Dec. 22, 1942. E. MESSINGER 2,306,072

POWER BOAT

Filed June 2, 1941

Fig. 1

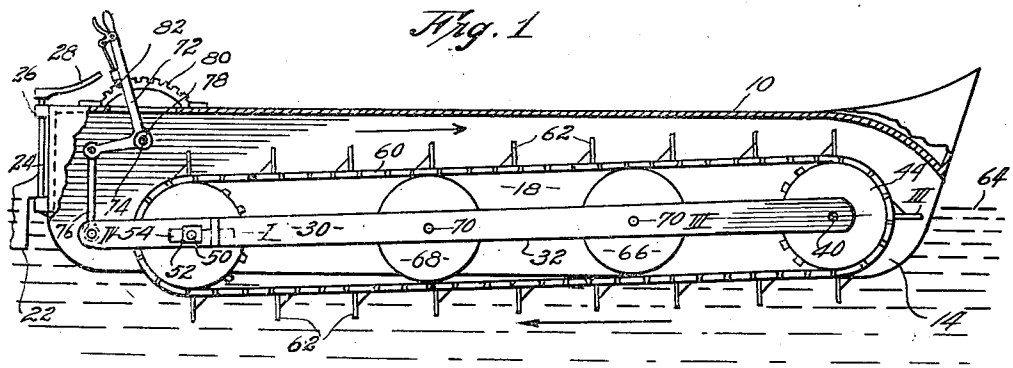


Fig. 2

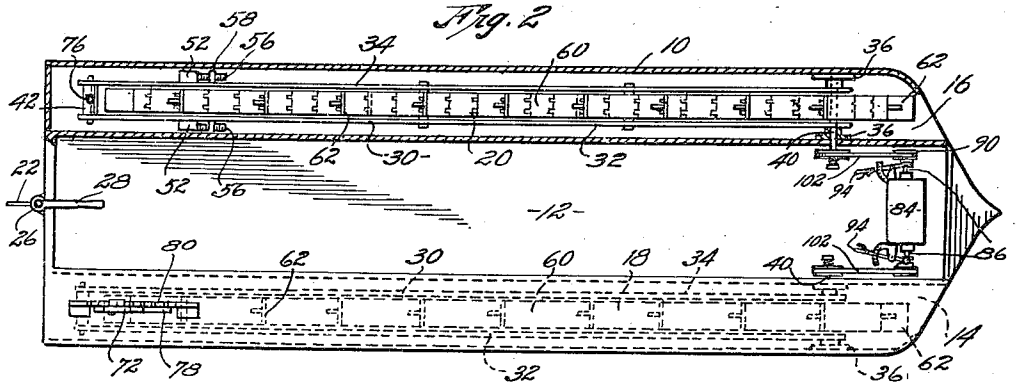


Fig. 4

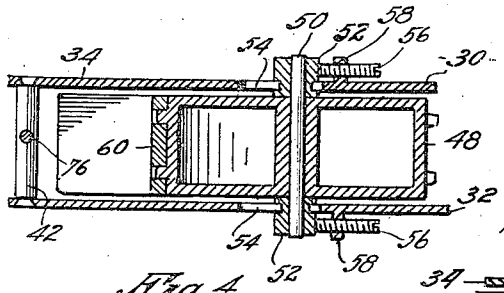
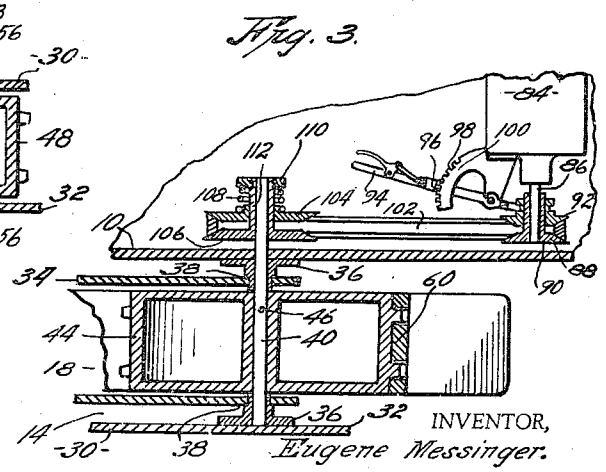


Fig. 3.



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POWER BOAT

Eugene Messinger, Kansas City, Kans.

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1 Claim. (Cl. 115—64)

This invention relates to improvements in power boats and particularly to a boat propelling mechanism whereby the speed and direction of travel of the boat may be controlled.

The principal object of the present invention is the provision of a boat provided with a driving mechanism comprising a pair of spaced apart endless belt driving members which are adjustably mounted to control the speed and direction of travel of said boat.

Another object of the present invention is the provision of a boat propelling mechanism comprising a pair of spaced apart endless chain driving members having means whereby the relative speed of travel of said endless chain driving members is varied.

Other objects of the present invention is the provision of a boat propelling means which is simple in construction, easy to operate, and adapted for use of various types of boats.

With these objects, in view, reference will now be had to the drawing wherein:

Figure 1 is the side elevation partly broken away of a boat showing the preferred embodiment of the invention.

Fig. 2 is a plan view of the boat partly broken away to disclose one of the driving members.

Fig. 3 is an enlarged fragmentary sectional view taken on line III—III of Fig. 1.

Fig. 4 is an enlarged sectional view taken on line IV—IV of Fig. 1.

Throughout the several views like reference characters designate similar parts and the numeral 10 is a boat body or hull having a central compartment 12 and longitudinally disposed side channels 14 and 16 which extend the full length of the boat to receive the propelling members 18 and 20, respectively.

The stern of the boat is provided with a rudder 22 which is pivoted by means of the vertically disposed rod 24 mounted in bearings 26. A handle 28 is provided for operation of said rudder.

Driving members 18 and 20 are substantially identical in construction and each comprises a frame 30 made up of two parallel bars 32 and 34 which are pivoted at their forward ends by means of bearing brackets 36 to the walls of the channels 14 and 16.

The bearing brackets 36 are offset at 38 so as to properly position bars 32 and 34 and to prevent their accidental movement to contact the side walls of the channels. These bearings 36 are hollow and also serve as bearings for an operating shaft 40 which extends through and beyond the inner wall of channel 14. The free end of parallel bars 32 and 34 are secured in spaced relation by means of a spacing bar 42 which is securely fastened thereto.

A drum driving gear 44 is mounted on shaft 40 and is secured by pin 46 for rotation therewith. A toothed drum 48 is mounted for free rotation on shaft 50 which in turn is mounted in slidable bearing blocks 52 which are slidably positioned in slots 54 formed in bars 32 and 34.

Adjusting screws 56, threaded through lugs 58, carried by the bars 32 and 34, rest against the respective bearings 52 so that as screws 56 are rotated the drum 48 will be moved longitudinally of parallel bars 32 and 34.

An endless chain 60 having propelling blades 62 is adapted to operatively encompass driving gear 44 and toothed drum 48 to extend substantially the full length of the boat. It will be noted that the propelling members are so positioned in their respective channels that the upper propelling blades 62 are disposed above the water surface 64 while the lower propeller blades are immersed in the water.

When the boat is driven forwardly the propelling blades move in the direction indicated by the arrows. In order to maintain the endless chain sections intermediate the end carrying drums, intermediate drums 66 and 68, are provided in substantially equally spaced relation between drum 44 and drum 48. These drums are mounted on transverse shaft 70 which are mounted in parallel bars 32 and 34, as shown.

A bell crank lever 72, mounted for oscillation on shaft 74, carried by body member 10, is interconnected with the free end of frame 30 by connecting link 76. The upper end of bell crank lever 72 extends through a slot 78 formed through body frame 10 and is in operative relation with a notched segment 80. A hand operated pawl 82 carried by lever 72 is adapted to engage the notched segment 80 to maintain the free end of frame 30 in any desired position.

The driving mechanism for the propelling members comprises a motor 84 having a drive shaft 86 to which is securely attached one side 88 of an adjustable drive pulley 90. This pulley is of the V-belt type and has a slidable section 92 which can be moved toward and from the member 88 to vary the effective driving diameter of the drive pulley 90.

Slidable section 92 is adjusted by means of the hand operated lever 94 having a detent 96 which engages notches 98 formed in segment 100.

Driving pulley 90 is in driving relation with the

adjustable driven pulley 102 which is mounted on shaft 40. This driven pulley is of the split type and the two operating face members 104 and 106 are urged together by means of a compression spring 108 which rests against a slidably mounted face member 104 and a nut 110 carried on the outer end of hub 112 which is integral with face member 106.

It will be observed that as the effective diameter of the drive pulley 90 is varied, driven pulley 102 will be automatically adjusted to accommodate the belt and that there will always be a tension on the belt due to the urge of compression spring 108.

By referring to Figure 2, it will be observed that the boat is symmetrical in construction and so balanced that when the propelling members are driven at the same speed the boat will have a tendency to move forwardly in a straight line; however should one of the propelling members be driven at a higher rate of speed than the other, the boat would have a tendency to move in a curved line at a radius dependent upon the differential of speed.

By changing the vertical position of the free ends of the propeller members, the driving effect of the blades 62 can be regulated. As the free end of frame 30 is lower, the driving effect of the propellers 62 will be increased. It is therefore apparent that a turning effect can be produced while both propelling members are being driven at the same rate of speed by simply varying the differential of the depth of the two propellers.

Another functioning of the propelling structures is the changing of the speed of travel of the boat without changing the speed of the engine by simply operating levers 72 to vary the depth of travel of the propelling blades.

While but a simple adaptation of the invention is shown, it is quite apparent that this same general structure might be utilized on various types of boats. Furthermore, in long boats it might be possible to utilize a plurality of propelling members at each side of the boat.

Since various changes might be made in the construction without departing from the spirit of the invention, it is desired to be limited only by the scope of the appended claim.

Having thus described the invention what I claim as new and desire to be secured by Letters Patent is:

A boat of the character described having a longitudinally disposed channel extending upwardly from the bottom along opposite sides of the boat, an endless chain propeller member pivotally mounted at its forward end in each of said channels with the lower portion thereof disposed below the bottom of the boat, manually adjustable means to support the rear end of said endless chain propellers in any of several vertical positions, a constant speed driving motor, driving means including adjustable pulleys interposed between said motor and each of said endless chain propellers, manually controlled means operable to regulate said driving means to vary the relative speeds of said motor and said endless chain propellers whereby the boat is propelled and steered, and adjustable means to maintain said endless chain propeller members in a taut position.

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