

Feb. 27, 1951

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2,543,553

STEERING DEVICE FOR OUTBOARD MOTORS

Filed April 7, 1947

2 Sheets-Sheet 1

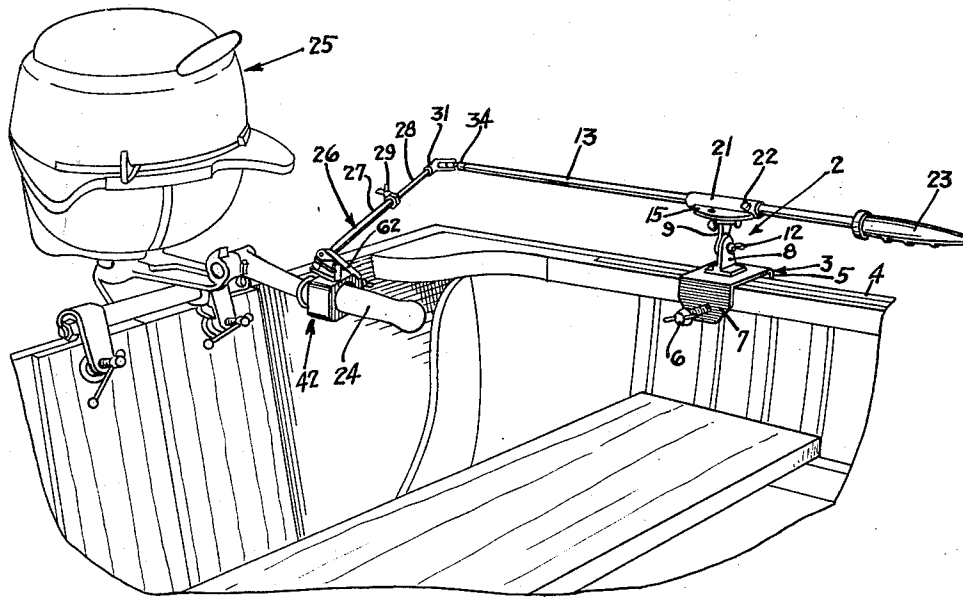


FIG. 1

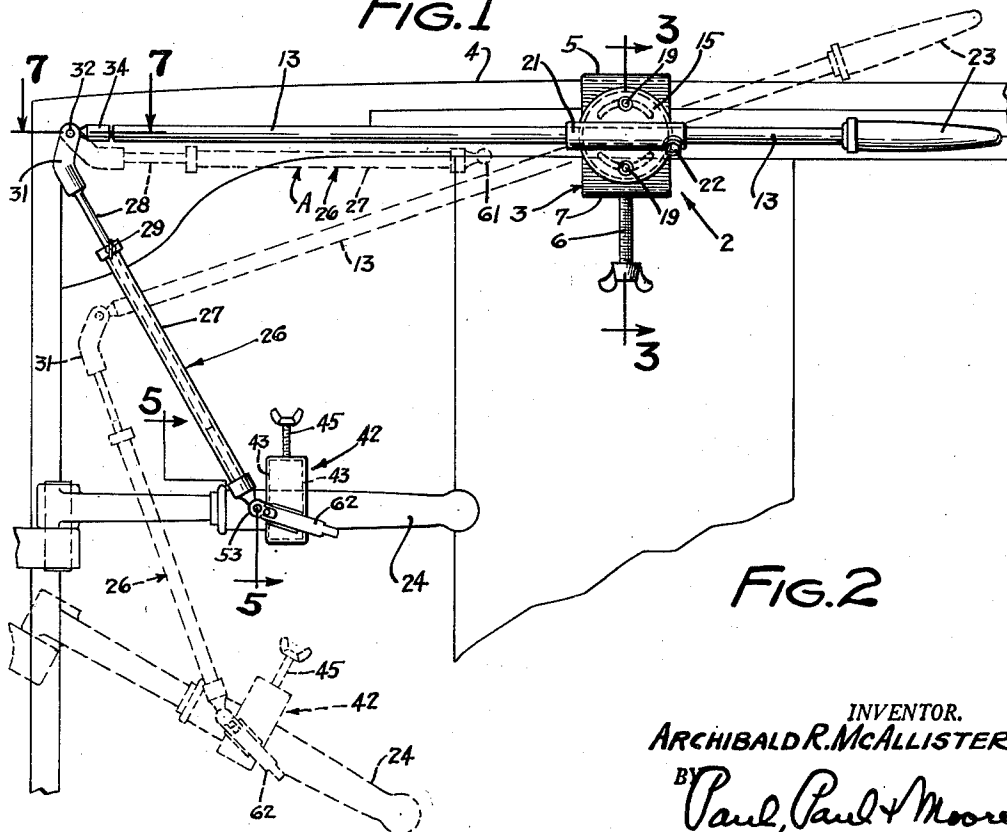


FIG. 2

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2 Sheets-Sheet 2

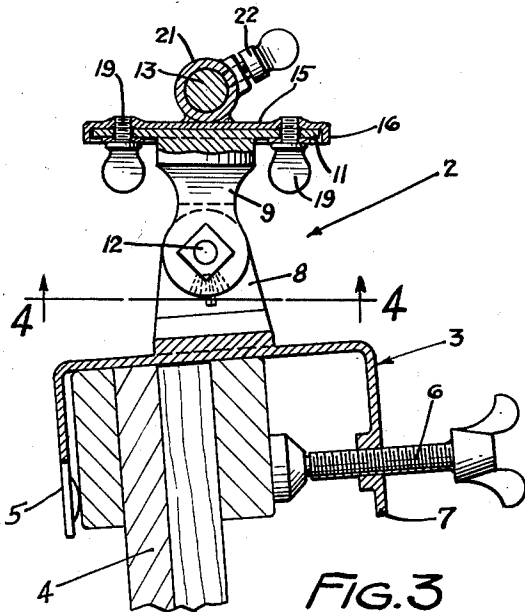


FIG. 3

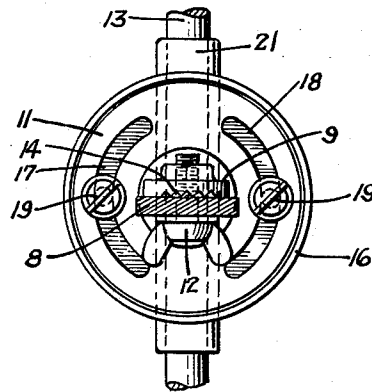


FIG. 4

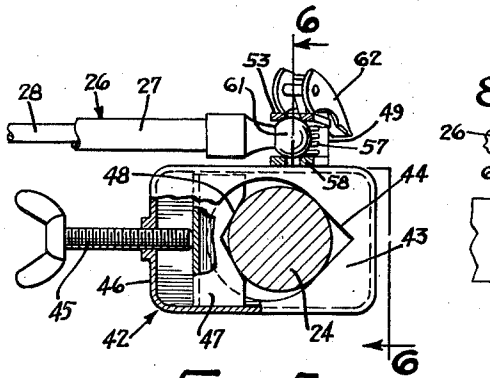


FIG. 5

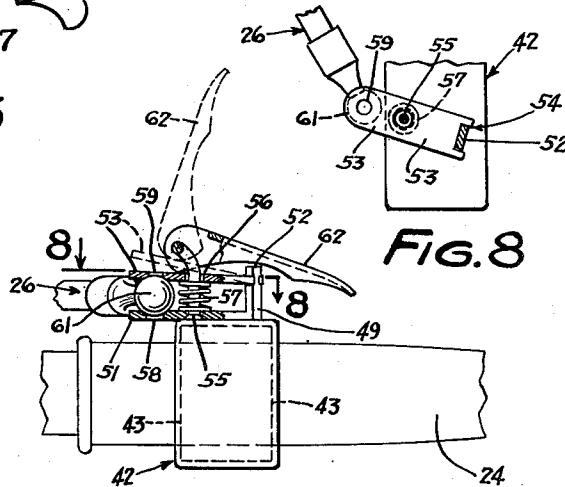


FIG. 6

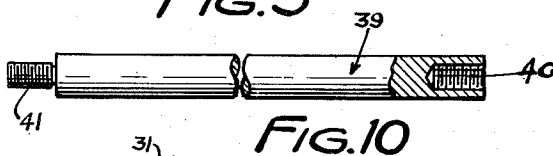


FIG. 10

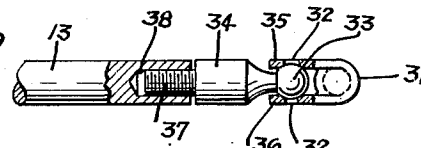


FIG. 7

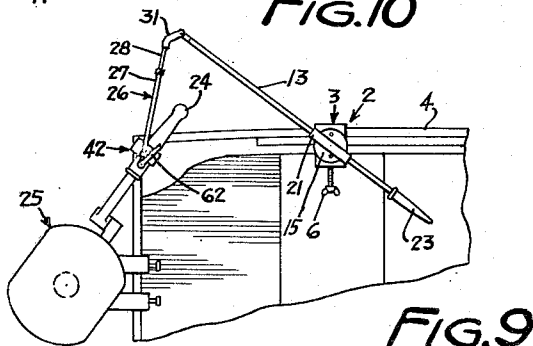


FIG. 9

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STEERING DEVICE FOR OUTBOARD MOTORS

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4 Claims. (Cl. 115—18)

1

This invention relates to new and useful improvements in steering devices for outboard motors, and more particularly to such a mechanism which may be quickly and conveniently applied to a conventional outboard motor without making any alterations in the boat or outboard motor, and whereby the operator may conveniently guide the boat in its course when seated forwardly in the boat remote from the outboard motor.

Attempts have heretofore been made to provide steering mechanisms which may be applied to outboard motors whereby the operator will not be required to sit in the rear seat of the boat next to the outboard motor in order to guide the boat in its course. Such mechanisms have not proven entirely satisfactory for various reasons, and it is therefore an object of the present invention to provide an improved steering mechanism of this general type wherein all of the objectionable features now inherent in such steering mechanisms have been eliminated, and whereby the operator may conveniently guide the boat in its course when positioned in a seat located more forwardly in the boat.

A further object is to provide a simple, inexpensive steering mechanism for outboard motors which is light in weight yet very rugged in construction, and which is universally adjustable for mounting on practically all conventional outboard motors and boats now in use, particularly the smaller sizes.

A further object is to provide a simple steering mechanism for outboard motors comprising an elongated steering rod having means for pivotally mounting it upon a side wall of a boat, whereby the steering rod may be swung about a vertical or upright axis by an operator seated forwardly in the boat, the rear end of the steering rod having a telescopically adjustable connecting link connecting it to the usual steering lever or tiller of the outboard motor whereby the tiller of the outboard motor may readily and conveniently be operated by simply swinging the forward end of the steering rod in a horizontal plane in substantially the same manner as one would swing the tiller of the outboard motor.

Other and more specific objects of the invention reside in the unique construction of the supporting bracket for the steering rod which is so constructed that it may readily be secured to nearly all types of boats, and which provides a universal mounting for the steering rod whereby the latter may readily be adjusted to normally assume a position directly over the

2

side wall of the boat to which the bracket is secured; in the provision of such a mounting whereby the fulcrum of the steering rod may be shifted to any desired location along the length of the steering rod, thereby to provide the most desired leverage for operating the tiller; in the universal connections provided at the ends of the link which operatively connects the rear end of the steering rod to the outboard motor steering lever or tiller; in the construction of the box-like clamping device for securing one end of the connecting link to the tiller whereby the connection between the link and tiller hand grip may be made at any desired point along the length thereof; in the unique construction of the universal connection between the link and the box-like clamping device secured to the tiller handle, whereby the link may be quickly detached from the clamping device by the simple manipulation of a small spring-actuated lever; and in the means provided for varying the length of the steering rod to adapt the mechanism for boats of various sizes.

Other objects of the invention will appear from the following description and the accompanying drawings and will be pointed out in the annexed claims.

In the accompanying drawings there has been disclosed a structure designed to carry out the various objects of the invention, but it is to be understood that the invention is not confined to the exact features shown, as various changes may be made within the scope of the claims which follow.

In the drawings:

Figure 1 is a perspective view showing the steering mechanism mounted on a boat and operatively connected to the usual steering lever or tiller of a conventional outboard motor;

Figure 2 is a plan view of a portion of the rear end of a boat showing the steering mechanism mounted thereon, the dotted lines indicating the position of the steering rod when the boat is to be turned to the left;

Figure 3 is an enlarged detail sectional view on the line 3—3 of Figure 2, showing the mounting bracket for supporting the steering rod on a side wall of the boat;

Figure 4 is a sectional plan view substantially on the line 4—4 of Figure 3;

Figure 5 is a sectional elevation on the line 5—5 of Figure 2;

Figure 6 is a detail sectional view substantially on the line 6—6 of Figure 5;

Figure 7 is a detail sectional view on the line

3

7-7 of Figure 2, showing the universal connection between the rear end of the steering rod and the connecting link;

Figure 8 is a sectional plan view on the line 8-8 of Figure 6, showing the universal connection provided between the opposite end of the connecting link and the clamping device secured to the tiller lever;

Figure 9 is a view similar to Figure 2, on a smaller scale, showing the steering rod swung to a position to turn the boat to the right; and

Figure 10 is a view showing an extension steering rod section for elongating the steering rod, should the operator desire to be seated more forwardly in the boat.

An important feature of the present invention resides in the unique construction of the bracket for securing the steering mechanism to a side wall of a boat, which bracket provides a universal mounting for the mechanism whereby the mechanism is adapted for use on boats of various sizes.

This bracket, generally designated by the numeral 2, is best shown in Figure 3, and comprises a lower clamping member 3 adapted to be fitted over the upper edge of a side wall 4 of a boat with its leg 5 preferably seated against the outer surface of the boat wall. The other leg 7 of the member 3 is shown positioned interiorly of the boat and has a suitable clamping screw 6 received in threaded engagement therewith which cooperates with the leg 5 to securely clamp the member 3 to the boat wall, as will be understood by reference to the drawings.

If desired, the mounting bracket may be reversed from the position shown in the drawings, whereby the clamping screw 6 is situated exteriorly of the boat, but it is preferably located within the boat to avoid contact with fixed objects, such as a dock or other boats, which might cause damage thereto.

An upstanding lug 8 is secured to the top wall of the clamping member 3 by suitable means such as spot welding, and is engageable with a depending lug 9 fixed to a circular plate 11, as will be understood by reference to Figures 3 and 4. A clamping screw 12 secures together the lugs 8 and 9 of the member 3 and plate 11, respectively, as clearly shown in Figures 3 and 4. By thus securing together the lugs 8 and 9, the circular plate 11 may be laterally adjusted or tilted with respect to the boat wall to facilitate aligning the steering rod 13, shown in Figures 1 and 2, with the side wall of the boat over which the steering rod is mounted. Suitable interlocking teeth 14 are shown provided between the lugs 8 and 9 to prevent accidental pivotal movement of the plate 11 with reference to the lug 8.

A second circular plate 15, having a depending peripheral flange 16, is shown seated upon the circular plate 11 with its depending flange 16 concealing the plate 11, as best illustrated in Figure 3. Arcuately formed slots 17 and 18 are provided in the circular plate 11, as shown in Figure 4, adapted to receive suitable clamping screws 19 having their threaded terminals received in threaded apertures provided in the upper plate 15, as clearly illustrated in Figure 3. The clamping screws 19 are preferably provided with flat heads, whereby they may readily be grasped with the fingers or a pair of pliers, when it is desired to secure the plates 11 and 15 together in fixed relation as when it is desired to guide the boat along a straight course as, for example, when trolling. In normal operation the

4

clamping screws 19 are loosened sufficiently to permit the upper plate 15 to freely rotate upon the lower plate 11.

A sleeve-like element 21 is suitably fixed to the upper plate 15 and is movable therewith as a unit. The element 21 is adapted to receive the steering rod 13, hereinbefore referred to, which may be secured in adjusted position in the sleeve-like element 21 by a suitable set screw 22. A suitable hand grip 23 is shown secured to the front end portion of the steering rod 13.

Another feature of the invention resides in the novel means provided at the rear end of the steering rod for operatively connecting said end to the usual steering lever or tiller 24 of the outboard motor 25. To thus connect the steering rod 13 to the outboard motor tiller, a suitable longitudinally adjustable connecting link, generally designated by the numeral 26, is provided. The link 26 is shown comprising telescopic members 27 and 28 which are secured together in adjusted position by a suitable clamping screw 29.

The telescopic member 28 is shown having a forked fitting 31 secured to its outer end and having aligned apertures 32 therein which are of such size that when the spherical element or ball 33 provided on the terminal section 34 of the steering rod 13, is interposed between the legs 35 and 36 of the fitting 31, said spherical element will be firmly grasped between the legs 35 and 36 to thereby provide a universal pivotal connection between the steering rod and the adjacent end 31 of the link 26. The terminal section 34 it will be noted, has a threaded stem 37 which is received in threaded engagement with a socket 38 provided in the end of the steering rod 13.

In some instances, it may be desired to lengthen the steering rod 13 as, for example, should it be desired to steer the boat from a seat located near the center or more forwardly of the boat. In such cases, the steering rod 13, shown in Figures 1 and 2, may be lengthened by securing an added section 39 thereto, which preferably is interposed between the rear end of the steering rod 13 and its terminal section 34, as will be understood. The section 39 it will be noted is provided at one end with a threaded socket 40, similar to the socket 38 provided in the rear end of the steering rod 13, and has a threaded end portion 41 at its opposite end adapted to be received in threaded engagement with the socket 38 of the steering rod 13. When the extension rod 39 is used, the terminal section 34 is secured to the rear end of the rod section 39 by securing its threaded terminal 37 in the socket 40 thereof.

Another important feature of the invention resides in the means provided for detachably connecting the opposite end of the connecting link 26 to the usual steering lever or tiller 24 of the outboard motor. As best shown in Figures 5 and 6, a suitable clamping device comprising a box-like body, generally designated by the numeral 42, is provided with opposed side walls 43 having aligned apertures 44 therein adapted to receive the tiller 24, as best shown in Figures 1 and 5. The corresponding edge portions of the apertures 44 are preferably V-shaped as shown in Figure 5 whereby when the set screw 45, received in threaded engagement with the opposed wall 46 of the body 42 is manipulated, the V-shaped walls of the opening 44 will grip the tiller 24 of the outboard motor, as will readily be understood by reference to Figure 5. A clamping element 47

is provided within the body 42 and is shown provided with a V-shaped notch 48 for engaging the opposite side of the tiller 24. The clamping element 47 is moved into clamping engagement with the tiller by manipulation of the screw 45, as will be understood.

Secured to the upper wall of the body of the clamping device 42 is an L-shaped bracket or member 49, shown having a horizontal leg 51 and an upright portion 52. A strap-like element 53 has one end notched as shown at 54 in Figure 8, whereby it may interlockingly engage notches provided in the opposed edges of the upright portion 52 of the member 49. A stud 55 is secured in the lower element 51 and extends upwardly therefrom through an aperture 56 in the upper strap-like element 53, and a suitable spring 57 is coiled about the stud 55 between the elements 51 and 53, whereby the spring constantly tends to separate said elements.

The outer end portions of the elements 51 and 53 are apertured as shown at 58 and 59, respectively, in a manner similar to the aligned apertures provided in the fitting 31. A ball-like element 61 is secured to the adjacent end of the telescopic section 27 of the link 26 and is retained in pivotal relation between the elements 51 and 53 by a clamping lever 62, pivoted to the upper end of the stud 55, as shown in Figure 6. When the lever 62 is in the full line position shown in Figure 6, it will exert a clamping pressure on the elements 51 and 53 whereby the ball will be pivotally retained between said elements to thereby serve as a universal joint. When the lever 62 is swung upwardly to the dotted line position shown in Figure 6, the connecting link 23 is detached from the clamping device 42, and therefore the tiller 24.

The novel steering mechanism herein disclosed is extremely simple and inexpensive in construction, and is universally adjustable to fit substantially all types of outboard motors and boats. The clamping device 42 may be quickly secured in adjusted position to almost any type of conventional outboard motor steering lever or tiller. Its clamping faces are so arranged and constructed that when the adjusting screw 45 is tightened, there is little or no danger of the clamping device 42 ever shifting its position on the tiller of the outboard motor.

The universal connection between the link 26 and the clamping device 42 also presents the utmost in simplicity and practicability. When it is desired to detach the steering mechanism from the outboard motor, all that is necessary is to swing the clamping lever 62 upwardly to the dotted line position shown in Figure 6, whereupon the spherical element 61 of the link 26 is detached from the clamping device 42. The link may then be folded into the dotted line position shown at A in Figure 2, after which the clamping screw 6 of the supporting bracket 2 may be manipulated to release the bracket from the side wall of the boat. If desired, the clamping device 42 may remain secured to the tiller 24 of the outboard motor, when the latter is not in use.

The telescopic arrangement of the sections 27 and 28 of the link 26 permits the link to be freely longitudinally adjusted to accommodate all sizes of outboard motors and boats. The construction of the mounting bracket 2 is such that it may readily be positioned at any desired point along the side wall of the boat. The provision of the single clamping screw 6 greatly simplifies the operation of securing the mounting bracket 2 to the boat wall, and, in like manner, the clamping

screw 12 which adjustably secures together the upper and lower bracket parts makes it possible to quickly adjust the position of the forward end of the steering rod where it may be most conveniently manipulated by the operator. It will also be noted that the steering rod may be longitudinally adjusted in the sleeve-like element 21 by the simple manipulation of the clamping screw 22, thereby to vary the position of the fulcrum about which the steering rod pivots.

When trolling, or cruising very slowly, it may be desired to temporarily secure the tiller in a relatively fixed position, with respect to the boat and allow the boat to automatically continue along its course without manual guidance. This may be accomplished by securing the steering rod 13 against pivotal movement on the mounting bracket 2 by simply tightening the wing screws 19, shown in Figures 3 and 4. It will thus be seen that the novel steering mechanism herein disclosed, readily lends itself for use on nearly all types of boats equipped with outboard motors. When the steering rod 13 is elongated by inserting the extension section 39 therein, the position of the supporting bracket 2 is usually moved forwardly on the boat wall, and as the bracket provides the fulcrum for the steering rod 13, the leverage between the forward swingable portion of the steering rod and the rear portion thereof may readily be varied to suit the operator by simply shifting the position of the bracket lengthwise along the boat wall to obtain the desired leverage.

It will also be noted that by mounting the steering rod 13 on the boat wall, as herein disclosed, and by connecting its rear end to the tiller, as shown, the forward end portion of the steering rod is always swung in the direction in which the boat is to be turned. In other words, if the boat is to be turned to the left, the operator swings the front end of the steering rod to the left, as indicated by the dotted lines in Figure 2; and if the boat is to be turned to the right, the steering rod is swung in the same direction, or to the right, as shown in Figure 9.

It will be apparent to those skilled in the art that I have accomplished at least the principal objects of my invention, and it will also be apparent to those skilled in the art that the embodiments herein described may be variously changed and modified without departing from the spirit of the invention, and that the invention is capable of uses and has advantages not herein specifically described; hence it will be appreciated that the herein disclosed embodiments are illustrative only, and that my invention is not limited thereto.

I claim as my invention:

1. In a steering mechanism for a boat equipped with an outboard motor including a steering lever, an elongated steering rod having means at its rear end for operatively connecting it to the steering lever of the outboard motor, a bracket comprising upper and lower portions, means for detachably securing the lower bracket portion to a side wall of the boat, the upper bracket portion including a substantially circular plate having means for adjustably securing it to the lower bracket portion whereby the circular plate may be laterally adjusted about a horizontal axis disposed lengthwise of the adjacent boat wall, thereby to laterally adjust said circular plate with respect to said wall, and a horizontally disposed sleeve-like element mounted for limited pivotal movement on said plate about a vertical axis, said

sleeve-like member receiving and supporting the steering rod and whereby an operator seated in the boat remote from the outboard motor may conveniently manipulate said rod to impart swinging movement to the outboard motor to thereby guide the boat in its course.

2. In a steering mechanism of the class described, a mounting bracket comprising a U-shaped base portion having means for securing it to a side wall of a boat, an upstanding lug on said base, a horizontally disposed circular plate having a depending portion adjustably secured to the upstanding lug on the base portion whereby said circular plate is adapted for lateral adjustment with respect to the boat wall upon which the bracket may be mounted, a second circular plate seated on said first mentioned circular plate and having means securing it thereto and whereby the second plate is adapted for swinging movement upon the first plate about an upright axis, a sleeve-like element secured to the second plate, a steering rod adjustably supported in said sleeve-like element, and means for connecting the rear end of the steering rod to the usual steering lever of an outboard motor.

3. In a steering device of the class described, a bracket comprising a substantially U-shaped base portion having means for securing it to a side wall of a boat, a horizontally disposed circular plate secured to said base portion and adapted for lateral adjustment thereon with respect to the boat wall to which the bracket may be secured, a second plate mounted on said first circular plate and adapted for rotation thereon about an upright axis, a sleeve-like element secured to the second plate, a steering rod secured in said sleeve-like element, a telescopically adjustable link, a universal connection connecting one end of said link to the rear end of the steering rod, a box-like clamping device having means for adjustably securing it to the usual steering lever of an outboard motor, and means providing a universal connection between said box-like clamping device and the opposite end of the link.

4. In a steering device of the class described, a bracket comprising a substantially U-shaped

base portion having means for securing it to a side wall of a boat, a horizontally disposed circular plate secured to said base portion and adapted for lateral adjustment thereon with respect to the boat wall to which the bracket may be secured, a second circular plate mounted on said first circular plate and adapted for rotation thereon about an upright axis, a sleeve-like element secured to the second plate, a steering rod secured in said sleeve-like element, a telescopically adjustable link, a universal connection connecting one end of said link to the rear end of the steering rod, a box-like clamping device having means for adjustably securing it to the usual steering lever of an outboard motor, and means providing a universal connection between said box-like clamping means and the opposite end of the link, said universal connecting means including a pivoted element which may be conveniently actuated to quickly release the connecting link from the box-like clamping device on the outboard motor steering lever, or to attach it thereto.

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