Jan. 17, 1950 W. McCLAIN 2,495,116

TROLLING ATTACHMENT FOR MOTORBOATS

Filed June 5, 1946

Fig. 1

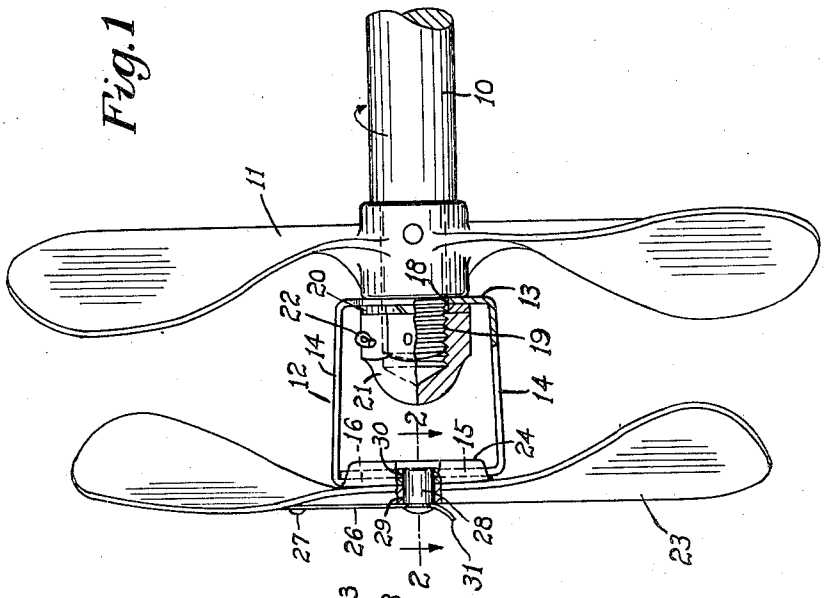


Fig. 4

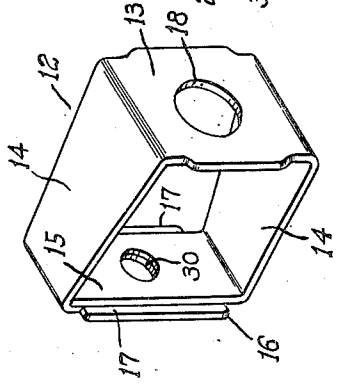


Fig. 2

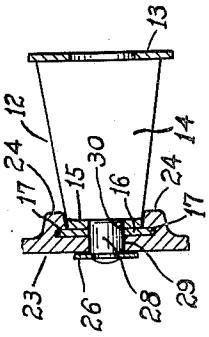
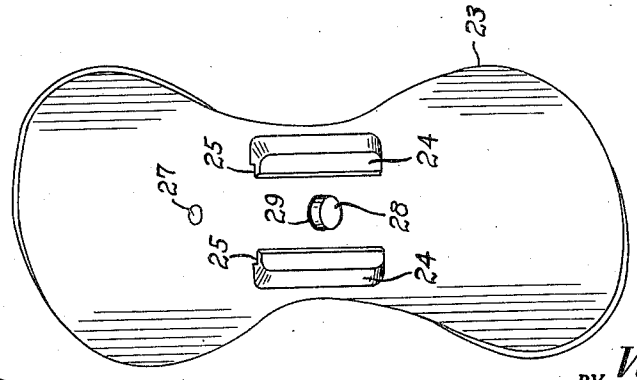


Fig. 3



INVENTOR.

BY Waite McClain

Frease and Bishop

ATTORNEYS

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TROLLING ATTACHMENT FOR MOTORBOATS

Waite McClain, Canton, Ohio

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7 Claims. (Cl. 170—135)

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The invention relates to means for retarding the movement of a motorboat to a speed suitable for trolling, and more particularly to a device adapted to be detachably connected to the free end of the propeller shaft of an outboard or other type of marine engine.

While such motors are usually so constructed that they can travel at a relatively low rate of speed, they are primarily designed for relatively high speed, and if the speed is reduced below a prescribed minimum, the slow rotation of the crankshaft causes the motor to stall.

For this reason it is not practical to retard the speed of such motors to a speed suitable for trolling, and various devices have been resorted to for retarding the speed of the boat without materially affecting the speed of the motor. Such devices usually comprise plates or discs located adjacent to the propeller, usually at the rear thereof and acting as a drag to retard the speed of the boat, but they have been more or less complicated, not convenient to attach, and liable to fouling with weeds and grass, and the object of the invention is to overcome these objections and disadvantages.

Another object is to provide a retarding device in the form of an auxiliary propeller which works reversely to the conventional propeller upon the motor.

A further object is to provide such an auxiliary propeller, which is smaller than the conventional propeller and of opposite pitch, with means for mounting it upon the propeller shaft.

A still further object of the invention is to provide an auxiliary propeller with means for quickly and easily detachably connecting it to the propeller shaft.

It is another object to provide such a propeller with means for attaching it to the conventional propeller shaft without making any change in the construction of said shaft.

A further object is to provide an auxiliary propeller of reverse pitch and smaller size than the conventional propeller.

It is another object of the invention to provide an auxiliary or retarding propeller of a design and construction which is quickly and easily applied to and detached from a conventional type of outboard motor.

A still further object is the provision of a device of this character in which a novel attaching bracket is rigidly connected to the propeller shaft and the auxiliary propeller is designed to slidably engage said bracket, spring means being provided for detachably connecting the auxiliary propeller to the bracket.

The above objects, together with others which will be apparent from the drawing and following description, or which may be later referred to, may be attained by constructing the improved retarding device in the manner hereinafter described in detail and illustrated in the accompanying drawing, in which;

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Figure 1 is a side elevation of a portion of a propeller shaft and a conventional propeller thereon, showing the improved auxiliary propeller detachably connected to said shaft, parts being broken away for the purpose of illustration;

Fig. 2 a section taken as on the line 2—2, Fig. 1, showing the manner in which the auxiliary propeller is detachably connected to the attaching bracket;

Fig. 3 a detached, perspective view of the auxiliary propeller, and

Fig. 4 a detached, perspective view of the attaching bracket.

The rear end portion of a propeller shaft is shown at 10, having a conventional propeller 11 fixed thereon in any usual and well known manner. For the purpose of the invention an attaching bracket, indicated generally at 12, is fixed upon the shaft 10 in the rear of the propeller 11.

This bracket may be made from a single sheet or strip of metal of suitable gauge, formed into generally rectangular shape, as shown in the drawing, and comprising the relatively wide front wall 13, the rearwardly tapered longitudinal walls 14 and the overlapped rear end walls 15 and 16, the latter being of greater width than the former so as to provide a pair of guide flanges 17 at opposite sides thereof.

An aperture 18 is centrally formed in the front wall 13 of the bracket to receive the reduced, threaded rear end 19 of the propeller shaft, and the bracket may be rigidly held upon the shaft as by the lock washer 20 and nut 21, a cotter pin 22 being preferably located through the nut and shaft to prevent accidental displacement of the bracket during the operation of the propeller shaft.

The auxiliary propeller, to which the invention pertains, is indicated generally at 23, and may be cast, stamped or otherwise formed of conventional shape, being of smaller size than the propeller 11 and of opposite pitch thereto, as clearly shown in Fig. 1.

For the purpose of detachably mounting the auxiliary propeller 23 upon the attaching bracket, a spaced pair of ribs 24 are formed upon the inner or front face of said propeller, at the center thereof, and have the undercut, guide grooves 25 formed therein for slidably receiving the guide flanges 17 of the bracket, as seen in Fig. 2.

A leaf spring 26 is fixed at one end to the outer face of the auxiliary propeller 23, as by the rivet 27, and a stud 28 is fixed upon the other end of the spring and located through the central aperture 29 in the auxiliary propeller and adapted to be received in the opening 30 in the rear end wall 15—16 of the attaching bracket

when the auxiliary propeller is detachably mounted thereon as shown in Figs. 1 and 2.

When it is desired to operate the boat at slow speed for trolling, the motor is stopped so that the auxiliary propeller may be connected to the attaching bracket. This is quickly and easily accomplished by pulling the curved, free end 31 of the spring outward so as to withdraw the stud 28 through the aperture 29 of the propeller and then slidably engaging the grooves 25 of the auxiliary propeller over the guide flanges 17 of the bracket, after which the spring is released permitting it to move the stud 28 through the openings 29 and 30 in the propeller and bracket respectively.

On an outboard motor this will preferably be done while the motor is swung to elevate its propeller above the water. Thus the auxiliary or retarding propeller is held firmly in position upon the propeller shaft, and being of opposite pitch and of smaller size than the conventional propeller it will work against the same causing the boat to be propelled forward at a slow speed suitable for trolling.

In order to remove the auxiliary propeller it is only necessary to pull outward upon the free end 31 of the spring 26 so as to withdraw the stud 28 from the opening 30 in the bracket, when the grooved ribs 24 of the propeller may be slidably disengaged from the guide flanges 17 of the bracket.

The auxiliary propeller may then be placed in a tackle box or other storage place and the motor operated to propel the boat in conventional manner. With this construction the auxiliary or retarding propeller is quickly and easily applied to and removed from the propeller shaft of an outboard or other marine motor, it is held firmly in place when applied, and it operates satisfactorily to retard the speed of the boat.

I claim:

1. In combination with a propeller shaft and a propeller thereon, an attaching bracket fixed upon the end of said shaft and having an opening therein, guide flanges on the bracket on opposite sides of said opening, an auxiliary propeller of opposite pitch to said propeller having guide grooves to receive said guide flanges and having a central opening therein, and a spring loaded stud upon the auxiliary propeller for engagement in said openings.

2. In combination with a propeller shaft and a propeller thereon, an attaching bracket fixed upon the end of said shaft and having an opening therein, guide flanges on the bracket on opposite sides of said opening, an auxiliary propeller of opposite pitch and smaller size than said propeller having guide grooves to receive said guide flanges and having a central opening therein, and a spring loaded stud upon the auxiliary propeller for engagement in said openings.

3. In combination with a propeller shaft and a propeller thereon, a rectangular attaching bracket having one end fixed upon the shaft and having an opening in the other end, guide flanges on the bracket on opposite sides of said opening, an auxiliary propeller of opposite pitch to said propeller having guide grooves to receive said guide flanges and having a central opening therein, and a spring loaded stud upon the auxiliary propeller for engagement in said openings.

4. A trolling attachment for a motorboat having a propeller shaft and a propeller thereon, said trolling attachment comprising a rectangular attaching bracket, means for fixing one end of the bracket upon the shaft, there being an opening in the other end of the bracket, guide flanges on the bracket on opposite sides of said opening, an auxiliary propeller of opposite pitch and smaller size than said propeller having guide grooves to receive said guide flanges and having a central opening therein, and a spring loaded stud upon the auxiliary propeller for engagement in said openings.

5. A trolling attachment for a motorboat having a propeller shaft and a propeller thereon, said trolling attachment comprising an attaching bracket having an opening therein, means for fixing the attaching bracket upon one end of said shaft, guide flanges on the bracket, an auxiliary propeller of opposite pitch to said propeller and having guide grooves longitudinal with respect to said auxiliary propeller to slidably receive said guide flanges and having a central opening therein, and a stud for engagement in said openings for detachably attaching the auxiliary propeller to the bracket.

6. A trolling attachment for a motorboat having a propeller shaft and a propeller thereon, said trolling attachment comprising an attaching bracket having an opening therein, means for fixing the attaching bracket upon one end of said shaft, guide flanges on the bracket, an auxiliary propeller of opposite pitch and smaller size than said propeller and having guide grooves longitudinal with respect to said auxiliary propeller to slidably receive said guide flanges and having a central opening therein, and a stud for engagement in said openings for detachably attaching the auxiliary propeller to the bracket.

7. A trolling attachment for a motorboat having a propeller shaft and a propeller thereon, said trolling attachment comprising an attaching bracket having an opening therein, means for fixing the attaching bracket upon one end of said shaft, guide flanges on the bracket on opposite sides of said opening, an auxiliary propeller of opposite pitch to said propeller having guide grooves to receive said guide flanges and having a central opening therein, a leaf spring fixed at one end to said auxiliary propeller and a stud upon the leaf spring for engagement in said openings.

WAITE McCLAIN.

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