July 3, 1951 W. W. K. VAN NORT 2,559,179

PROPELLER GUARD FOR OUTBOARD MOTORS

Filed Jan. 20, 1950 2 Sheets-Sheet 1

Fig. 1.

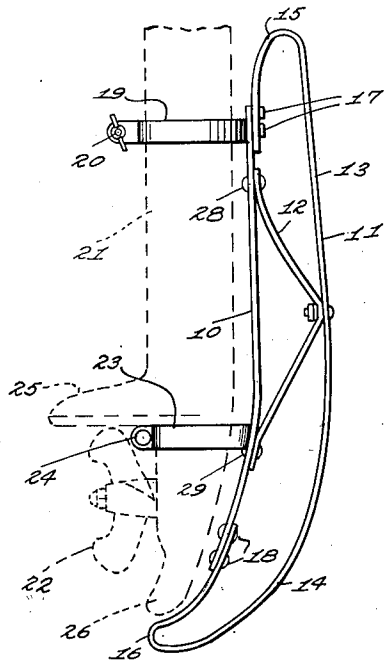


Fig. 2.

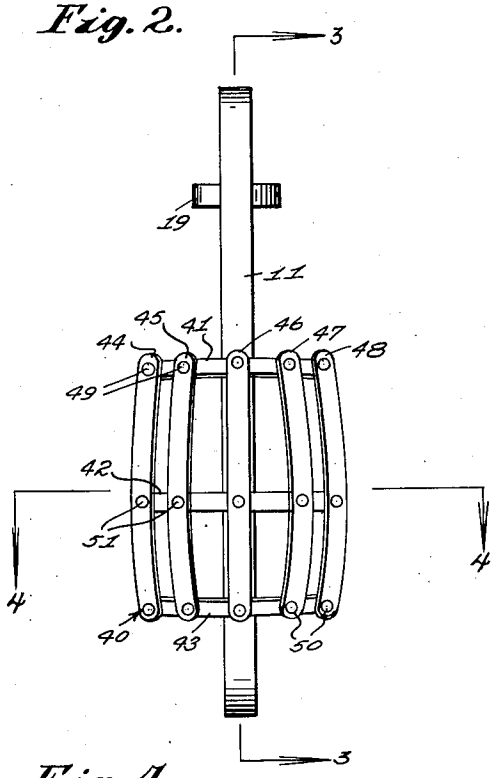


Fig. 3.

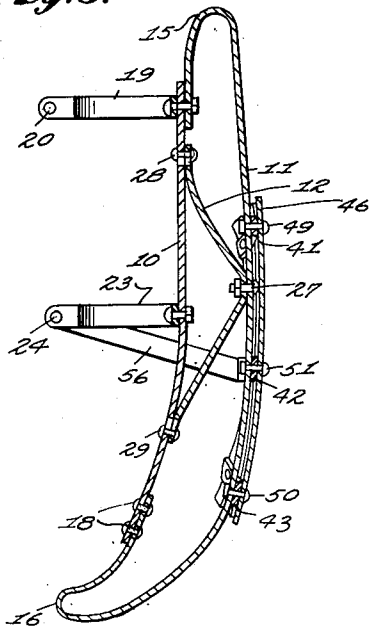
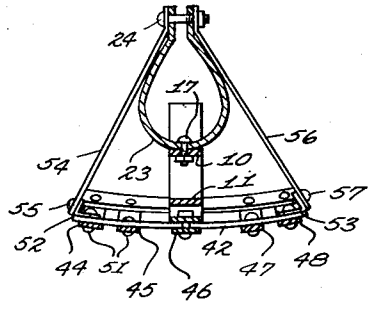


Fig. 4.



INVENTOR

WILLIAM W. K. VAN NORT

BY

McMorrow, Berman & Davidson

ATTORNEYS

July 3, 1951 W. W. K. VAN NORT 2,559,179

PROPELLER GUARD FOR OUTBOARD MOTORS

Filed Jan. 20, 1950 2 Sheets-Sheet 2

Fig. 5.

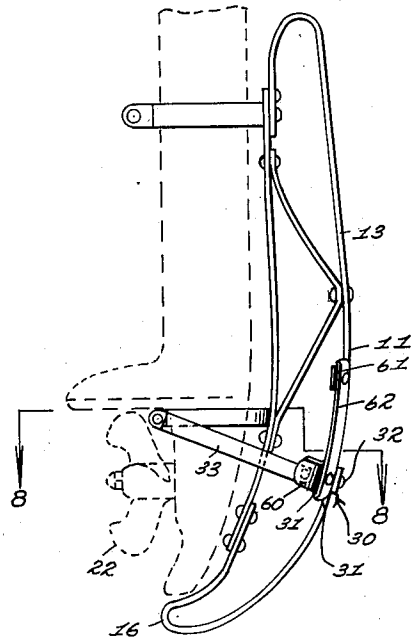


Fig. 6.

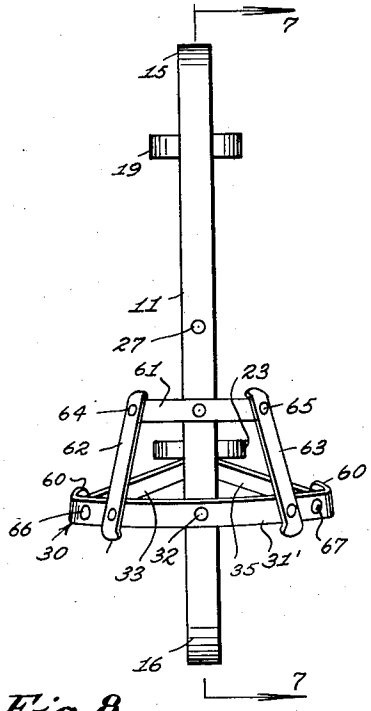


Fig. 7.

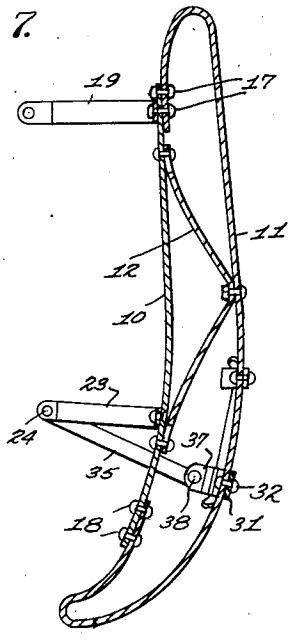
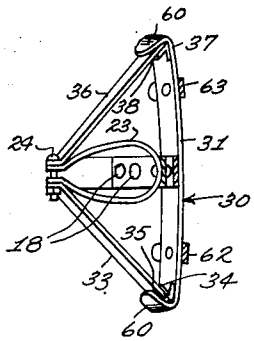


Fig. 8.



INVENTOR.
WILLIAM W. K. VAN NORT
BY

McMorrow, Berman & Davidson
ATTORNEYS

Patented July 3, 1951 2,559,179

UNITED STATES PATENT OFFICE

2,559,179

PROPELLER GUARD FOR OUTBOARD MOTORS

William W. Keysling Van Nort, Cabin John, Md.

Application January 20, 1950, Serial No. 139,594

4 Claims. (Cl. 115—42)

1

This invention relates to outboard engine guards and more particularly to a guard for protecting the housing and propeller of an outboard motor against submerged material or bodies such as sand and gravel bars, weeds and grass and logs and rocks.

It is among the objects of the invention to provide an improved outboard motor guard which is variable for different operating conditions in order to add the minimum amount of weight and drag consistent with the particular operating condition, which is of simple and durable construction and is designed for the minimum weight and water drag consistent with full protection of the motor and propeller, which is spring cushioned to avoid shocks to the motor structure, and which is economical to manufacture, can be easily attached to an outboard motor with no modification of the motor construction, and does not interfere in any way with the normal operation of the motor.

Other objects and advantages will become apparent from a consideration of the following description and appended claims in conjunction with the accompanying drawings, wherein:

Figure 1 is a side elevation of an outboard motor guard illustrative of the invention shown in operative position on an outboard motor diagrammatically illustrated;

Figure 2 is is a front elevation of an assembly including the guard illustrated in Figure 1 and an additional weed guard;

Figure 3 is a cross sectional view on the line 3—3 of Figure 2;

Figure 4 is a cross sectional view on the line 4—4 of Figure 2;

Figure 5 is a side elevation of an assembly including the guard illustrated in Figure 1 and a somewhat different form of weed guard;

Figure 6 is a front elevation of the assembly illustrated in Figure 5;

Figure 7 is a cross sectional view on the line 7—7 of Figure 6; and

Figure 8 is a cross sectional view on the line 8—8 of Figure 6.

With continued reference to the drawings, and particularly to Figure 1 of the drawings, the guard therein illustrated comprises a frame including an elongated metal bar 10 which is preferably of elongated, rectangular cross sectional shape and includes a substantially straight portion terminating at one end and a slightly curved portion extending from the straight portion to the other end thereof, an elongated strap 11 attached at its ends to the bar 10 at the respectively opposite ends of the latter, and a spring 12 interposed between the strap 11 and the bar 10.

2

The strap 11 is formed of a length of strong, resilient material, such as spring steel and is preferably of elongated, rectangular cross sectional shape although its cross sectional shape may be circular or of some other desired form. This strap includes a substantially straight portion 13 and a curved portion 14 extending from one end of the straight portion 13 and further includes a recurved portion 15 extending from the end of the straight portion remote from the curved portion and a second recurved portion 16 extending from the end of the curved portion 14 remote from the straight portion 13. The end of the strap 11 at the recurved portion 15 is apertured and the bar 10 is correspondingly apertured near one end thereof and rivets 17 extend through these apertures to secure the end of the recurved portion 15 of the strap to the end of the straight portion of the bar 10. The end of the recurved portion 16 of the strap is also apertured and the bar 10 is apertured at the end of its curved portion and rivets 18 extend through these apertures to secure the end of the recurved portion 16 of the strap to the end of the curved portion of the bar 10. The strap 11 thus extends along the convex side of the bar 10 and the intermediate portion of the strap is substantially parallel to the bar. The recurved portion 15 of the strap extends beyond the end of the straight portion of the bar and the recurved portion 16 of the strap extends beyond the end of the curved portion of the bar and is curved to extend beyond the concave surface of the bar 10 which is disposed opposite to the strap 11.

A clamp band 19 is secured substantially at its midlength location to the bar 10 at the outer end of the straight portion of this bar by a suitable means such as one of the rivets 17 and has its ends bent outwardly and apertured to receive a clamp bolt 20. This clamp band is shaped and dimensioned to embracingly engage the lower portion of the housing 21 of an outboard motor at a location spaced above the propeller 22 and is clamped onto the motor housing by tightening the clamp bolt 20. A second clamp band 23 is secured to the bar 10 at a location between the midlength position of the bar and the outer end of the curved portion of the bar and has its ends angularly disposed and apertured to receive a clamp bolt 24. This clamp band 23 is also shaped and dimensioned to embracingly engage the motor housing 21 at a location below the clamp band 19 and between the propeller 22 and the rear-

wardly extending propeller guard formation 25 on the motor housing.

The clamp bands 19 and 23 extend substantially perpendicularly from the bar 10 in the same direction and when they are properly engaged with the housing of the outboard motor the bar 10 is spaced from and disposed substantially parallel to the front edge of the motor housing. The recurved portion 16 of the strap 11 then extends downwardly and rearwardly under the skag 26 provided on the bottom end of the motor housing to fully protect the entire submerged portion of the housing and the propeller 23.

The spring 12 is preferably a flat spring bent to a shallow V-shape and connected at its apex to the strap 11 by suitable means such as the bolt or rivet 27. The ends of this spring are connected to the bar 10 at respectively opposite sides of the bend 23 by suitable means, such as the rivets 28 and 29 which extend through registering slots in the spring and the bar to permit limited movement of the spring ends longitudinally of the bar as the spring is flexed. The spring thus cushions relative movement between the strap 11 and bar 10 and diminishes or eliminates the transmission of shock to the motor housing if the strap impacts a submerged object, such as a stone or log during forward movement of a boat on which the motor is mounted.

The above described guard assembly is all that is necessary to fully protect the outboard motor when the boat is being used in water which is substantially free of weeds, grass, leaves, brush and similar debris and the only obstacles likely to be encountered are submerged sand or gravel bars, rocks and logs. If such an obstacle is encountered with the guard assembly in place the motor housing will be tilted upwardly and rearwardly and will pass over the obstacle without damage to the housing whereas, without the guard there would be serious danger of the motor housing being dented, bent or broken by contact with such submerged obstacles.

The above described assembly provides a guard assembly of minimum weight and water drag and is used for the optimum operating conditions under which the use of a guard is necessary. Where there is submerged grass or similar material in the water the attachment illustrated in Figures 5 to 8 inclusive and generally indicated at 30 may be added to the guard device illustrated in Figure 1 and described above.

The attachment 30 comprises an elongated bar or rod 31 which preferably has a slight longitudinal curvature and has its opposite end portions curved to extend from the concave side of the bar, as illustrated at 60. This bar is connected at its midlength location to the strap 11 at a location between the recurved portion 16 of the strap and the adjacent end of the straight portion 13 of the strap by suitable means, such as the bolt or rivet 32, and is disposed substantially perpendicular to the strap and extends symmetrically to the opposite sides of the latter. A brace strut 33 is connected at one end to one end of the attachment bar 31 by suitable means, such as the angle bracket 34 secured to the bar and the rivet 35 extending through apertures in the brace strut and the angle bracket, and is provided at its opposite end with an aperture which receives the clamp bolt 24 to connect this brace strut to the clamp bolt at the corresponding side of the clamp band 23. A second brace strut 36 is connected at one end to the other end of the attachment bar 31 by an angle bracket 37 secured to the attachment bar at such other end thereof and a rivet 38 extending through registering apertures in the brace strut and the angle bracket. At its opposite end the brace strut 36 is apertured to receive the clamp bolt 24 for connecting this brace strut to the clamp bolt at the side of the clamp band 23 opposite the brace strut 33.

If desired, the angle bracket 34 and 37 may be omitted and the brace struts connected directly to the angularly disposed end portions of the bar 31.

A bar 61, shorter than the bar 31, is secured at its midlength location to the strap 11 above the bar 31 and two slats 62 and 63 are secured to and extend between the bars 31 and 61. These slats are connected at their upper ends to the upper bar 61 at respectively opposite ends of the latter by suitable means, such as the rivets 64 and 65 and are secured near their lower ends to the lower bar 31 near respectively opposite ends of the lower bar by suitable means, such as the rivets 66 and 67, and have their lower end portions curved below the lower bar to the concave side of the latter.

When the attachment 30 is added to the main guard frame it will flatten the grass ahead of the propeller 22 and prevent the grass or similar material from winding around and fouling the propeller.

When the water contains material such as dense weeds, leaves and brush, the guard attachment illustrated in Figures 2, 3 and 4 and generally indicated at 40 is attached to the main guard frame instead of the attachment 30 described above.

The guard attachment 40 comprises three cross bars 41, 42 and 43 mounted on the frame strap 11 in spaced apart, substantially parallel relationship to each other. Each of these cross bars is connected to the frame strap by a suitable means such as a bolt or rivet and is positioned substantially perpendicular to the strap and extends symmetrically to the opposite sides of the latter. A plurality of spaced apart slats, as indicated at 44, 45, 46, 47 and 48 are connected to the cross bars 41, 42 and 43 in spaced apart, substantially parallel relationship to each other.

The cross bars are preferably slightly curved longitudinally thereof and the slats are also longitudinally curved to conform to the curvature of the frame strap 11. The center cross bar 42 is connected to the frame strap substantially at the level of the lower clamp band 23 while the lower cross bar 43 is connected to the frame strap substantially at the level of the lower end of the bar 10. The upper cross bar 41 is positioned above the center cross bar 42 a distance substantially equal to that at which the lower cross bar is spaced below the center cross bar.

The slats are connected at their upper ends to the upper cross bar 41 by suitable means, such as the rivets 49 and are connected at their lower ends to the lower cross bar 43 by similar rivets 50 and substantially at their midlength locations to the middle cross bar 42 by similar rivets 51.

The slats 44 to 48 inclusive are preferably spaced at substantially uniform distances from each other and may be either flat or round as may be desired.

Angle brackets 52 and 53 are secured to the center cross bar 42 at the respectively opposite ends of the latter and a brace strut 54 is pivotally connected at one end to the angle bracket 52 by suitable means, such as the rivet 55 and is apertured at its opposite end to receive the clamp bolt 24. A similar brace strut 56 is connected at one

end to the angle bracket 53 by suitable means, such as the rivet 57 and is apertured at its opposite end to receive the clamp bolt 24 at the side of the clamp band 23 opposite the brace 54.

When the guard attachment 40 is mounted on the guard frame it will protect the propeller against such material as submerged leaves, weeds and grass while the frame protects the propeller and motor housing against submerged objects such as rocks and logs.

There is thus provided an outboard motor guard which will fully protect the motor and propeller under different operating conditions and, at the same time, will add only the minimum amount of weight and drag consistent with the particular operating condition.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiment is, therefore, to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claims are, therefore, intended to be embraced therein.

What is claimed is:

1. An outboard motor guard comprising a frame including an elongated bar having a slight longitudinal curvature, a first clamp band secured to said bar at one end of the latter for embracingly engaging an outboard motor housing at a location on the housing, spaced above the propeller, a second clamp band secured to said bar intermediate the length of the latter for embracingly engaging an outboard motor housing below said first clamp band, an elongated strap of resilient material provided with recurved end portions secured at one end to said bar at said one end of the latter and secured at its other end to said bar at the other end of the bar, the recurved end portions of said strap extending beyond the corresponding ends of said bar with one of said recurved end portions extending to the side of said bar opposite the intermediate portion of said strap and the intermediate portion of said strap being substantially parallel to said bar, and a spring disposed between said bar and the intermediate portion of said strap.

2. An outboard motor guard comprising a frame attachable at one side to a motor housing to extend longitudinally of the housing and below the same, and a guard disposed at the other side of the frame and detachably secured to the latter, said frame comprising an elongated bar, clamp bands secured to said bar at spaced apart locations longitudinally thereof and extending from one side of the bar to embracingly engage a motor housing, a strap spaced from the opposite side of the bar and having recurved end portions secured to said bar at the respectively opposite ends of the latter, and a flat spring interposed between said strap and said bar.

3. An outboard motor guard comprising a frame attachable at one side to a motor housing to extend longitudinally of the housing and below the same, and a guard attachment disposed at the other side of the frame, said frame comprising an elongated bar, clamp bands secured to said bar at spaced apart locations longitudinally thereof and extending from one side of the bar to embracingly engage a motor housing, a strap spaced from the opposite side of the bar and having recurved end portions secured to said bar at the respectively opposite ends of the latter, and a flat spring interposed between said strap and said bar, and said guard comprising a first cross bar attached at its midlength location to said strap and extending perpendicularly to opposite sides of the strap substantially at the level of one of said clamp bands, brace struts extending one from each end of said cross bar to said one clamp band, a second cross bar attached to said strap above said first cross bar, and slats extending between and secured to said cross bars.

4. An outboard motor guard comprising a frame attachable at one side to a motor housing to extend longitudinally of the housing and below the same, and a guard disposed at the other side of the frame and detachably secured to the latter, said frame comprising an elongated bar, clamp bands secured to said bar at spaced apart locations longitudinally thereof and extending from one side of the bar to embracingly engage a motor housing, a strap spaced from the opposite side of the bar and having recurved end portions secured to said bar at the respectively opposite ends of the latter, and a flat spring interposed between said strap and said bar, and said guard comprising at least two bars secured at their midlength locations to said strap at spaced apart locations longitudinally of the latter and extending perpendicularly to opposite sides of said strap, one of said cross bars being disposed substantially opposite one of said clamp bands, brace struts extending one from each end of said one cross bar to said one clamp band, and a plurality of slats secured to said cross bars substantially perpendicular to the bars and in spaced apart substantially parallel relationship to each other.

WILLIAM W. KEYSLING VAN NORT.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
951,608	Hawthorne	Mar. 8, 1910
1,574,977	Johnson	Mar. 2, 1926
1,943,288	Chandler et al.	Jan. 16, 1934
2,458,890	Moore	May 3, 1949