June 12, 1956 H. R. AMICK 2,749,872

FOOT STEERING APPARATUS FOR OUTBOARD MOTOR BOATS

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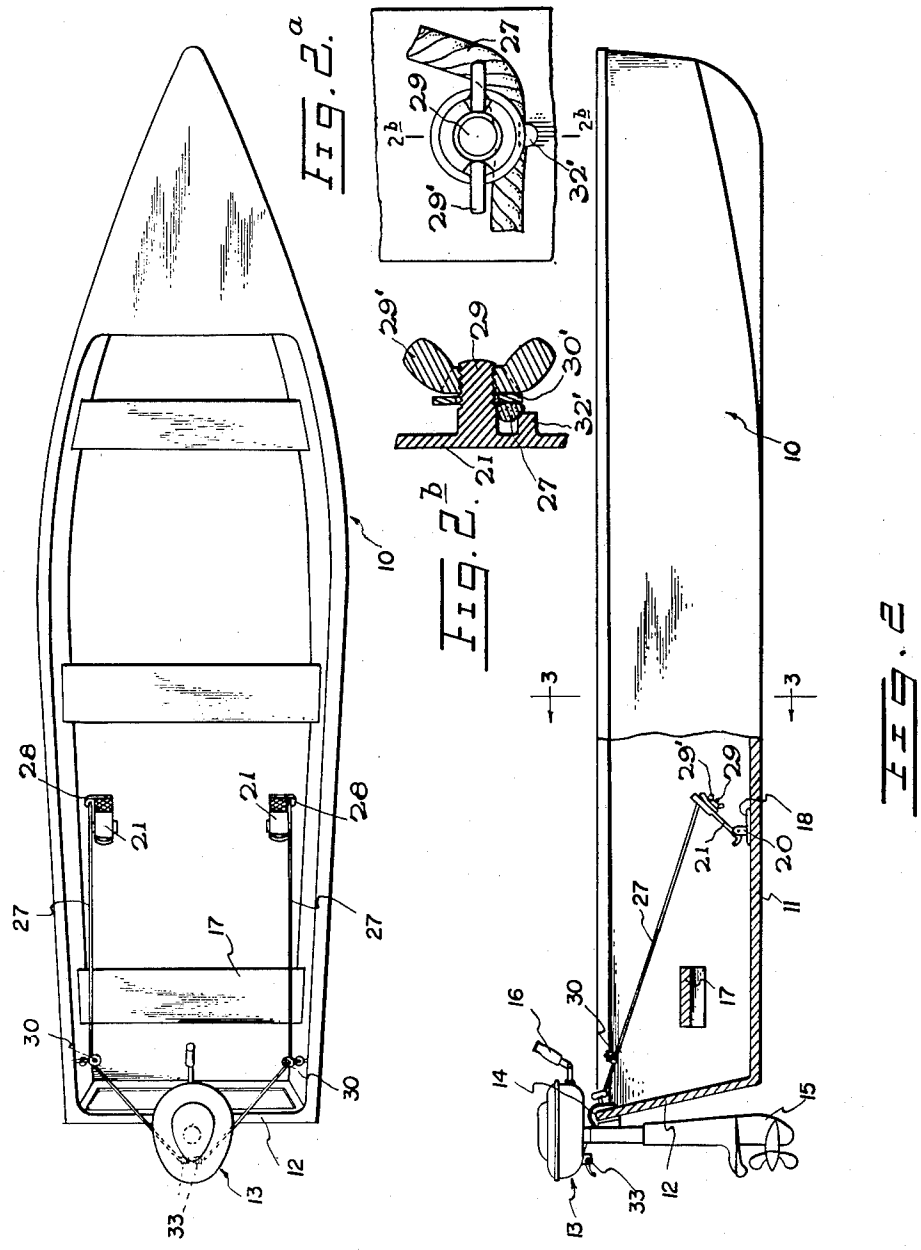


Fig. 1.

Fig. 2.

Fig. 2a

Fig. 2b

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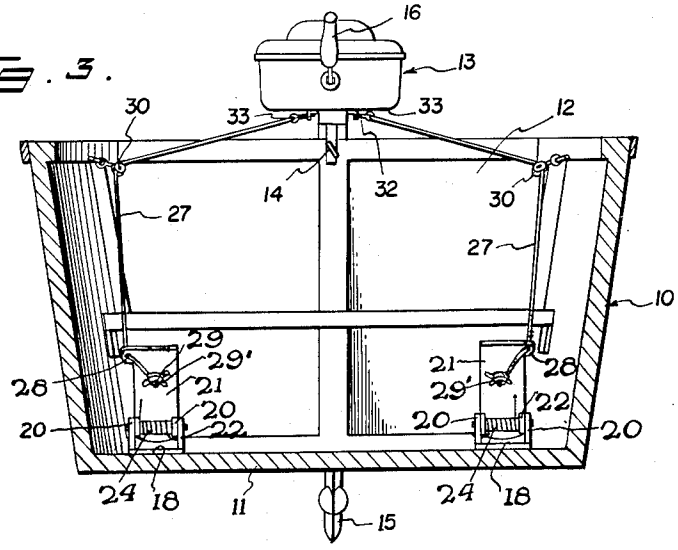
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FOOT STEERING APPARATUS FOR OUTBOARD MOTOR BOATS

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Fig. 3.



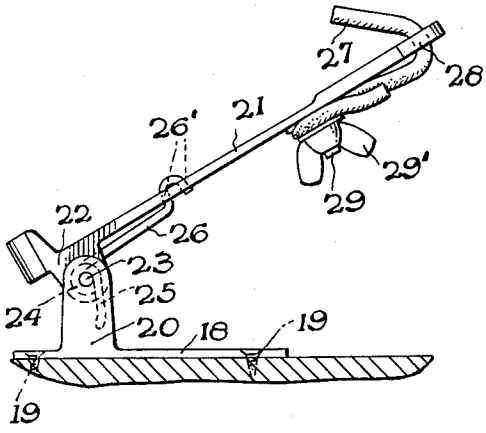


Fig. 4.

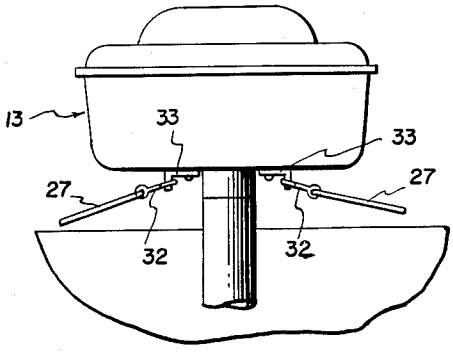


Fig. 5.

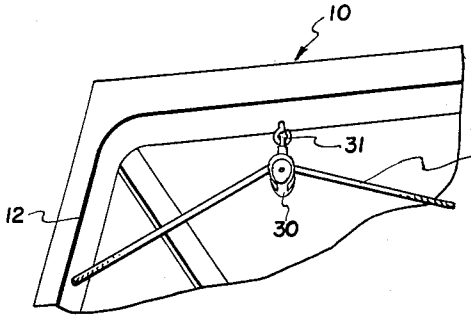


Fig. 6.

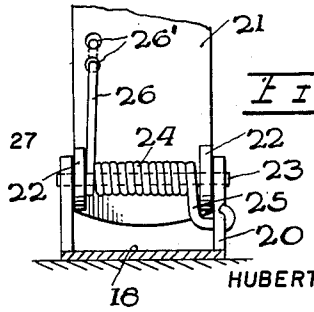


Fig. 7.

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FOOT STEERING APPARATUS FOR OUTBOARD MOTOR BOATS

Hubert R. Amick, West Columbia, S. C.

Application August 2, 1954, Serial No. 447,259

1 Claim. (Cl. 114—153)

My invention relates to foot steering apparatus for outboard motor boats and the like.

The primary object of the invention is to provide apparatus which will enable the operator of an outboard motor boat to steer it with his feet, thereby leaving him free to use both hand in fishing.

A further important object of the invention is to provide foot steering apparatus of the above-mentioned character which is highly simplified in construction, cheap to manufacture, and very easy to install upon substantially any outboard motor boat.

Another object is to provide means for keeping the steering cable or flexible element taut, or under tension, at all times.

Still another object of the invention is to provide foot steering apparatus for outboard motor boats, arranged so that the operator may sit directly in front of the motor within easy reach of the throttle lever, and enabling the operator to face forwardly in a comfortable position, once the throttle lever has been adjusted to the desired position for cruising while fishing.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings, forming a part of this application, and in which like numerals are employed to designate like parts throughout the same,

Figure 1 is a plan view of an outboard motor boat equipped with the foot steering apparatus embodying the present invention,

Figure 1 is a plan view of an outboard motor boat equipped with the foot steering apparatus embodying the present invention,

Figure 2 is a side elevation of the same, partly in section,

Figure 2*a* is a fragmentary front elevation of one of the pedals, showing the rope clamping device,

Figure 2*b* is a vertical section taken on line 2*b*—2*b* of Figure 2*a*,

Figure 3 is a transverse section taken on line 3—3 of Figure 1,

Figure 4 is a side elevation of one of the pedals and associated elements,

Figure 5 is a fragmentary rear elevation of the outboard motor and steering cable attaching means,

Figure 6 is a fragmentary perspective view of the steering cable and associated elements, and,

Figure 7 is a front elevation of the steering pedal shown in Figure 4, parts broken away.

In the drawings, where for the purpose of illustration is shown a preferred embodiment of the invention, the numeral **10** designates generally a pleasure or fishing boat of conventional construction and having a bottom **11** and transom **12**. A conventional outboard motor **13** is secured in upright position to the gunwale **12** by means of the usual clamping device **14**, as shown. The outboard motor **13** has a pivoted or swivelled connection with the stationary clamping device **14**, so that it may swing about its vertical axis to effect the steering of the boat by means

of the usual rudder extension **15**. The usual steering handle or tiller **16** is provided at the forward side of the outboard motor **13**, for use in pivoting the outboard motor about its vertical axis.

With the apparatus of the present invention, the operator sitting upon the rear seat **17** of the boat is enabled to steer the boat with his feet, and it is unnecessary for the operator to employ the tiller **16** for steering. Hence, the operator may have both hands free for fishing and the like, and may face forwardly in the boat while steering with his feet.

The foot steering apparatus proper comprises a pair of flat pedal mounting plates **18**, rigidly secured to the boat bottom **11** a substantial distance forwardly of the rear seat **17** and near the sides of the boat, as shown. The exact location of the pedal mounting plates **18** is determined in accordance with the comfort requirements of the particular operator, and the plates **18** may be rigidly secured to the boat bottom by means of suitable screws **19**, or the like.

Each pedal mounting plate **18** is preferably provided near its rear end with a pair of upstanding apertured extensions or lugs **20**, rigidly secured thereto in laterally spaced relation. A vertically swingable foot steering pedal **21** is provided upon each pedal mounting plate **18**, with its rear end positioned between the pair of apertured lugs **20**. The pedal **21** is provided with depending apertured lugs **22**, integral therewith, and the lugs **22** are arranged between the lugs **20**, and the two sets of lugs are pivotally connected by a pintle **23**, so that the pedal **21** can swing vertically. A torsional coil spring **24** is mounted upon each pintle **23**, and has an end portion **25** passing through an opening in one lug **20**, and an end portion **26** engaging within openings **26'**, formed in the pedal **21**. It is thus seen that one end portion **25** is anchored to the lug **20** while its opposite end portion **26** is anchored to the pedal **21**. The coil springs **24** are tensioned to swing the pedals **21** downwardly and forwardly.

Flexible steering elements, ropes or cables **27** of equal length have their forward ends extending through apertured knuckles **28**, formed upon the pedals **21**. Formed integral with each pedal **21**, and depending below the same, is a screw-threaded bolt **29**, carrying a winged nut **29'** and a washer **30'** is carried by the bolt **29** beneath the winged nut. A lug **32'** is formed integral with the rear face of each pedal **21**, and is arranged near and spaced from the bolt **29**, and beneath this bolt. The flexible element is passed beneath the washer **30'** and is arranged between the bolt **29** and lug **32'**, and is clamped to the bolt and lug, by the washer, when the winged nut is screwed up. It is obvious that the flexible element **27** may be adjusted with respect to the pedal **21**, and clamped thereto in the selected adjusted position.

Each steering cable **27** extends longitudinally rearwardly and upwardly from its pedal **21**, Figures 1 and 2, and each cable is trained about a pulley or sheave **30**, arranged near the top of the boat **10**, and near and forwardly of the transom **12**. Each sleeve **30** has a swivelled connection with an eye-bolt or screw **31**, rigidly anchored to the adjacent side of the boat near and forwardly of the transom **12**. The sheaves **30** hold the longitudinal portions of the cables **27** generally parallel to the sides of the boat and away from interference with the operator. After passing about the sheaves **30**, the steering cables **27** extend further rearwardly, in converging relation toward the rear side of the outboard motor **13** and over the top of the transom **12**.

The rear ends of the steering cables **27** have suitable hooks **32** secured thereto, and these hooks **32** are engageable within openings formed in adaptors or brackets **33**, in turn suitably rigidly secured to the lower side of the

outboard motor 13, near the rear of the same. The brackets 33 are preferably spaced rearwardly of the vertical axis of rotation of the outboard motor a substantial distance, such as three inches, so that the steering cables 27 may effectively swing the outboard motor upon its pivot in opposite directions for a maximum amount.

The torsional springs 24, in assembly, are constantly under tension for urging the pedals 21 forwardly and downwardly. The cables 27 will resist the action of the springs 24, and the cables are held taut and free of slack at all times. Each cable may have its length adjusted with respect to the associated pedal 21 by means of the winged nut 29' and associated elements. With this arrangement, the desired tension in the cables is provided, and the apparatus adjusted to normally hold the outboard motor 13 in the neutral position shown in the drawings when the feet of the operator are free of the pedals 21. Since the cables 27 have no slack, there is no likelihood of these cables becoming entangled with the legs or feet of the operator, and when the feet are removed from the pedals, the outboard motor 13 will always return automatically to the neutral position for steering the boat forwardly in a straight line, due to the action of the springs 24.

In operation, the operator may sit upon the rear seat 17 and face forwardly with his feet upon the pedals 21. By depressing either pedal 21, the boat may be steered to the right or to the left, in a degree desired by the operator. Both hands of the operator may be free at all times for fishing, and it is unnecessary to use the tiller 16 for steering. If, however, it is desired to steer the boat by hand, the tiller may be employed for this, independently of my foot steering apparatus, which apparatus will not interfere in any way with the hand-steering of the boat in the conventional manner. Even during hand steering, the apparatus including the springs 24, will serve to return the outboard motor 13 to the neutral position whenever the tiller 16 is released.

It is to be understood that the form of the invention herewith shown and described is to be taken as a preferred embodiment of the same, and that various changes in the shape, size and arrangement of parts, may be resorted to, without departing from the spirit of the invention or the scope of the subjoined claim.

Having thus described my invention, I claim:

Foot steering apparatus for an outboard motor boat having an outboard motor mounted thereon to turn upon a vertical axis comprising a pair of mounting plates secured to the bottom of the boat in spaced apart relation a substantial distance forwardly of the outboard motor, a pair of spaced upstanding apertured extensions secured to each mounting plate, horizontal pintles engaging within the apertures of said extensions and spaced above said mounting plates, vertically swingable foot pedals having their rear ends pivotally mounted upon said pintles and extending forwardly of the pintles and extensions, said foot pedals being normally inclined upwardly from their rear ends forwardly and provided intermediate their ends and forwardly of the pintles with pairs of closely spaced openings, a torsional coil spring mounted upon each pintle between said upstanding extensions and having an end extension secured to one of said upstanding extensions, each spring provided at its other end with a forwardly extending arm underlying the foot pedal forwardly of the pintle, each arm terminating at its forward end in a hook, said hook of each arm engaging upwardly and downwardly through one pair of the openings in the foot pedals intermediate their ends, whereby only the top of each hook projects slightly above the upper face of each foot pedal, the springs being tensioned to normally urge the forward ends of the foot pedals downwardly, a pair of flexible elements having corresponding ends secured to the outboard motor on opposite sides of its vertical axis of rotation, each foot pedal provided near its forward end with an opening receiving the forward end portion of one of said flexible elements, adjustable means carried by the bottom of each foot pedal near the last-named openings for clampingly securing the forward ends of the flexible elements against the bottoms of the foot pedals, and a pair of guide elements engaging the flexible elements between the foot pedals and outboard motor for maintaining the flexible elements spaced apart and free from interference with the operator of the boat.

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