Dec. 14, 1954 T. D. WHIDDEN 2,696,797

MANUAL PROPELLING AND GUIDING MEANS

Filed June 16, 1949

Fig. 1.

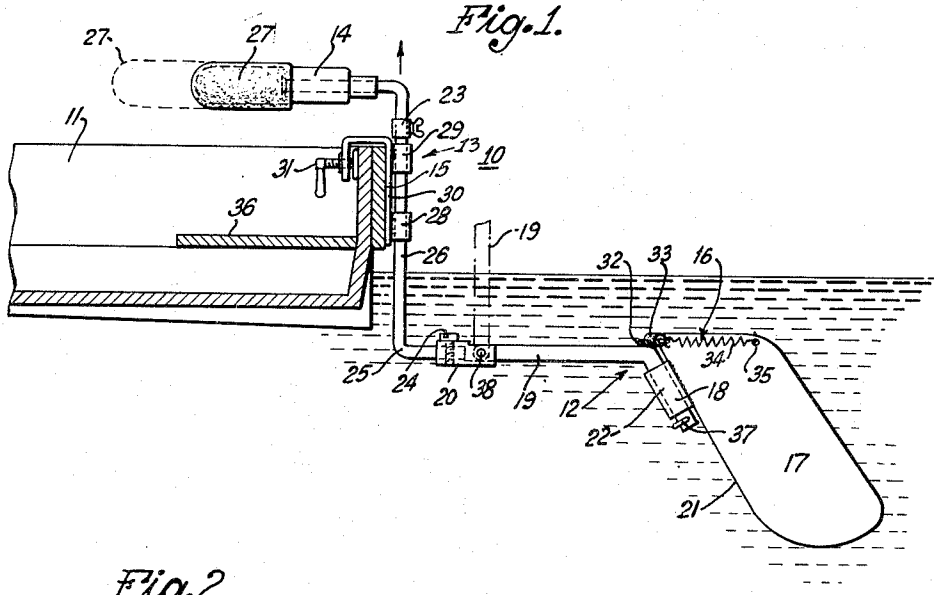


Fig. 2.

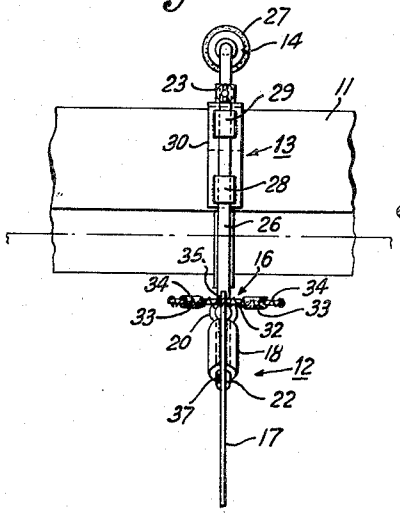


Fig. 3.

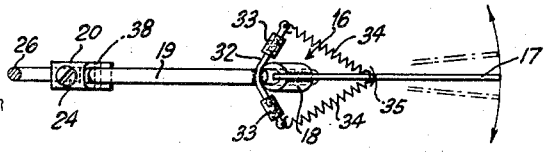
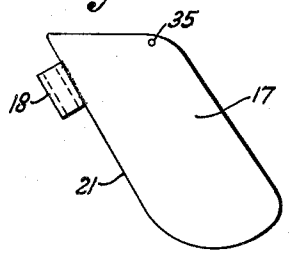


Fig. 4.



INVENTOR.
T. D. WHIDDEN

BY Hugh S. Wertz

ATTORNEY

United States Patent Office

2,696,797

Patented Dec. 14, 1954

2,696,797

MANUAL PROPELLING AND GUIDING MEANS

Theron D. Whidden, Jacksonville, Fla.

Application June 16, 1949, Serial No. 99,390

4 Claims. (Cl. 115—28)

This invention relates to propelling and guiding mechanisms for rowboats and the like and more specifically to manually operated mechanisms of this character which are generally referred to as "sneaker" blades.

It is an object of this invention to provide novel and improved means for guiding and propelling a boat or small craft by manual lever action.

It is another object of this invention to provide a boat propelling and guiding mechanism which is operable when fastened to either the side or the stern of a rowboat and which can be operated from either the sitting or standing position.

It is a further object of this invention to provide an easily adjustable device of the character described to operate at various water depths.

It is a still further object of this invention to provide a sneaker blade equipment which makes possible a greater boat maneuverability and which requires only a small amount of manual exertion.

It is still another object of this invention to provide a sneaker blade device that will operate through water which is infested with grass and lily pads by providing a blade which is self-clearing and which can be readily operated to reverse the direction of the boat.

It is a feature of the sneaker blade equipment of this invention that it may be easily dismantled for shipping or for transportation in a small package.

Still other features of the invention are: it has a telescoping and swivel lever handle to obtain additional power when needed and to provide less stroke when power is not required; the blade arrangement has no lost motion and any movement of the lever results in a thrust stroke in the water; the device, by being free of any cast metal parts, can be greatly mistreated without serious damage; the blade bar may be moved through 360 degrees, allowing sharp turns and reversals; and the device may be operated with one hand or foot while in a standing position or with one hand from a sitting position.

Other objects and features of the invention, some of them more or less related to those already set forth, will be apparent from the following description and the claims.

In accordance with an illustrative embodiment of the invention, there is provided a sneaker blade equipment comprising a blade member which has a sharp inclined fore part to cut or pass over obstructions, a horizontal shaft secured to the upper fore portion of the blade, a vertical shaft detachably secured to the horizontal shaft, a bracket member secured to the rear or side of the boat and arranged to allow turning movement of the vertical shaft within it, a handle for turning the vertical shaft, and a pair of springs attached to the blade to give power to the blade stroke.

The invention will be more readily understood by referring to the following description taken in connection with the accompanying drawings forming a part thereof, in which:

Fig. 1 shows in section a portion of the stern of a rowboat to which is attached a sneaker blade assembly in accordance with this invention;

Fig. 2 is a rear view of the arrangement of Fig. 1;

Fig. 3 is a top view of a portion of the sneaker blade assembly; and

Fig. 4 is a side view of the sneaker blade and the sleeve bearing attached to it.

Referring more particularly to the drawing, Fig. 1 shows, by way of example for purposes of illustration, a sneaker blade assembly **10** attached to the stern of a

rowboat **11** in such a manner that the boat can be easily propelled and guided thereby. While the stern of the boat has been shown for purposes of illustration, it will be readily apparent to those skilled in the art that this sneaker blade assembly can be attached to the side of a boat as well.

The sneaker blade assembly **10** in general comprises a lower portion **12**, an upper portion **13** including a handle **14**, a supporting structure **15**, and spring mechanism **16**. Each of these portions has a plurality of parts.

The lower portion **12** comprises a blade **17**, a sleeve bearing **18**, a horizontal shaft **19** and a sleeve joint **20** fixedly secured to this shaft. The fore part **21** of the blade **17** is sharp and inclined about 45 degrees. The sleeve bearing **18** is welded to the upper portion of the edge **21** permitting most of the sharp edge **21** to be free of obstructions. Because of the slope of the edge **21**, any obstruction, such as grass or lily pads, is inclined to pass under the blade, instead of hanging thereon, when the blade travels through the water. Moreover, due to the fact that the sleeve bearing **18** is at the top, it can be raised entirely out of the water, thus leaving only a sharp blade portion, which is three-fourths or more of the total blade area, in the water. The horizontal shaft **19** has a bent end portion **22** which is fastened within the sleeve bearing **18** while its other end is attached to the sleeve joint **20**. By means of the sleeve joint, the lower portion **12** of the sneaker blade assembly **10** can be readily attached to or detached from the upper portion **13** of the assembly, thus making possible ease in shipment or replacement of parts.

Because of the arrangemnet of elements **17**, **18**, **19** and **20** as shown in Fig. 1 of the drawing, a greater arc of travel for the lower portion of the blade is possible. Moreover, since 90% or more of the blade **17** is below the level of the shaft **19**, the blade can be swung through 360 degrees under the boat without increasing the length of the vertical shaft **26** of the upper portion **13** of the assembly **10**, it being merely necessary to loosen the screw on sleeve collar **23** and allow the shaft **26** to be lowered sufficiently for the horizontal shaft **19** to clear the bottom of the boat **11**.

The sleeve joint **20** is provided with a set screw **24** so that the vertical shaft **26**, which has a bend **25** therein, may be securely, but removably, attached to the horizontal shaft **19**. In addition to the vertical shaft **26**, the upper portion **13** of the assembly **10** includes the collar **23** already described, the handle **14** and the grip **27** thereon. The member **14** is a telescoping and swivel handle and the member **27** can be any suitable rubber or plastic grip therefor. By means of the telescoping action of the handle **14**, the leverage can be increased or decreased momentarily. This is a big advantage because, in reversing, the short leverage is advantageous, while in propelling through heavy grass or lily pads a long leverage is useful because it requires much less effort. The member **23** is a sleeve collar with set screw or thumb screw for raising the shaft **26** and handle **14** so that the assembly **10** can be operated from the standing position and also for raising and holding the lower portion **12** of the assembly nearly clear of the water when the boat is being operated by an outboard motor, for example, without having to take the equipment off the supporting structure **15**. It can also be used for lowering the unit to the proper depth for sharp turns and for reversing.

The upper portion **13** of the sneaker blade assembly is supported by the supporting structure **15** which comprises sleeve bearings **28** and **29** attached by any suitable means, such as by welding, to a transom bracket **30** which is preferably fabricated by welding instead of by casting in order that it can withstand more mistreatment without danger of breaking. The bracket **30** is attached either to the side or stern of the boat **11** by means of turn screw **31**.

A bent rod **32** is fastened, as by welding, to the horizontal shaft **19** so that the middle of the rod **32** is attached to the shaft **19** and its two ends are bent away from this middle (see Fig. 3). A rubber bumper block **33** is slipped over each half of the rod **32** and the ends of this rod are drilled to provide fastening means for ends of springs **34** the other ends of which are fastened to a hole **35** drilled

in the top part of blade **17**. The rubber bumpers **33** prevent a metallic click when the spring tension has been expended on a power stroke. Moreover, they make possible the adjustment of rods **32**. By bending these rods **32** (containing the bumpers **33**) away from the blade **17**, the maximum pitch is increased and the opposite effect is produced by bending these rods towards the blade. By experimentation, the best operating pitch for the particular boat can be found and the adjustment made accordingly. Because of the dual springs, one operating against another, lost motion is prevented. Furthermore, these springs hold or retain the blade assembly **17** on the shaft **19** although a pin or screw **37** can be added for this purpose also. The pitch of the blade varies according to the effort expended at the lever **14**. The springs **34** can be raised clear of the water to prevent clogging with water moss or other obstructions of this general nature.

The vertical shaft **26** can be made in a length suitable for standing operation or in a length suitable for operation from a sitting position on the seat **36**. Moving the handle **14** in an oscillating motion produces a movement of the blade **17** in the manner indicated by the arrows in Fig. 3. The springs **34** help to produce a power stroke.

On either a left or a right hand stroke and the blade is at maximum pitch or against one of the rubber bumpers **33** at the end of the stroke, the springs act to kick the blade **17** parallel to the bar and this kick or thrust is applied to drive the craft. Moreover, these springs produce the same effect as a variable pitch propeller. A light craft, once under way, would not require maximum pitch or length of stroke to maintain its forward speed and since the blade pitch is decreased, less power or effort is required at the handle **14**. The inclined blade **17**, having the sleeve bearing **22** near its top, also gives more power for effort expended because the sharp section of the blade travels a greater arc or segment of a circle than the blunt sleeve bearing **22** and the horizontal shaft **19**.

The pin joint **38** in the sleeve **20** makes possible the novel feature of knee action for the bar and blade assembly **17** and **19**. Any obstruction such as a log or root or the bottom in shallow water which might cause hanging of the device is taken care of by the pin or hinge joint **38** in sleeve **20** allowing the forward momentum of the boat to cause the inclined blade to ride up and over the obstruction and automatically return to operating position of its own weight. Another advantage of knee action is that the lower unit can be readily raised out of the water for examination or lubrication or can be tied up to the top of the shaft **26** while the motor is being operated or transported.

Obviously many changes are possible in the embodiment described without departing from the spirit of the invention, the scope of which is indicated in the claims.

What is claimed is:

1. Manual propelling and guiding mechanism for a rowboat and the like comprising a single blade member adapted to be submerged when in operation and having a sharp edge capable of cutting grass, lily pads and the like, the entire forward edge of said blade, including said sharp edge and a pivot post or bearing at the upper portion only thereof, being inclined downwardly at an angle to the vertical, a horizontal shaft having a portion inclined downwardly at an angle to the vertical to attach to said pivot post or bearing, a vertical shaft connected to the end of said horizontal shaft remote from said blade member, support mechanism adapted to be attached to said boat and in which said vertical shaft is turnable, a hinge in said horizontal shaft between the ends thereof and positioned so that said shaft and blade member can be swung upward through substantially 90 degrees to allow the blade member to be completely out of the water, without removing the vertical shaft from the support mechanism, for inspection and repair, and a handle member attached to said vertical shaft for producing turning movement of said blade member.

2. The combination of elements as in claim 1 in which said handle member is of the telescoping type for changing the leverage thereof.

3. The combination of elements as in claim 1 in further combination with spring means attached to said blade member and to said horizontal shaft for adding power to the strokes of the blade.

4. The combination of elements as in claim 1 in further combination with spring means attached to said blade member and to said horziontal shaft for adding power to the strokes of the blade, said spring means including springs and a bent rod the middle of which is attached to said horizontal shaft and the ends of which are connected by said springs to the upper rear portion of said blade member, said bent rod being equipped with rubber bumpers for contacting said blade member at the ends of its strokes.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,003,516	Sax	Sept. 19, 1911
1,317,480	Buehner	Sept. 30, 1919
1,324,397	Hobart	Dec. 9, 1919
1,704,400	Michiels	May 5, 1929
2,062,546	Wells	Dec. 1, 1936
2,097,931	Martin	Nov. 2, 1937
2,292,609	Buehler	Aug. 11, 1942

FOREIGN PATENTS

Number	Country	Date
12,509	Great Britain	1894
327,045	France	Mar. 13, 1903
502,969	France	Mar. 5, 1920
582,798	France	Oct. 20, 1924