

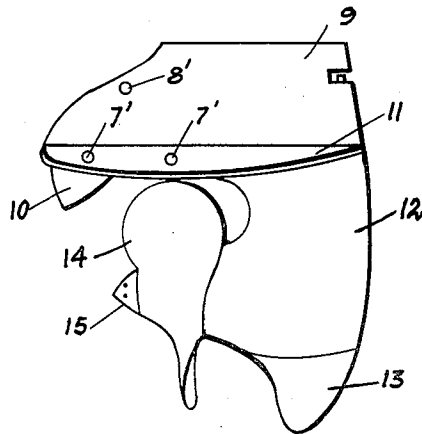
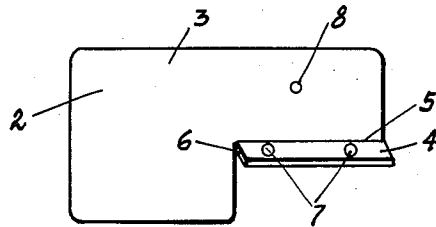
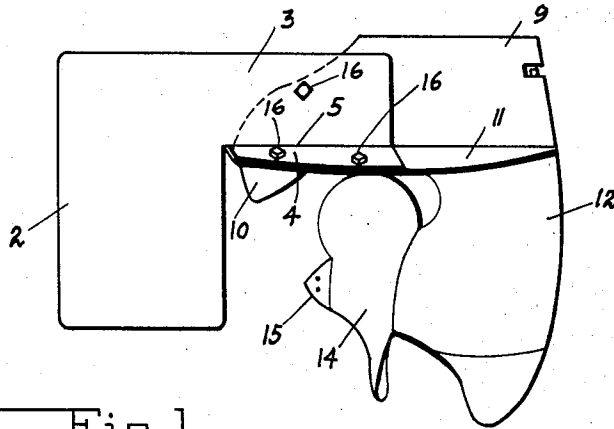
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RUDDER ATTACHMENT FOR OUTBOARD MOTORS

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RUDDER ATTACHMENT FOR OUTBOARD MOTORS

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This invention is for a rudder attachment for outboard boat motors, and has for its principal object to provide a removable attachment that can be applied to various makes of outboard motors and enable the boat to be steered when the engine is dead, or at slow speed, or when the driving gear is in neutral position.

Outboard motors are pivotally hung from a bracket attached to the stern of the boat to turn about a vertical axis, and steering is accomplished by changing the angle of the propeller with reference to the fore and aft axis of the boat. Very little rudder surface is provided in such motors, most of it being provided in a skeg forward of the propeller and forming in part the housing for the bevel gears that transmit rotary motion from a vertical motor-driven shaft to the short horizontal propeller shaft.

With this arrangement, steering is adequate when the propeller is turning at normal speeds, but when the propeller is stopped or slowed down to come into a landing, the boat loses steerage-way, especially in a cross wind. Also, for trolling, the rudder is not adequate at low trolling speeds.

According to the present invention there is provided a simple attachment by which an increased rudder surface is provided which does not interfere with the motor or its adaptability to small craft and shallow water.

My invention may be more fully understood by reference to the accompanying drawings, in which:

Fig. 1 is a side elevation of the lower part of a motor assembly to which the rudder is applied;

Fig. 2 is a plan view of the rudder attachment per se; and

Fig. 3 shows the lower part of the motor assembly prepared for the rudder.

Referring to the drawings, and particularly to Fig. 2, the rudder attachment comprises an integral piece of metal sheet or plate, preferably aluminum, of a thickness and quality sufficient to have the required rigidity. It has a rectangular main area 2 with a forward web or extension 3 at the top, which is about a third to a half of the depth of the main area 2. At the lower edge of the extension is an integral flap 4 connected to the extension 3 along a line 5, this bend line extending horizontally from a vertical slit 6 that separates the after end of the flap from the body. The flap is bent outwardly from the plane of main area and has one or more holes 7 therethrough, preferably two of these holes being provided. There is also a single hole 8 through the extension 3. This is located above the bend line 5 and intermediate the ends of the flap.

Outboard motors are all of substantially the same general construction, having a lower end assembly constituting a combined rudder, propeller shaft support and gear housing, underwater exhaust, and cooling water in-

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take. In the drawings this part only of a motor is shown, there being an upper part 9 that is usually boat-shaped in section, rounded at the front and narrowing and flattening toward the rear. Customarily this part fits against a piece of matching shape (not shown) at the bottom of the drive shaft housing. It has a downturned fin 10 at the rear, and it forms a part of the rudder area of the engine. Along the side face of the part 10 there is a laterally-extending flange 11 that may have a slight slope outwardly and downwardly. Below this flange the assembly has a downwardly-extending projection 12 terminating in a thin skeg 13 and above the skeg it provides a housing for the propeller shaft (not shown), its bearing and bevel gears. The propeller itself, designated 14, has its hub bearing against the rear face of this housing, and 15 is the usual propeller nut. The propeller is thus located forward of the fin 10 and rearwardly of the skeg. The assembly is poorly shaped to produce a good rudder effect since the propeller itself is turned to steer the boat. Practically none of the rudder is in the slip stream of the propeller.

According to the present invention, the rudder attachment is placed against the side face of the upper part 9 of the lower end assembly with the flap 4 over the flange 11, and it is bent to conform to the slope of the flange. Marks are made where the holes 7 and 8 of the attachment are located, and through holes 7' and 8' are drilled through the flange 11 and part 9, respectively, and after the holes have been made, the attachment is put back in place and secured with bolts and nuts 16.

The drilling of the holes is very simply accomplished, and they are located where they can not injure or interfere with functioning parts of the assembly. The main area of the attachment is behind the rudder in the slip stream so that it is effective at low propeller speeds and it is at a level where most of its area remains submerged in choppy water. It is above the skeg so that it can not drag bottom. It is thin, being of the order of one-fourth inch in thickness, producing little added drag, and it can be readily removed when the engine is used for racing. Being against the face of the part 9, it is operatively in the plane of the center line, although actually being to one side of the center.

Although of simple construction, it can be applied to all important models of outboard engines now popular.

I claim as my invention:

1. A rudder attachment for outboard motors comprising an integral metal plate having a main area and a forwardly-extending upper web portion, and a flap portion along the bottom of the web intermediate the top and bottom of the main area and separated at its rear end from the main area, the flap being turned outwardly from the plane of the main area and web, the flap portion and the web portion each having a bolt hole there-through.

2. A rudder attachment as defined in claim 1 in which the top of the main area and the upper web portion are in a common vertical plane.

3. For use on the lower end assembly of an outboard motor, which lower end assembly has an upper portion overhanging a propeller and a downwardly-extending part terminating in a skeg with a propeller carried by the downwardly-extending part, there being a laterally-extending flange between said top portion and the downwardly-extending part, said attachment comprising a plate having a main area extending rearwardly down past the center of the propeller and terminating above the skeg,

said plate having a forwardly-extending area lying against a side of and bolted to the upper portion of the lower assembly above the laterally-extending flange, the forwardly-extending area having a laterally-turned flap along its lower edge, which flap rests on and is bolted to the laterally-extending flange on said lower end assembly of the outboard motor.

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