Aug. 7, 1945. R. J. WADSWORTH ET AL 2,381,791

BOAT PROPULSION AND STEERING

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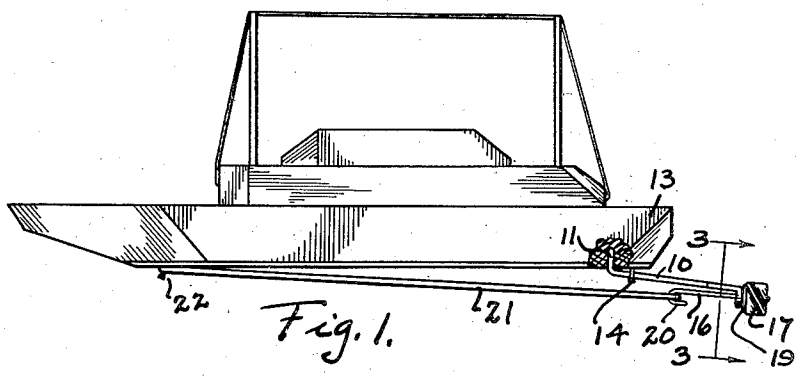


Fig. 1.

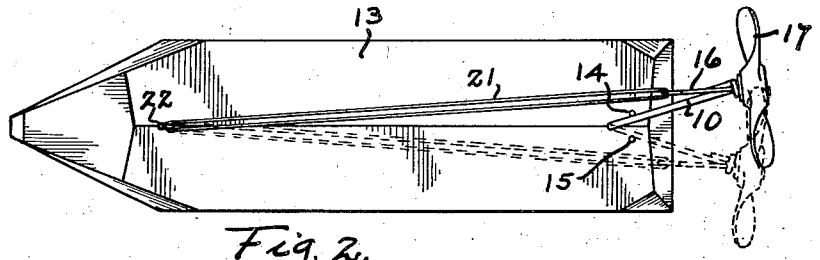


Fig. 2.

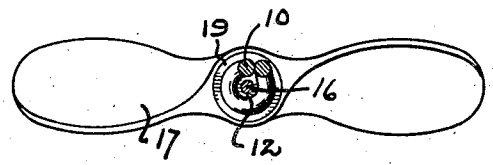


Fig. 3.

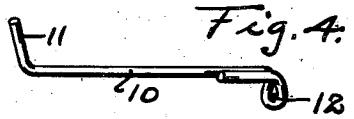


Fig. 4.

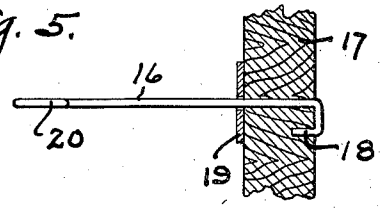


Fig. 5.

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BOAT PROPULSION AND STEERING

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Application December 22, 1944, Serial No. 569,373

6 Claims. (Cl. 46—93)

This invention relates to a toy boat and has for a primary object the provision and means for propelling the boat in various selected directions without having to employ a separate rudder. A further primary object of the invention is to provide such a structure in exceedingly simple form that may be produced in quantity at a relatively low price and yet which will be durable in the hands of the users.

These and other important objects and advantages of the invention will become apparent to those versed in the art in the following description of one particular form of the invention as illustrated in the accompanying drawing, in which

Fig. 1 is a view in side elevation of a structure embodying the invention;

Fig. 2, a bottom plan view;

Fig. 3, a view in transverse section on the line 3—3 in Fig. 1 on an enlarged scale;

Fig. 4, a view in perspective of the propeller shaft carrying member; and

Fig. 5, a detail in section through the propeller illustrating the attachment of the propeller shaft.

Like characters of reference indicate like parts throughout the several view in the drawing.

Referring first to Fig. 4, a propeller shaft carrying member 10 is formed out of any suitable material, such as a wire. On the forward end of this member 10 is upturned a length to form a post 11. The rear end of the member 10 is carried downwardly and around upwardly and forwardly to form a loop through which is left an eye 12.

The post 11, Fig. 1, is entered frictionally within a bore provided in the underside of the hull 13 to extend substantially vertically therein on the keel line. Preferably, the post 11 is inclined forwardly from the main part of the member 10, Fig. 4, whereby that main portion slopes downwardly, Fig. 1, when the post 11 is vertically positioned in the hull 13. On each side of the keel line of the hull 13 is provided a post 14 and 15 respectively to be in the path of the member 10 when swung to either side of that keel line, as indicated in Fig. 2.

A propeller shaft 16 is formed out of any suitable material, such as a wire and is carried through a propeller 17 by a rear portion, from which an end 18 is bent around and carried back into the propeller to force the shaft 16 to drive the propeller 17. A washer 19 is carried on the shaft 16 on the forward side of the propeller 17. The forward end of the shaft 16 is formed into a hook 20.

The shaft 16 is carried freely through the eye 12 of the supporting member 10 to have the hook 20 presented forwardly thereof. The shaft 16 is free to rock with a limited travel laterally of the member 10. An elastic member of some sort, herein shown as a rubber band 21, is engaged under the hook 20 of the shaft 16 and stretched forwardly under the hull 13 to loop over some securing means, herein shown as a post 22. The member 21 should be sufficiently taut initially by winding the propeller 17 in a reverse direction from that which it will travel to propel the hull 13, the band 21 will be twisted and cause to impart a forward pull on the shaft 16. Sufficient energy will be stored in the twisted band 21 to revolve the propeller 17 when released. Also, the band will have sufficient pull on the shaft 16 to retain the member 10 against either one of the posts 14 or 15 as the member 10 may be initially positioned for direction of travel of the hull 13. That is, the member 10 may be held against the post 14 as shown in the solid lines in Fig. 2 to cause the hull 13 to travel in one direction, and when the member 10 is shifted against the post 15 as indicated by the dash lines, the boat will be caused to turn in the other direction. The member 10 can also be held in alignment with the keel line of the hull 13 when so positioned since the pull of the band 21 may then be in that same direction. The washer 19 serves as a bearing fixed between the end of the member 10 and the forward side of the propeller 17.

While we have herein shown and described our invention in the one particular form, it is obvious that changes may be employed without departing from the spirit of the invention, and we therefore do not desire to be limited to that precise form beyond the limitations as may be imposed by the following claims.

We claim:

1. In combination with a boat hull, a propeller; a propeller shaft carrying the propeller; a member hinged at one end to the hull substantially on the keel line thereof to permit swinging by a rear portion to either side of the keel line; means revolubly supporting said shaft on said member; stop means limiting the travel of said member on each side of the keel line; said shaft extending forwardly of said supporting means; a propeller drive motor fixed to the hull forwardly of the hinge of said member and elastically engaging the forward portion of said shaft to impart both a rotary action and forward pull thereon.

2. In combination with a boat hull, a propeller;

a propeller shaft carrying the propeller; a member hinged at one end to the hull substantially on the keel line thereof to permit swinging by a rear portion to either side of the keel line; means revolubly supporting said shaft on said member; stop means limiting the travel of said member on each side of the keel line; said shaft extending forwardly of said supporting means; a propeller drive motor fixed to the hull forwardly of the hinge of said member and elastically engaging the forward portion of said shaft to impart both a rotary action and forward pull thereon; said shaft supporting means providing limited lateral swinging of said propeller shaft to permit the shaft to remain in the line of pull of said elastic engagement regardless of shifting of said member rear portion.

3. The combination of a boat hull; a rod having an upturned end rockably engaged with the hull to swing laterally of the hull; stop means limiting the degree of swinging of the rod; a bearing on the rear portion of the rod; a shaft extending through the bearing with a fit to permit lateral swinging of the shaft relative to the rod; a propeller on the shaft rearwardly of said bearing; and an elastic member fixed by a forward end to said hull and engaging by its rear end with the forward end of said shaft, whereby winding of the propeller will store up energy in the elastic member to drive the propeller in a reverse direction.

4. A toy boat comprising a hull; a wire having a post retained in the underside of the hull rotatable on substantially a vertical line; said wire extending from the lower end of the post externally of and along the underside of the hull to extend a distance to the stern thereof; an eye downturned from the wire at its rear end; a wire freely carried through said eye; a propeller fixed on the rear end of said last wire; a hook on the forward end of said last wire forward of said eye; and an elastic band engaged by a forward end to the underside of said hull toward the forward end thereof and engaged by its rear end over said wire hook.

5. A toy boat comprising a hull; a wire having a post retained in the underside of the hull rotatable on substantially a vertical line; said wire extending from the lower end of the post externally of and along the underside of the hull to extend a distance to the stern thereof; an eye downturned from the wire at its rear end; a wire freely carried through said eye; a propeller fixed on the rear end of said last wire; a hook on the forward end of said last wire forward of said eye; and an elastic band engaged by a forward end to the underside of said hull toward the forward end thereof and engaged by its rear end over said wire hook; said first wire portion extending from said post being inclined downwardly.

6. A toy boat comprising a hull; a wire having a post retained in the underside of the hull rotatable on substantially a vertical line; said wire extending from the lower end of the post externally of and along the underside of the hull to extend a distance to the stern thereof; an eye downturned from the wire at its rear end; a wire freely carried through said eye; a propeller fixed on the rear end of said last wire; a hook on the forward end of said last wire forward of said eye; and an elastic band engaged by a forward end to the underside of said hull toward the forward end thereof and engaged by its rear end over said wire hook; and spaced apart posts between which said first wire may swing.

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