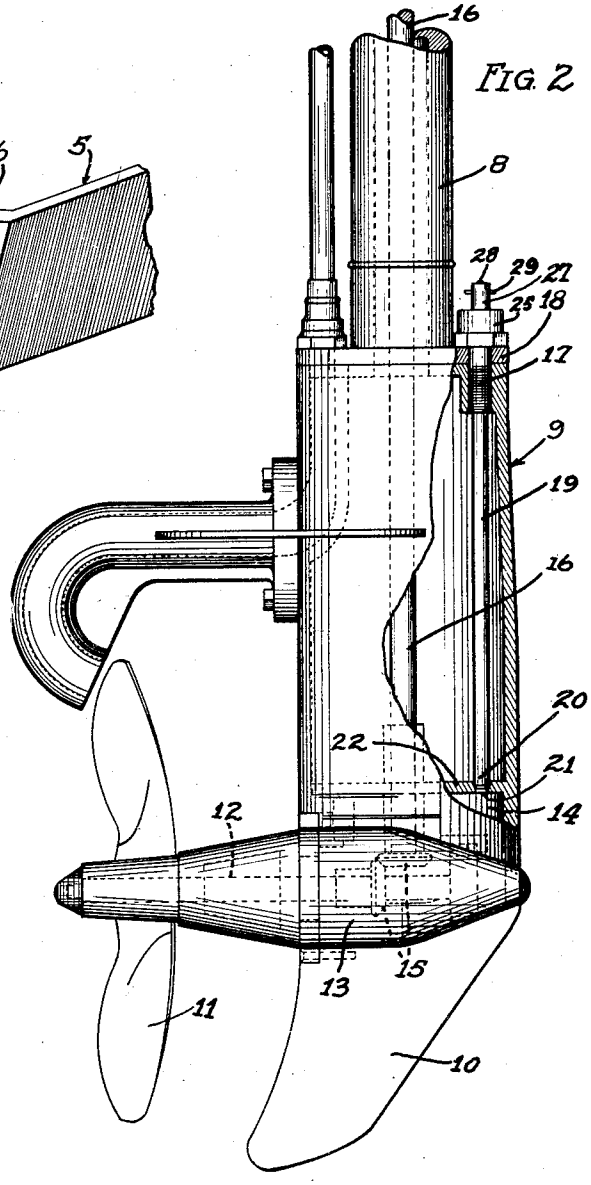
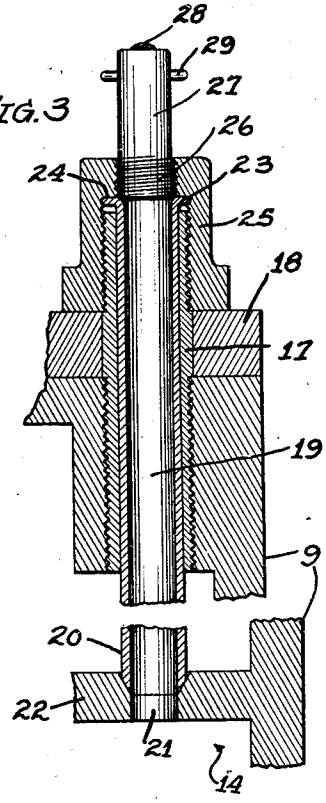


FIG. 3



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UNITED STATES PATENT OFFICE

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GREASING DEVICE FOR OUTBOARD MOTORS

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This invention relates to outboard motors, and more particularly to the means for lubricating the propeller gears and shafts of such devices. Devices of this character usually comprise a unitary structure including the driving motor which is carried by the upper housing, which latter is detachably secured to the stern of the boat, the driving shaft being extended downwardly through a tubular connection between the upper housing and lower housing, in which latter the propeller shaft is mounted; this lower housing also having a fin or blade at its lower end which, in conjunction with the propeller wheel, serves as a rudder. In use, this lower housing is almost completely submerged and, in the ordinary structures, it is practically impossible, or at least very inconvenient, to apply lubricant to the propeller gears and adjacent bearings for the drive shaft and propeller shaft without removing the motor from the boat. In some structures provision has been made for swinging the lower housing out of the water for the purpose of replenishing the lubricant for said gears and bearings, and even in these structures the operation of applying the lubricant is difficult to accomplish.

In practice, it has been found that it is necessary to very frequently replenish the lubricant for the lower bearings and gears. Under good conditions the lubricant is applied at least every fifty to one hundred miles traveled, and in cases where the motor is in constant use in exceptionally sandy water, such as is encountered in some rivers, it is best to pack the gears and bearings with grease more often.

The present invention has for its principal object to facilitate the application of the lubricant without removing the lower housing of the motor from the water, and to attain certain other advantages as will more fully hereinafter appear.

The invention consists in the novel construction and in the combinations and arrangements of parts hereinafter described and pointed out with particularity in the appended claims.

In the accompanying drawings, forming part of this specification, and illustrating a practical adaptation of the invention,

Fig. 1 is a fragmentary perspective view of the stern portion of a boat with an outboard motor applied thereto;

Fig. 2 is a view, on an enlarged scale, showing the lower housing of the motor, partly in side elevation and partly in vertical section, to illustrate the arrangement of the lubricating device; and

Fig. 3 is a fragmentary view, on a further enlarged scale, to illustrate the details of the lubricating device.

Referring now to the drawings, the numeral 5 designates an ordinary boat hull on the stern portion 6 on which is mounted an outboard motor comprising the upper housing 7. In this upper housing 7 is located the driving motor, and extending downwardly therefrom is a tubular extension 8, at the lower end of which is detachably secured the lower housing 9. At the extreme lower end of the housing 9 is a fin or blade 10 which functions as a rudder in connection with the propeller wheel 11. The propeller wheel is mounted on a shaft 12 having bearings in an enlargement 13 of the lower housing, and in the region of said enlargement 13 said lower housing is provided with a chamber 14 for the reception of cup or other soft grease which is used as a lubricant for the propeller gears 15 and bearings for the propeller shaft 12 and driving shaft 16, which are located in said chamber 14, or communicable therewith.

Ordinarily the tubular extension 8 and lower housing 9 are fastened together by a stud bolt 17 which is secured in the upper end portion of said housing 9 and projects through an opening provided therefor in a flange 18 at the lower end of said tubular extension 8, said stud bolt having a nut thereon for clamping said flange 18 to the end of the housing 9. For the purpose of the present invention, this stud bolt is provided with an axial bore therethrough and a tubular member 19 is inserted through said bore and its inner end portion 20 is seated in a counterbored opening 21 in the partition wall 22, which divides the compartment 14 from the remainder of the lower housing 9. Prefer-

ably, the inner end 20 of said tube 19 is beveled corresponding to the beveled seat afforded by the counterbore of the opening 21, and the outer end portion of said tubular member 19 is provided with a flange 23, engaged by an internal shoulder 24 on a nut 25, which latter is threaded onto the outer end portion of the stud bolt 17 and clamps the flange 18 of the tubular extension 8 to the housing 9. The nut 25 is provided with a screw-threaded axial bore 26 in its outer end portion, in which is inserted the correspondingly screw-threaded end portion of an ordinary or other grease gun fitting 27. As shown, the fitting 27 is provided with the usual ball valve 28 and the transverse projections 29, to which the usual bayonet slotted coupling member of the grease gun (not shown) is obviously attached when it is desired to apply the lubricant.

Obviously, as the lower housing 9 is only submerged to a depth where the water line is below the flange 18 of the tubular extension 8, it is an easy matter to reach the fitting 27 and attach the grease gun thereto without having to remove the submerged part of the motor from the water. This is of great convenience on long trips and cruising, as the lubricant may be readily applied at will and as often as necessary without docking or beaching the boat.

The invention is not limited to the specific structural details illustrated in the accompanying drawings, as considerable modification is possible without departing from its spirit and scope as defined by the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. The herein described lubricating means for outboard motors, the same comprising a water-tight housing, a submerged portion of which supports the propeller and contains the driving gears therefor, a filler member located on said housing above the water line and having provision for a releasable leak-tight connection with a pressure grease applicator, and a tubular connection between said filler member and mechanism located in the submerged portion of said housing.

2. In an outboard motor for watercraft, the combination with the submerged propeller actuating mechanism requiring lubrication, of a filler member located normally above the water line and within reaching distance from a position on the craft, and a tubular connection between said filler member and said submerged mechanism.

3. In an outboard motor for watercraft, in combination with the lower water-tight housing carrying the propeller and having a lubricant containing compartment in which the propeller gears are located and the respective bearings for the propeller shaft and driving shaft are communicable, of a filler member mounted on said casing above the water line within convenient reach from a position on the craft and having provision for the releasable leak-tight attachment thereto of a grease gun or the like, and a tubular water-tight connection between said filler member and said lubricant containing compartment.

4. In an outboard motor of the character described, a tubular depending extension from the upper motor housing, said extension having a flanged lower end portion, a detachable lower housing depending from said tubular extension, said lower housing carrying the propeller and having a lubricant containing compartment in which the propeller gears are located and in which the respective bearings for the propeller shaft and driving shaft are communicable, an axially bored stud at the upper end of said lower housing projected through an opening provided therefor in the flange of said tubular extension, a tubular connecting member having one end portion seated in a counterbored aperture provided therefor in the upper wall of said lubricant containing compartment of the lower housing, and its opposite end portion being extended through said axially bored stud and being flanged to overhang the upper end of said stud, a retaining nut applied to said stud whereby to clamp the flanged end portion of said tubular extension to the upper end of said lower housing, and a grease gun fitting secured in a threaded outer portion provided therefor in said nut, said fitting being in cooperative communication with said tubular connecting member.

In testimony whereof I have signed my name to this specification.

VINCENT J. SHACK.