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GUARD FOR OUTBOARD MOTORS

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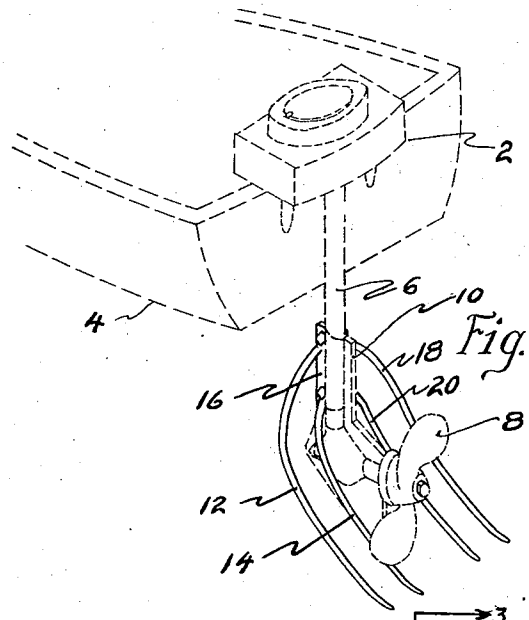


Fig. 1.

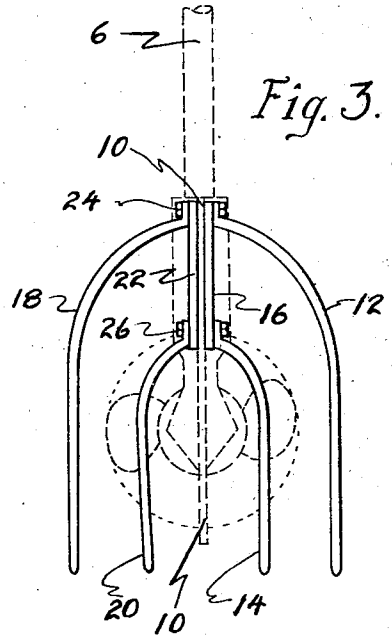


Fig. 3.

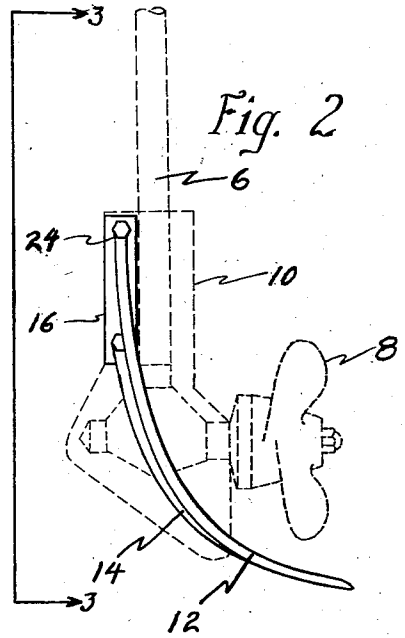


Fig. 2

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GUARD FOR OUTBOARD MOTORS

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12 Claims. (Cl. 115—42)

This invention relates to a guard for outboard motors for boats and more particularly it concerns a guard which will protect the outboard motor from damage when the boat is traversing shallow waters containing dangerous submerged rocks, logs, and the like.

One object of the invention is to provide a guard which offers protection to the full propeller diameter but which at the same time does not materially reduce the efficiency of the propeller. By means of a simple clamp arrangement guards constructed in accordance with the invention may be easily installed on any type of outboard motor and can likewise be easily detached when not needed, as for example, when navigating only in deep waters.

Another object of the invention is to provide a guard which is so shaped or curved that it will easily pass over solid objects and fend off weeds or light floating obstacles.

Still another object is to provide such a guard which will spring under impact but will return to its original shape and which is flexible to a degree that will minimize the impact between the motor and obstacles encountered. This is of importance, for while guards for outboard motors are known, they are as a rule not flexible, and, consequently, the impact upon striking a solid object often breaks the guard or the propeller shaft or blades.

The invention further has for an object the provision of a guard for outboard motors which will not wedge between two rocks.

Furthermore, the guard which I have invented is constructed so that there is a larger clearance between propeller and guard than any opening in the guard so that small floating objects which pass through the guard will not jamb between the guard and propeller.

While some guards for outboard motors now known possess some of these features, they have never before been incorporated into one guard. The guard which I have invented not only accomplishes this but does so in such a manner as to maintain simplicity of construction and efficiency of operation.

For purposes of example the invention has been illustrated in the accompanying drawing in which:

Fig. 1 is a perspective view of the invention.

Fig. 2 is a side elevational view.

Fig. 3 is a view on the line 3—3 of Fig. 2.

In all of these views the parts of the outboard motor and boat are shown in dash lines so that it will be easier to distinguish the elements of the guard proper.

In Fig. 1 an outboard motor generally indicated by the reference numeral 2 is attached to a boat 4 in the customary manner so that the propeller shaft and blades, 6 and 8 respectively, may be tilted out of the water.

It will be noted that the outboard motor arrangement shown is provided with a rudder structure 10, the upper portion of which surrounds the shaft 6. The rudder structure 10, however, is adapted to turn around the axis of the shaft 6 together with the propeller. Such structure is customarily employed for the purpose of steering the boat. In fact all of the structure thus far described is conventional.

Fig. 1 shows in full lines the novel guard as applied to this structure. In general appearance the guard resembles somewhat a pitchfork having four tines. From Fig. 3, however, it will be seen that the guard is constructed of two sections each of which has two tines or guard prongs. The tines or guard prongs 12 and 14 of one section may be connected together by a bar or rod 16, while the tines or guard prongs 18 and 20 of the other section may be connected together by a bar or rod 22.

The prongs 12, 14, 18 and 20, if desirable, may be integral with or welded to the bars 16 and 22 respectively. It is also conceivable that they be separate, which as will be apparent, is an advantage should one break and require replacement.

These sections are preferably secured to the rear upper portion of the rudder structure 10 by bolts 24 and 26 which pass through openings in the tines and bars and then through openings in the rudder structure 10. Tightening these bolts exerts a clamping action which securely holds the guard in steady operative position. Moreover, the guard may be easily detached by simply unloosing the bolts.

It is obvious that the guard may, within the scope of the invention, be clamped or otherwise secured to an outboard motor assembly. Various types of outboard motor assemblies will dictate the kind of securing means which should be used. For the type of outboard motor illustrated in the present drawing the guard clamping arrangement also shown is ideal.

The guard may be made up of more or less than four tines or prongs and the number of these elements employed depends upon the propeller spread. For example, with a propeller having a spread of six and one-half inches a guard having

four tines is preferable. For a propeller of larger diameter additional tines or prongs are used. In each case the space between the guard tines may be about two inches, or more or less.

The tines or prongs 12, 14, 18 and 20, for example, should preferably be made from spring steel of from a quarter to a half inch in diameter depending on the horse power of the motor.

It will be noted that these guard tines or prongs pass downwardly around the propeller and extend to the rear of the propeller a half inch or more and also at least a half inch on each side. Such an arrangement protects the blades from contact with any obstacle encountered having a diameter of more than two inches. Inasmuch as the guard tines are in all places at least two inches from the propeller, an obstacle of two inches or less will fall through the motor field.

Particular attention should be directed to the gradual curve of the guard tines. This backward curve, as will be seen from Fig. 2 has no projecting points and will have a tendency to shunt weeds as well as stones and logs away from the propeller.

The invention has proved to be of great advantage particularly when traveling in shallow rivers and over rapids. Weeds and light obstacles will be shunted by the guard tines. Heavier obstacles will cause the tines or prongs to bend temporarily and will thus take up the shock which might otherwise be injurious to the outboard motor assembly. A stationary obstacle of considerable size will cause the tines or prongs to bend and then the whole assembly to pivot out of the water. It will be noted that the construction described and shown is such that it will prevent the outboard motor from wedging between two rocks or other stationary obstacles.

With all these advantages the present invention is, at the same time, simple in construction and easy to attach and detach.

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

1. A guard for an outboard boat motor unit comprising, a plurality of stiff bendable guard elements secured to said unit above and forward of the propeller blades and extending downwardly and rearwardly in a gradual curve to protect the propeller blades.

2. A guard for an outboard boat motor unit comprising, a plurality of guard elements of relatively stiff but springy metal, said elements being disposed in spaced vertical planes, and means for securing said guard elements to said unit at a point above and forwardly of the propeller so that said guard elements extend downwardly and rearwardly around the propeller in an unbroken line.

3. In a guard as defined in claim 2, said guard elements being spaced apart by a distance less than the distance between said elements and the propeller blades whereby small objects which pass through the guard will not jamb between the guard and the propeller.

4. A guard for an outboard boat motor unit having a turnable downwardly extending vertical shaft and a rudder plate secured thereto, said guard comprising a plurality of guard elements of spring metal and disposed in spaced vertical planes, and means for securing said guard elements to said rudder plate at a point above and forwardly of the propeller so that said guard extends downwardly and rearwardly around the propeller.

5. In a guard as defined in claim 4, said guard elements extending downwardly and rearwardly around the propeller in a curved unbroken line to a point slightly to the rear of the propeller blades.

6. In a guard as defined in claim 4, the distance between the guard elements being less than the distance between the guard elements and the propeller blades, whereby small objects which pass through the guard will not jamb between guard and propeller.

7. A guard for an outboard boat motor unit having a downwardly extending substantially vertical shaft, said guard comprising a plurality of guard elements of spring metal, the major portion of said elements being disposed in spaced vertical planes on either side of a vertical plane passing through said shaft, the upper portions of said guard elements converging inwardly toward said last mentioned vertical plane, and means for securing the upper ends of said guard elements to said unit at a point above and forward of the propeller so that said guard extends downwardly and rearwardly around the propeller in an unbroken line.

8. A guard as defined in claim 7, the elements on each side of the vertical plane passing through the vertical shaft being connected integrally to form guard units.

9. A guard as defined in claim 7, the elements on each side of the vertical plane passing through the vertical shaft being connected by rods, and said means for securing the upper ends of said elements consisting of securing elements which pass through apertures in said ends and in said rods to hold the parts rigidly together.

10. A guard for an outboard boat motor unit having a turnable downwardly extending shaft and a rudder plate secured to said shaft, said guard comprising a plurality of guard elements of spring metal, the major portion of said elements being disposed in spaced vertical planes on either side of said rudder plate, the upper portions of said guard elements converging inwardly to said rudder plate, the upper ends of said elements having apertures therein, said rudder plate having corresponding apertures, and means passing through the corresponding apertures in said elements and said rudder plate to secure said guard in position, said apertures in said rudder plate being disposed above and forwardly of the propeller so that said guard extends downwardly and rearwardly in a curved unbroken line around the propeller to protect the same.

11. In a guard as defined in claim 10, the guard elements disposed on each side of said rudder plate being connected integrally to form guard units.

12. In a guard as defined in claim 10, rods connecting the ends of the guard elements on each side of said rudder plate, said rods being provided with apertures through which said securing means also pass to hold the elements rigidly together in which position the rods abut against the rudder plate.

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