

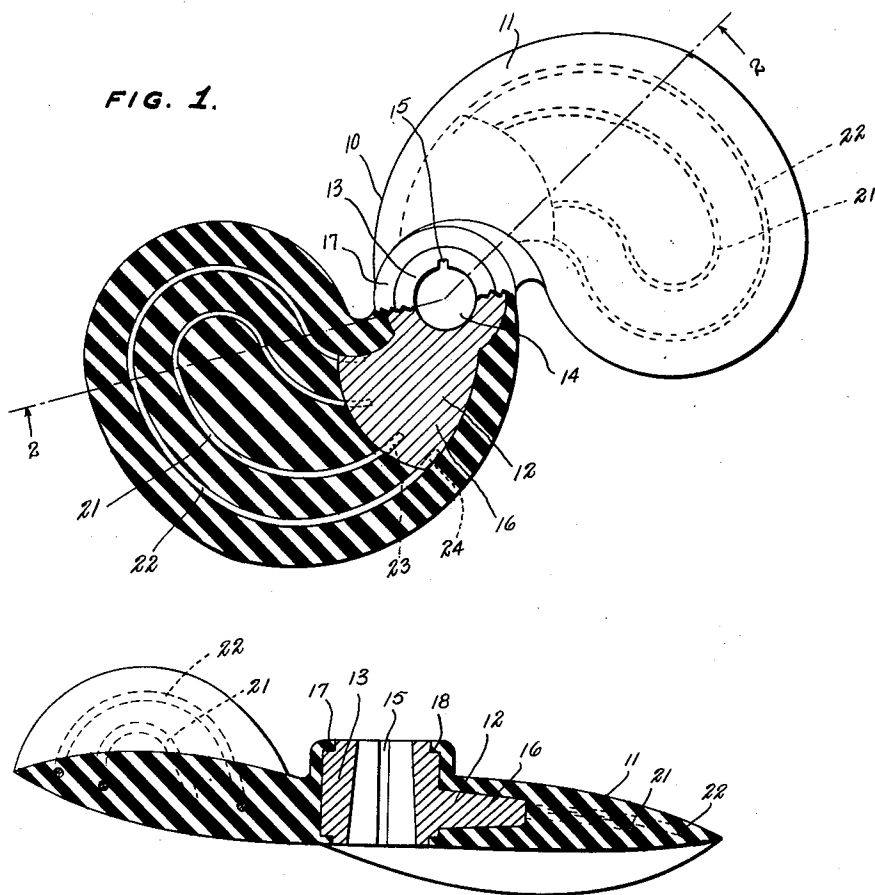
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2,473,665

PROPELLER

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PROPELLER

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1 Claim. (Cl. 170—159)

1

This invention relates to propellers for outboard and inboard motors, and more particularly to a propeller which will be unbreakable.

It is an object of the present invention to provide a flexible propeller for outboard and inboard motors which will eliminate the breaking of blades and other equipment forming a part of the outboard motor when striking objects such as rocks, logs and other obstructions in the water.

It is another object of the invention to provide a propeller for outboard and inboard motors which can be operated in water without fear of breakage of the propeller shear pin or the propeller shaft.

According to the invention, there is provided a propeller which has wire reinforced rubber blades and a partial short metal core within the rubber material through which the propeller shaft is extended upon connecting the propeller to the shaft. Since the blades are flexible, they will be bent as they engage an obstruction and will shear from the obstruction until they have passed thereover and then will return to their original position. The reinforcing wires conform generally to the shape of the blades and are secured to the internal short metal core. These wires are flexible the same as the rubber material and will return to their original shape when the blade is released from the obstruction. The metal core has a hub portion which extends the full axial length of the propeller at the center of the same.

For a better understanding of the invention, reference may be had to the following detailed description taken in connection with the accompanying drawings, in which:

Figure 1 is an end view looking upon the face of the propeller with portions broken away and shown in section to show the interior construction of one of the blades.

Figure 2 is a longitudinal cross-sectional view of the propeller taken along the line 2—2 of Figure 1, and looking in the direction of the arrows thereof.

Referring now to the figures, 10 represents a propeller having two radially extending blades 11 formed of flexible rubber and having the general shape of regular or standard propeller blades. At the center of the propeller is a short core 12 having a hub portion 13 with a hole 14 therein adapted to receive the end of a propeller shaft and be keyed thereto by a key fitting within a key slot 15 extending axially of the hole. Extending outwardly of the hub portion 13 and following the general contour of the blades are short wing portions 16. These wing portions are entirely covered by the flexible material of the blades and so, too, is the hub portion 13 covered by the flexible material of the blades. The rubber material terminates at opposite ends of the core hub portion 13 in circular formation 17 extending inwardly into an annular recess 18 of the core hub portion 13.

2

Concentric reinforcing wires 21 and 22 are fashioned to have the same general contour as the blades and extend through the flexible material and have their ends secured in the ends of the short portion 16 of the core, as indicated at 23 and 24. As may be seen in Figure 1, the general profile of the propeller is substantially S-shaped, with the ends of the blades well rounded, the internal wire loop reinforcements 21 and 22 being curved accordingly to present correspondingly rounded independent loops.

While the rubber material turns inwardly, as shown at 17, to fill the recess 18, it does not extend to such an extent that the rubber will engage the propeller shaft. The core 12 is the only part of the propeller that engages the propeller shaft.

While various changes may be made in the details of construction, it shall be understood that such changes shall be within the spirit and scope of the present invention as defined by the appended claim.

I claim:

In a flexible propeller comprising a pair of flexible propeller blades, a rigid core member within the propeller having a hub portion and integral arm portions extending limited distances into the propeller blades, the features which include having the propeller as a whole provided with an S-shaped profile with the blades widening gradually from the inner to the outer ends thereof and the outer ends being rounded, having the arm portions extending part way into the main body portions of the blades and widening gradually from the hub portion to the outer ends thereof, a pair of independent flexible wire members extending fixedly at both ends of both members into the outer end of each arm portion within the propeller blade respectively associated therewith, and extending from the arm portions in the form of a pair of rounded loops disposed in each blade independently in substantial parallel relation, with one spaced uniformly within the other and both generally conforming to the curved contour of the outer curved edge of said propeller blade.

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