United States Patent [19]

Porter et al.

[11] **3,802,377**

[45] **Apr. 9, 1974**

[54] **LOWER UNIT WEED GUARD**

[76] Inventors: **Stephen G. Porter,** 1020 N.W. 49th St.; **Theodore J. Adams,** 4280 N.W. 10th Ter., both of Fort Lauderdale, Fla. 33309

[22] Filed: **May 24, 1973**

[21] Appl. No.: **363,410**

[52] **U.S. Cl.** ..... **115/17,** 115/18 E, 115/42

[51] **Int. Cl.** **B63h 1/14**

[58] **Field of Search** ..... 115/6.1, 17, 18 E, 42, 115/70

[56] **References Cited**

UNITED STATES PATENTS

2,135,162	11/1938	Benson	115/42
2,136,628	11/1938	Lundell	115/42
2,244,217	6/1941	Pries	115/42
3,025,825	3/1962	Martinson	115/42
3,035,538	5/1962	Willard	115/42

Primary Examiner—Duane A. Reger
Assistant Examiner—Jesus D. Sotelo
Attorney, Agent, or Firm—Clarence A. O'Brien; Harvey B. Jacobson

[57] **ABSTRACT**

A truncated cone-shaped hollow body is provided and includes a plurality of axially spaced circumferential rows of openings formed therethrough. The body is further provided with a longitudinal slot extending along one slant height zone thereof and opening through the major diameter end of the body. The small diameter end of the body includes an integral endwise outwardly projecting cylindrical sleeve portion for snugly telescoping over the forward end portion of the lower horizontal cylindrical motor housing of an electric trolling motor and a clamp is provided for clamping the cylindrical extension to the motor housing. The slot is provided to receive the lower end of the depending support shaft portion of the electric trolling motor as the body is telescoped over the forward end of the motor housing and the side of the body remote from the first mentioned slot includes a second longitudinal slot closed at its opposite end and provided to receive the depending skeg portion of the trolling motor which extends longitudinally of the motor housing and projects downwardly therefrom.

9 Claims, 5 Drawing Figures

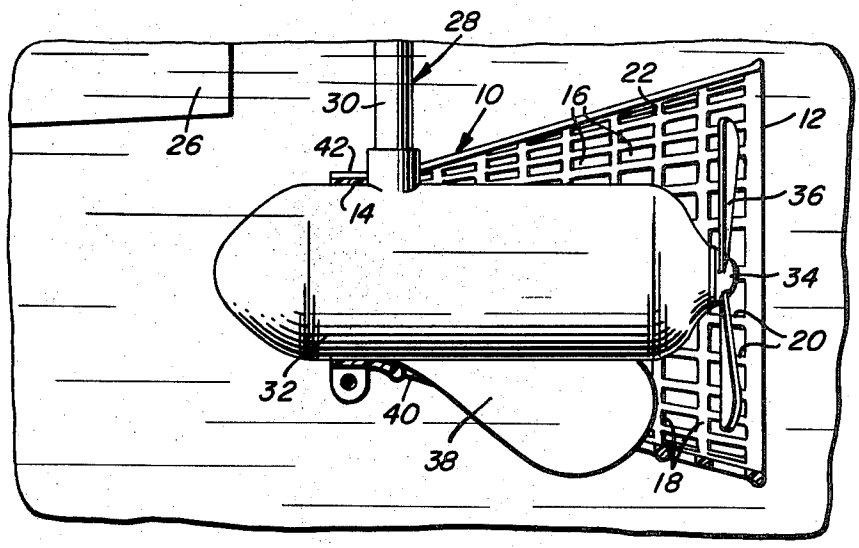


Fig. 1

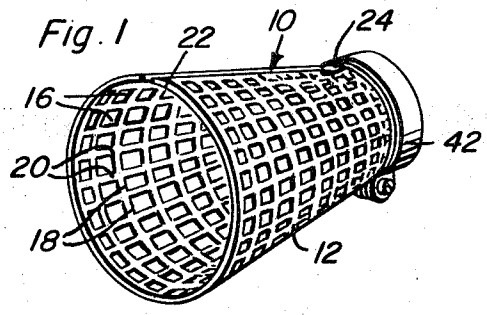


Fig. 5

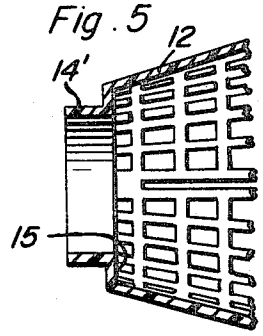


Fig. 2

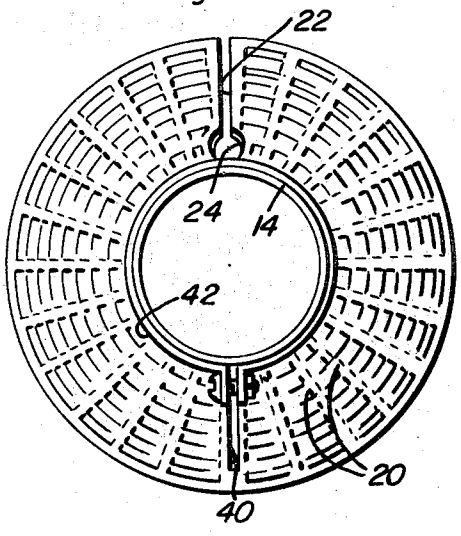


Fig. 3

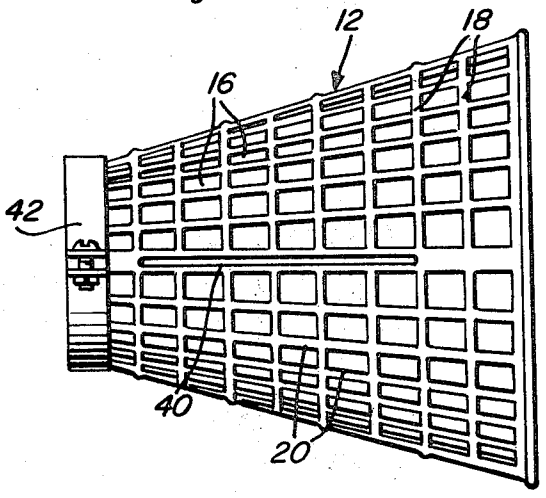
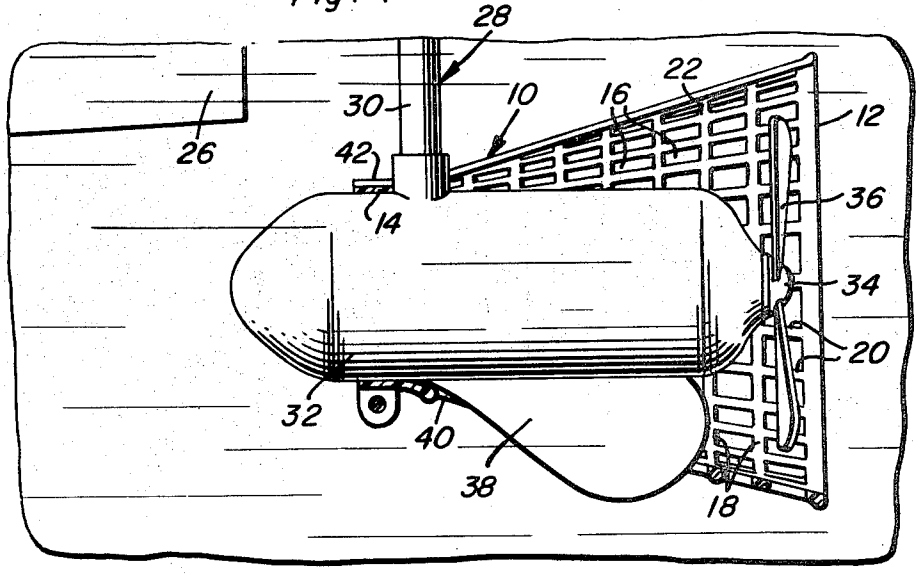


Fig. 4



LOWER UNIT WEED GUARD

Electric trolling motors are becoming increasingly popular and are utilized in shoal waters in which weeds are many times present in abundance. Many electric trolling motor units are operated by a remote control toe-heel foot pedal to control steerage of the electric motor and quick steerage may be accomplished through the utilization of the toe-heel foot pedal control. However, when operating an electric trolling motor in shoal waters in which weeds are present the propeller of the trolling motor may quite often become entangled with weeds. The entanglement of weeds about the propeller of an electric trolling unit not only reduces the efficiency of the trolling motor as a propulsion force but also increases the resistance of the water on the trolling motor during steering operations and quick and precise control through the utilization of the conventional toe-heel foot pedal control is greatly hindered.

The weed guard of the instant invention has been specifically designed for utilization on at least the several more popular electric trolling motors and is provided to prevent weeds from becoming entangled with the propeller of these trolling motors. The guard has been specificially designed to be effective as a weed guard, to offer minimum resistance during steering operations and to add very little weight to the lower end of the electric trolling unit whereby tilting of the unit will not be rendered more difficult.

The main object of this invention is to provide a means for guarding the propeller of an electric trolling motor against having weeds in the ambient water becoming entangled with the propeller.

Another object of this invention is to provide a guard which will be of light weight construction so as to add very little weight to the lower end portion of the electric trolling motor.

Another important object of this invention is to provide an electric trolling motor propeller guard which will offer little resistance to sideways movement through the water in order that precise steering control of the electric trolling motor may be maintained through the utilization of a conventional toe-heel foot pedal control.

Another very important object of this invention is to provide a guard for an electric motor in accordance with the preceding objects and constructed in a manner whereby the guard may be utilized on motors of several different manufacture.

A final object of this invention to be specifically enumerated herein is to provide a propeller guard for an electric trolling motor which will conform to conventional forms of manufacture, be of simple construction and easy to use so as to provide a device that will be economically feasible, long lasting and relatively trouble-free in operation.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout.

FIG. 1 is a perspective view of the propeller guard of the instant invention;

FIG. 2 is a front elevational view of the propeller guard on somewhat of an enlarged scale;

FIG. 3 is a side elevational view of the propeller guard as seen from the right side of FIG. 2;

FIG. 4 is a side elevational view of the propeller guard as mounted on the motor housing of an electric trolling motor, the guard being illustrated in longitudinal vertical section; and

FIG. 5 is a fragmentary longitudinal vertical sectional view of the forward end portion of a modified form of propeller guard adapted for use in conjunction with an electric motor housing of smaller diameter than the electric motor housing illustrated in FIG. 4.

Referring now more specifically to the drawings, the numeral 10 generally designates the propeller guard of the instant invention. The guard 10 includes a hollow truncated cone-shaped body referred to in general by the reference numeral 12 and including a cylindrical extension 14 projecting endwise outwardly from the minor diameter end of the body 12. The body 12 is provided with longitudinally spaced rows of circumferentially extending openings 16 which are defined between longitudinally spaced circumferentially extending band portions 18 of the body intersecting with circumferentially spaced slant height zones 20 of the body 12. The openings 16 are defined in the spaces between adjacent pairs of intersecting band portions 18 and zones 20, the openings 16 being slightly elongated longitudinally of the body 12.

The upper peripheral portion of the body 12 includes a longitudinally extending slot 22 which opens through the major diameter end of the body 12 and is closed at its forward end adjacent the extension 14. Further, the forward end of the slot 22 is transversely enlarged as at 24.

With attention now invited more specifically to FIG. 4 of the drawings, there will be seen the rear portion of a fishing boat 26 from which a conventional form of electric trolling motor referred to in general by the reference numeral 28 is supported. The trolling motor 28 includes a depending support shaft or portion 30 and a horizontally elongated front-to-rear extending electric motor housing 32 supported from the lower end of the depending support portion 30. The electric motor housing 32 encloses an electric motor (not shown) including a front-to-rear extending rotary output shaft 34 upon which a marine propeller 36 is mounted. The propeller 36 is disposed at the rear end of the housing 32 and the latter also includes a depending longitudinally extending skeg 38.

The body 12 is constructed of stiff but bendable and somewhat resilient material such as plastic. The guard 10 is installed on the electric motor housing 32 by rearwardly displacing the guard 10 over the front end of the housing 32 after the slot 22 has been widened sufficiently to receive the lower end of the depending support portion 30. In addition, the guard 10 includes a longitudinal slot 40 along its under periphery and the slot 40 is closed at its opposite ends and receives the skeg 38 therethrough as the guard 10 is moved into the position illustrated in FIG. 4. Thereafter, with the lower end of the support portion 30 disposed in the transversely enlarged portion 24 of the slot 22, a clamping band 42 is tightened about the extension 14 so as to securely clamp the latter about the forward end of the electric motor housing 32 with the propeller 36 received within the confines of the rear major diameter end portion of the body 12.

It is to be understood that the body **12** will be formed by conventional molding processes and if the electric motor housing **32** is of a smaller diameter than that illustrated in FIg. **4** of the drawings, a sleeve will be placed in the mold in which the guard **10** is formed so as to form a reduced diameter extension such as that designated by the reference numeral **14'** in FIG. **5** and which is formed integrally with the body **12** and supported from the latter by means of an annular partial front wall **15** extending between the rear end of the extension **14'** and the forward end of the body **12.**

If the guard **10** is to be used in conjunction with a trolling motor whose support portion **30** is positioned more closely adjacent the longitudinal center of the electric motor housing **32,** the portion of the slot **22** to be registered with the lower end of the support portion **30** may be transversely enlarged by using a suitable cutting instrument. However, in all instances the propeller **36** will be at least slightly spaced forward of the major diameter end of the body **12** so as to be fully enclosed within the guard **10.**

The plastic material of which the body **12** is constructed will be sufficiently stiff and resilient to retain its shape and yet the body **12** will be able to yield under impact with a submerged object. Further, the slightly longitudinally elongated openings **16** provide ample passage for water from the exterior of the body **12** into the area confined within the body **12** forward of the propeller **36** for subsequent acting upon by the propeller. Further, the openings **16** are sufficiently longitudinally elongated to reduce the resistance of side swinging of the gurad **10** through the water during steering movements. Thus, the trolling motor **28** may still be readily controlled by the conventional remote toe-heel foot pedal control.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

What is claimed as new is as follows:

1. In combination with an outboard motor of the type including a depending support portion provided with a horizontally elongated marine propeller drive housing at its lower end portion, said housing including a front-to-rear extending shaft journalled therein having a marine propeller mounted on its rear end, a weed guard comprising a hollow generally horizontal truncated cone-shaped body provided with axially and circumferentially spaced water passages formed therethrough, said body being constructed of light weight, stiff but somewhat flexible material, the minor diameter end of said body including an endwise outwardly projecting cylindrical extension snugly telescopingly engaged over the forward end of said housing and disposed forward of said support portion, said extension including means clamping said extension about said housing with the center axis of said body at least generally coinciding with the center axis of said housing and the major diameter end of said body loosely enclosing said marine propeller, the upper marginal portion of said body having a longitudinal slot formed therein opening rearwardly through the major diameter end of said body and closed at its forward end adjacent said extension, said slot being operable to receive the lower end of said depending support portion therethrough.

2. The combination of claim **1** wherein said cylindrical extension is uninterrupted about its circumference.

3. The combination of claim **1** wherein the material of which said body is constructed is at least slightly compressible, said means clamping said extension about said housing comprising a compression type clamp member extending about said extension and clamping the extension to said housing.

4. The combination of claim **1** wherein said housing includes a depending front-to-rear extending blade-type skeg on its lower portion, said body having a second longitudinally extending closed ended slot formed in its lower portion through which said skeg extends.

5. The combination of claim **1** wherein said body includes longitudinally spaced circumferentially extending bands disposed in parallel planes normal to the center axis of said body and which intersect with circumferentially spaced slant height zones of said body, said openings being formed in the areas between adjacent bands intersecting with adjacent zones.

6. The combination of claim **1** wherein said openings are at least slightly elongated along said slant height zones.

7. The combination of claim **1** wherein the minor diameter end of said body is of substantially the same inside and outside diameter as the inside and outside diameters of said extension.

8. The combination of claim **1** wherein the inside and outside diameters of said extension are less than the inside and outside diameters of the minor diameter end of said body and the rear end portion of said extension is joined to the minor diameter end of said body by means of an annular partial front wall whose outer periphery is formed integrally with the minor diameter end of said body and whose inner periphery is formed integrally with said extension.

9. The combination of claim **1** wherein the inner forward end of said slot is transversely enlarged.

* * * * *