Feb. 11, 1969 T. R. SPECHT 3,426,723

MECHANISM FOR RAISING AND LOWERING OUTBOARD MOTORS

Filed Aug. 17, 1966 Sheet 1 of 2

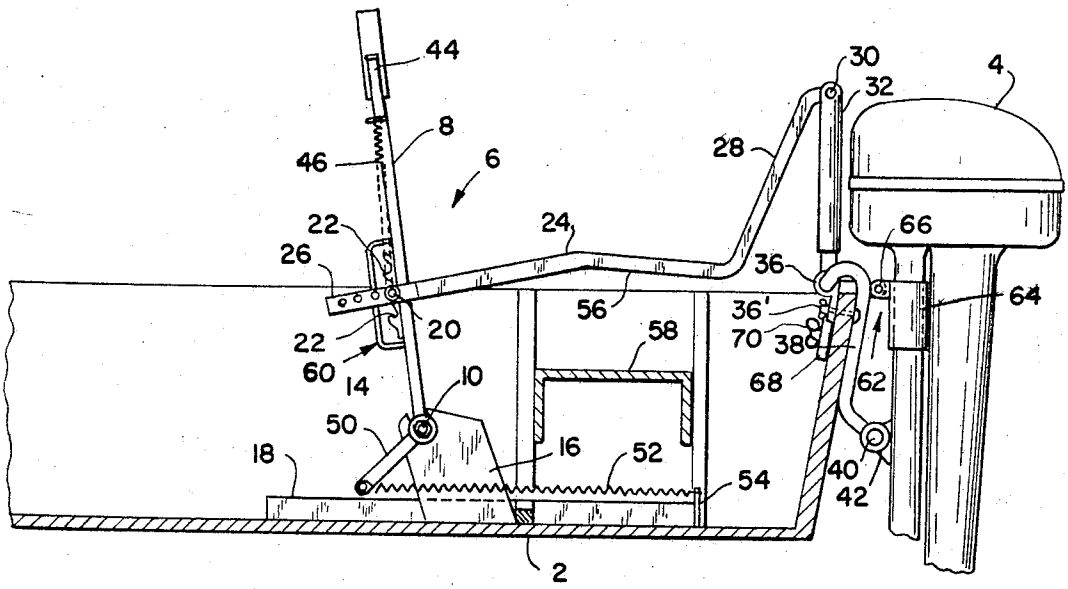


Fig. 1.

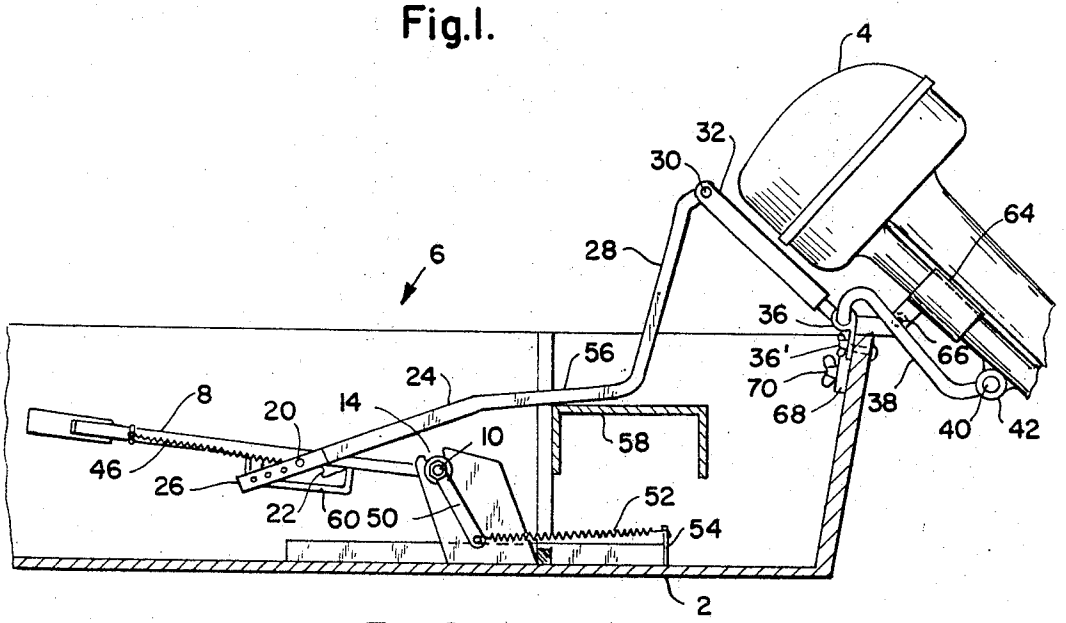


Fig. 2

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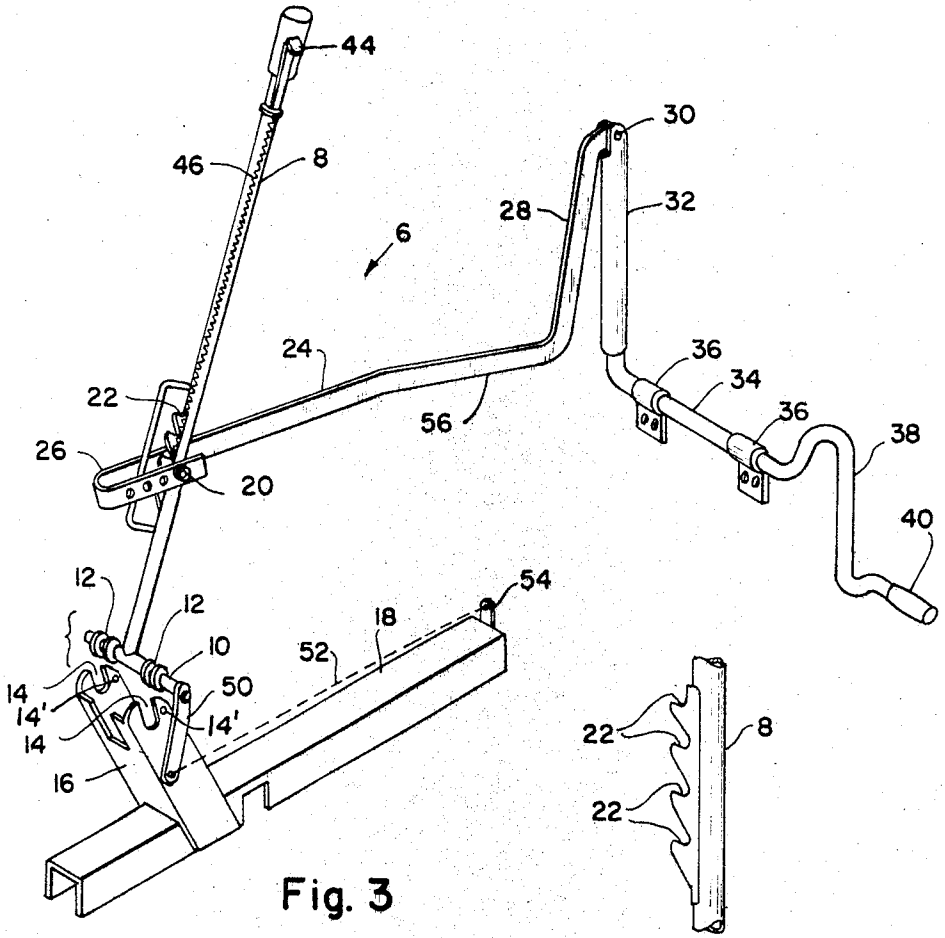


Fig. 3

Fig. 4.

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United States Patent Office 3,426,723
Patented Feb. 11, 1969

3,426,723

MECHANISM FOR RAISING AND LOWERING OUTBOARD MOTORS

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Filed Aug. 17, 1966, Ser. No. 573,090
U.S. Cl. 115—41 1 Claim
Int. Cl. B63h 21/26

ABSTRACT OF THE DISCLOSURE

A mechanism for tiltably raising and lowering an outboard motor by pivotally mounting it on the rear wall of a boat and including an operating lever with an intermediate rack for selective engagement with the end of a lever system. The operating lever is counterbalanced by a spring to facilitate pivoting of the outboard motor and to enable the operating lever to be moved substantially parallel to the floor of the boat when the motor is tiltably lifted.

This invention relates to a mechanism for raising and lowering outboard motors.

Although various mechanisms for tiltably raising and lowering outboard motors have been devised in the past, these have had the outstanding disadvantage of requiring considerable manual effort for operation, or when power amplifying units such as hydraulic cylinders have been used, these have added complexity and considerable expense to the system.

An object of my invention is to provide a novel mechanism for tiltably raising and lowering outboard motors, which mechanism is devoid of the abovenamed disadvantages and which involve a minimum number of simple parts, yet which requires very small physical effort to raise and lower the outboard motor, also which permits use of the boat in very shallow water.

Other objects and advantages will become more apparent from a study of the following description taken with the accompanying drawings wherein:

FIG. 1 is a fragmentary, vertical cross-sectional view of the rear portion of the boat showing my novel mechanism for lifting and lowering an outboard motor, and illustrated in the lowered position;

FIG. 2 is a view similar to FIG. 1, except that it shows the mechanism in the position when the outboard motor is tiltably lifted;

FIG. 3 is a perspective view showing the operating lever removed from its pivotal socket for purposes of clairty of illustration; and

FIG. 4 is an enlarged, fragmentary side view of ratchet 22 in FIGS. 1, 2 and 3.

Referring more particularly to FIGS. 1 and 2, numeral 2 denotes a fragmentary, rear portion of a boat on which there is tiltably mounted, on the rear end thereof, an outboard motor 4 of any conventional construction. Numeral 6 generally denotes a lever operated mechanism for mechanically and tiltably lowering and lifting the outboard motor from the position shown in FIG. 1 to that shown in FIG. 2 and vice-versa.

A lever 8 is pivotally mounted on a pivot pin 10 from which extends lever arm 50 connected by return spring 52 to an anchor 54 secured to channel 18 rigidly connected to the bottom of the boat. Pivot pin 10 has bushings 12 which fit into sockets 14 formed in the base plate 16 rigidly fixed to channel 18. Pivot pin 20 extending across link 26 of lever 24 and is adapted to be selectively moved into different detents or teeth of rack 22. The rear portion 56 of lever 24 has an upstanding end portion 28 which is pivoted at 30 to an arm 32 of a crank arm 34 pivotally mounted in sleeves 36 which are stationarily mounted on the back end of the boat by thumb nuts 36'. The crank arm 34 terminates in a hard rubber bushing or roller 42 journalled on the end 40 of crank arm 34 for contacting and pushing against the housing of outboard motor 4 when the handle is moved from a position slightly clockwise of that shown in FIG. 1 to the folded position shown in FIG. 2. The outboard motor housing 4 has a sleeve 64 for pivoting the housing about pivot 66, the stationary part of which is clamped at 36' to the boat. When the crank arm 38 is resting on the rear of the boat and lever 8 is folded back onto the seat, bushing 40 drops away from motor 4 about 1 inch.

Alongside lever 8 extends a return spring 46.

Attached to the central portion of lever 8 is a guide 60.

In operation, lever 8 is manually pulled toward the rear of the boat just enough to disengage pin 20 from the notch of rack 22 and the return spring 46, which is attached to link 26 at pin 20 and returns link 26 to the top notch of rack 22.

To shift link 26 to the lower notch of rack 22 so as to get more power amplification for lifting the outboard motor 4, lever 8 is pulled back until the pin 20 rides on guide 60. The lever 8 is continued to be pulled back until the notch selected is reached. Then the thumb is placed on the plunger rod 44 which will hold link 26 in position until lever 8 is pushed forwardly dropping pin 20 into the selected notch of rack 22.

Referring to FIG. 3, by removing the two retaining cotter pins from holes 14' and disconnecting the springs from arm 50 and removing the four thumb nuts from brackets 36, the whole upper rigging can be removed from the boat in about two minutes.

When the outboard motor is in operation, lever 8 can be folded back on the seat which removes all obstructions above the side of the boat.

Thus it will be seen that I have provided an efficient mechanism of relatively simple construction which is manually operated with readily changeable power amplification to enable easy lifting and lowering of an outboard motor without the necessity of hydraulic or other complicated and expensive power amplifying units; and wherein the mechanism may be folded onto the seat of the boat out of the way to prevent it from being an obstruction during operation of the outboard motor; furthermore, I have provided a mechanism which can be easily installed on an ordinary boat and which can be easily dismantled in the matter of about 2 minutes; furthermore, I have provided a simply operated mechanism which promotes frequent use of the lever-operated mechanism whereby motoring may be done in extremely shallow waters not heretofore possible without great physical effort.

I claim:

1. A mechanism for tiltably raising and lowering an outboard motor comprising means for pivotally mounting the outboard motor on the rear wall of a boat, an operating lever pivotally mounted on a frame secured to the bottom portion of said boat, said lever having an intermediate rack, said means including a link having an end portion selectively engageable with one of the teeth of said rack and the other end portion connected to said out-

board motor for varying the power amplification transmitted from said operating lever to said outboard motor, a lever arm extending from the pivot of said operating lever, and a spring connecting said arm to a portion of said frame for counterbalancing the weight of said motor, said operating lever being tiltable to a position adjacent to and substantially parallel to the floor of said boat when the motor is in the fully raised position.

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TRYGVE M. BLIX, *Primary Examiner.*