

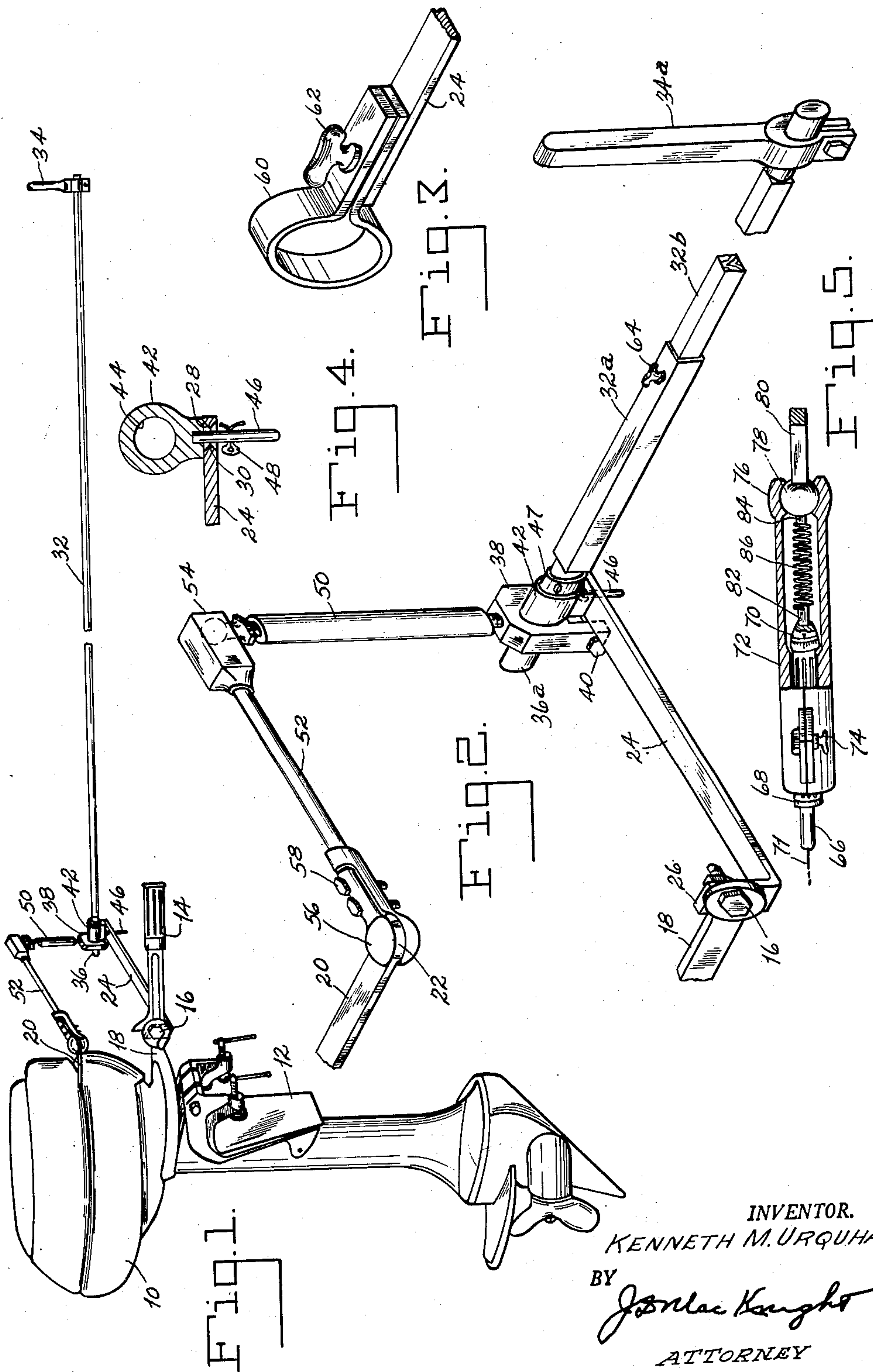
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APPARATUS FOR REMOTE CONTROL OF OUTBOARD MOTORS

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APPARATUS FOR REMOTE CONTROL OF  
OUTBOARD MOTORS

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This invention relates to control devices and particularly to means whereby both the steering and speed of an outboard motor can be controlled by one hand from any position in the boat to which the motor is attached.

The principal object of the invention is the provision of a device of this kind which will eliminate the necessity for the operator to sit directly in front of or near the motor. Another object is to provide a control apparatus which may be easily attached to and detached from substantially any outboard motor and which apparatus does not have to be connected in any manner to the boat itself. Still another object is the provision of such an apparatus through the use of which the steering and speed of the motor can be controlled continuously without interruption even though the motor be jarred or suddenly jolted upwardly by striking a hidden underwater object such as a rock, submerged log or the like.

At the present time small and medium sized outboard motors are usually provided with a steering arm and a separate speed control lever. These elements project but a short distance from the motor and it is thus necessary for the operator to sit close to the motor with one hand on the steering arm and the other hand on the speed control lever, particularly when the boat is moving through a narrow stream or where constant care must be taken not to hit rocks, logs, boats and other objects. Depending, of course, upon the speed of the boat and the wind direction, it is frequently unavoidable that the operator inhale exhaust fumes from the motor. Again it is impossible for the operator to move forward or to take any other position in the boat while the motor is operating.

Larger outboard motors are frequently rigged up with a steering wheel in the bow of the boat adapted to turn the motor about its swivel connection by means of cables passing through eyes along the sides of the boat. With such motors the speed control is usually effected by means of a push-pull flexible rod or wire enclosed in a tube extending from the motor to a point at the bow of the boat near the steering wheel. With this arrangement control is practicable at one point or location only and again both hands are required for smooth operation.

With the present invention an inexpensive, lightweight, easily attachable means is provided for controlling both small and large outboard motors from an unlimited number of positions in the boat. The position of the operator can be

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easily changed while the boat and motor are in movement. The motor and the control apparatus can readily be moved from one boat to another and without the necessity of any special attachments being made to the boat. Since the control device is not attached to the boat itself, the motor can be used on boats of substantially any type. As indicated above, the operator is freed of the necessity of sitting near the motor and he thus avoids both the noise and fumes inevitably found at the ordinary operating positions. Again the operator can sit with the passengers and talk with them while controlling both the speed and direction of travel with one hand. The device is readily adapted to be fitted to practically all models of outboard motors and can be readily detached from one and applied to another.

In accordance with the invention a control device is provided, generally in the form of a lightweight rod extending loosely from any position in the boat to the motor and attached at its rear end to the motor by means of a bracket and a linkage, the arrangement being such that the operator with one hand on the control rod can steer the boat by pushing the rod forward or backward while simultaneously controlling the speed by turning the rod slightly in either direction about its longitudinal axis.

For a better understanding of the invention reference may be had to be the accompanying drawing, in which

Fig. 1 is an elevation of an outboard motor showing the control device attached thereto;

Fig. 2 is an enlarged view of the control mounting and linkage, certain of the parts being of a slightly modified form;

Fig. 3 is an isometric view of another form of attaching means;

Fig. 4 is a vertical sectional view through the coupling between the control rod and steering bracket; and

Fig. 5 is an isometric view partly in section through a modified attaching means.

Referring to Fig. 1, an outboard motor 10 of a conventional form is shown as provided with a bracket 12 for attaching the motor to the boat, not shown, the bracket 12 being pivotally or swivelly connected to the motor so that the latter can be turned about its vertical axis in the steering of the boat. The motor shown is of a conventional type provided with a steering arm or handle 14 pivotally connected as at 16 to a short extension lever 18 rigidly attached to the motor. The boat is steered, of course, by push-



ing the handle 14 to one side or the other in a substantially horizontal plane. The motor is also provided with a comparatively short speed control lever 20 which usually has a ball-shaped outer end 22 for convenience in grasping.

In carrying out the invention in one form, a bracket 24, shown more clearly in Fig. 2, has one end 26 bent at a right angle and provided with a hole through which the pivot bolt 16 can be inserted and tightened so that the bracket will be rigidly and laterally connected to the extension 18. The outer end of the bracket 24 is provided with a hole 28 formed, as shown more clearly in Fig. 4, to provide a knife edge 30 midway between the top and bottom surface of the bracket arm. The purpose of this knife edge will be defined hereafter.

In the form shown in Fig. 1, an elongated control rod 32 is illustrated, this rod being formed of any lightweight rigid material such as wood, aluminum or the like. The outer end of the control rod 32 is provided with a handle 34 clamped to the rod at right angles thereto. The rear end of the control rod 32 is preferably of a smaller diameter as indicated at 36 and a clamping member 38 is adapted to encircle and to be attached rigidly to the rod portion 36 as by tightening a bolt 40. Between the member 38 and the larger diameter portion of the rod 32 is an eye element 42 in which the hole 44 is slightly larger than the rod portion 36. Attached to and depending from the eye element 42 is a pin 46, this element being of slightly smaller diameter than the knife-edged portion 30 of the bracket 24. As shown in Fig. 1 the clamping element 38 is attached to the rod portion 36 at such a point that the eye element 42 will be held loosely against longitudinal movement on the control rod while the control rod will be able to turn easily within the hole 44. If desired a ring 47 may be attached to the rod portion 36 by a suitable set screw so as to limit the longitudinal movement of the rod portion 36 within the eye 42, as shown in Fig. 2. The eye element 42 and its pin 46 are assembled on the outer end of the bracket 24 as shown more clearly in Fig. 4 and a cotter pin 48 may be placed through a suitable hole in the ring 46 below the bracket arm. It will be seen that with the device as described thus far an operator grasping the handle 34 or the rod 32 at any position between the ends of the rod and moving the rod longitudinally will turn the motor 10 about its vertical axis and will thus steer the boat. Due to the pivotal connection shown in Fig. 4 the rod 32 can be moved about its pivot so that the operator can grasp it from a position at either side of the boat.

Extending upwardly and preferably threaded to the upper end of the clamping element 38 is a link rod 50, the upper end of which is attached to a connecting link 52 as by means of a ball and socket connection 54. The other end of the connecting link 52 is provided with an adjustable socket 56 adapted to be loosely clamped around the ball 22 on the outer end of the speed control lever 20, as by means of the bolts 58. With the arrangement thus described, the operator in addition to steering the boat by moving the control rod 32 longitudinally can, by turning the same rod about its longitudinal axis, cause the link rod 50, the connecting link 52 and the speed control lever 20 to turn in a horizontal plane thus controlling the speed of the motor 10.

In operation, in the event that the underwater portion of the motor should strike a rock, a sub-

merged log or the like and be suddenly tilted upwardly about the swivel bracket 12, the bracket arm 24 will not bind upon and cause breakage of the control arm 32, due to the comparatively loose connection between the knife edge 30 and the pin 46. The same sudden tilting of the motor will not cause breakage or strain in the connecting links 50 and 52 due to the provision of the ball and socket connection 22—56.

It is to be understood that the illustration of the connections between the control rod 32 and the motor 10 are by way of example only, and that any other suitable connecting means can be used in place, for instance, of the bolt connection 16 and the ball and socket connection 56. For example, in case the motor is not provided with a vertically tiltable steering handle 14 but rather with a unitary handle rigidly projecting from the motor housing, the bracket 24 can be attached to such a steering handle as by means of the clamping ring 60 shown in Fig. 3 adapted to encircle the steering handle and be clamped thereto as by tightening the wing bolt 62. Likewise, if the motor speed control lever 20 is not provided with the ball end 22, the outer end of the lever could be drilled and a pin and hole connection made between the lever and the connecting link 52 as is shown in Fig. 4.

It is contemplated that instead of the unitary control rod 32 a telescoping rod can be used as is shown more clearly in Fig. 2. Thus the rear portion of the rod could be in the form of a hollow square link of aluminum 32a having a reduced solid round portion 36a at its rear end. An extension member 32b of wood or metal and which can be either solid or hollow is shown as having sliding engagement with the interior of the hollow section 32a and adapted to be rigidly attached thereto at any position as by tightening the wing bolt 64. As is the case with the rod shown in Fig. 1, the outer end of the extension 32b preferably has attached thereto a suitable handle 34a.

Some of the larger outboard motors, instead of being provided with separate steering and speed control levers, are provided with a single lever such as is shown at 66 in Fig. 5. These levers usually have a handle portion 68 and an adjustable or rotatable ball end 70, the member 70 being attached to a flexible wire 71 passing through the handle 68 and hollow arm 66 to the motor where it is attached in various ways to the speed controlling mechanism of the motor. If it is desired to use my control mechanism with a motor having the single control lever just described, a hollow tubular member 72 may be clamped around the handle 68 as by tightening the wing bolt 74. The outer end of the tubular member 72 is provided with an enlargement 76, the inner surface of which is formed so as to provide a ball and socket connection with a ball 78 on the rear end of a control rod 80. With this arrangement the operator can grasp the control rod 80 and due to the ball and socket connection 76—78 can move the control rod longitudinally, thus turning the lever 66 about its axis so as, in turn, to turn the motor 10 about its vertical axis to steer the boat.

The ball end 70 which as has been described above is adapted to control the speed of the motor as by turning it about the longitudinal axis of the lever 66 is shown as drilled at its outermost side to receive a short square rod 82. The backside of the ball 78 is also provided with a short rod 84 and a fairly stiff spring member 86 is



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attached at its ends to the inner ends of these rods 82 and 84. With this arrangement, it can be seen that when the operator turns the control rod 80 about its longitudinal axis the rod 84, spring 86, rod 82, ball 70 and wire 71 will turn correspondingly and the speed of the motor will thus be controlled.

It is repeated that the details of the connections to the outboard motor can be changed from those illustrated in order to adapt the control device to substantially all motors and the invention is considered to reside primarily in the provision of a longitudinally movable control rod adapted to be turned about its longitudinal axis and connected to the steering and speed control mechanisms of the motor so that an operator can, with one hand and from any position in the boat, steer and control the speed of the boat.

Obviously many modifications and variations of the invention, as hereinbefore set forth, may be made without departing from the spirit and scope thereof, and therefore only such limitations should be imposed as are indicated in the appended claims.

I claim:

1. In a control device for an outboard motor having a speed control means and a steering lever and adapted to be attached to a boat by a swivel mounting, means for steering said boat comprising a bracket rigidly attached to said steering lever, an elongated control rod, a pivotal connection between one end of said rod and said bracket, the rod being connected solely to said bracket and free of connection to the rest of the boat and adapted to extend longitudinally of the boat, and means for controlling the speed of said motor comprising a flexible linkage attached to the rear end of the control rod and to said speed control means, the arrangement being such that longitudinal movement of said control rod will move said steering lever to turn the motor about its swivel mounting while rotary movement of said control rod about its longitudinal axis will turn said flexible linkage to actuate said speed control means.

2. In a control device for an outboard motor having a speed control lever and a steering arm, and attached to a boat by a swivel mounting, means for steering said boat comprising a bracket rigidly attached to said arm and extending substantially laterally therefrom, an elongated control rod, a pivotal connection between one end of said rod and the outer end of said bracket, the rod being adapted to extend longitudinally of the boat and being free of connection to the boat itself, and means for controlling the speed of said motor comprising a linkage connecting the rear end of the control rod to said speed control lever so that longitudinal movement of said control rod will move said bracket to turn the motor about its swivel mounting while rotary movement of said control rod about its longitudinal axis will actuate said linkage to move said speed control lever.

3. In a control device for an outboard motor having a speed control lever and adapted to be attached to a boat by a swivel mounting, means for steering said boat comprising a bracket rigidly attached to said motor and extending substantially laterally therefrom, an elongated control rod, a pivotal connection between one end of said rod and the outer end of said bracket, the rod being adapted to extend more or less longitudinally of the boat and being free of connection to the boat itself, and means for controlling the speed of said motor comprising a link rod rigidly

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attached to the end of the control rod having the said pivotal connection, and a link pivotally connected at its ends to the outer end of said link rod and to said speed control lever, the arrangement being such that longitudinal movement of said control rod will move said bracket to turn the motor about its swivel mounting while rotary movement of said control rod about its longitudinal axis will cause said link rod and said connecting link to move said speed control lever, said control rod being freely portable with said motor.

4. In a control device for an outboard motor having a speed control lever and a steering arm and attached to a boat by a swivel mounting so that it can swing about a vertical axis, means for steering said boat comprising a bracket rigidly attached to said steering arm and extending substantially laterally therefrom, an elongated control rod adapted to be grasped by one hand of the operator, a pivotal connection between the rear end of said rod and the outer end of said bracket whereby the rod is adapted to extend more or less longitudinally of the boat while being free of connection to the boat itself, and means for simultaneously controlling the speed of said motor comprising a link rod rigidly attached to the rear end of said control rod, and a connecting link one end of which is pivotally connected to the outer end of said link rod, the other end being pivotally connected to said speed control lever, the arrangement being such that longitudinal movement of said control rod will move said bracket and steering arm to turn the motor about its vertical axis while rotary movement of said control rod about its longitudinal axis will cause said link rod and said connecting link to move said speed control lever, said control rod, link rod and connecting link being freely portable with said motor.

5. In a control device for an outboard motor having a speed control lever and a steering arm, and attached to a boat by a swivel mounting, means for steering said boat comprising a bracket rigidly attached to said arm and extending substantially laterally and horizontally therefrom, an elongated control rod, a loose pivotal connection between one end of said rod and the outer end of said bracket whereby the rod is adapted to extend substantially horizontally and longitudinally of the boat while being free of connection to the boat itself, said loose pivotal connection serving to prevent binding between said bracket and said rod in the event the motor is tilted upwardly as by striking a hidden underwater object, and means for controlling the speed of said motor comprising a linkage connecting the rear end of the control rod to said speed control lever so that longitudinal movement of said control rod will move said bracket to turn the motor about its swivel mounting while rotary movement of said control rod about its longitudinal axis will actuate said linkage to move said speed control lever, said control rod and linkage being freely portable with said motor.

6. In a control device for an outboard motor having a speed control lever and a steering arm, and adapted to be attached to a boat by a swivel mounting, means for steering said boat comprising a bracket rigidly attached to said arm and extending substantially laterally therefrom, an elongated control rod, a pivotal connection between one end of said rod and the outer end of said bracket whereby the rod is adapted to extend longitudinally of the boat while being free



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of connection to the boat itself, said control rod being formed of at least two telescoping sections, means for locking said sections in any predetermined extended or retracted position, and means for controlling the speed of said motor comprising a linkage connecting the rear end of the control rod to said speed control lever, the arrangement being such that longitudinal movement of said control rod will move said bracket to turn the motor about its swivel mounting while rotary movement of said control rod about its longitudinal axis will actuate said linkage to move said speed control lever, said control rod and linkage being freely portable with said motor.

7. In a control device for an outboard motor having a speed control lever and a steering arm, and adapted to be attached to a boat by a swivel mounting, means for steering said boat comprising a bracket rigidly attached to said arm and extending substantially laterally therefrom, said bracket being provided near its outer end with a vertical hole, an elongated control rod, a ring loosely mounted on the rear end of said rod, a pin fixed to said ring and adapted to project downwardly loosely through said hole whereby said rod is adapted to extend longitudinally of the boat due to said pin and hole connection the control rod being connected solely to said bracket and being free of connection to the boat itself, and means for controlling the speed of said motor comprising a linkage connecting the rear end of the control rod to said speed control lever so that rotary movement of said control rod about its longitudinal axis will actuate said linkage to move said speed control lever while longitudinal movement of said control rod will move said bracket to turn the motor about its swivel mounting, said control rod and linkage being freely portable with said motor.

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8. In a control device for an outboard motor having a steering arm including a speed control portion and adapted to be attached to a boat by a swivel mounting, means for steering said boat comprising a tubular member, means for clamping said member around said arm, the outer end of said tubular member being provided with a socket, an elongated control rod having a ball at one end adapted to be engaged in said socket, whereby the rod is adapted to extend longitudinally of the boat while being free of connection to the boat itself, and means for controlling the speed of said motor comprising a resilient spring connecting said ball with the speed control portion of said arm, the arrangement being such that longitudinal movement of said control rod will move said steering means to turn the motor about its swivel mounting while rotary movement of said control rod about its longitudinal axis will turn said ball, said spring and the speed control portion of said arm, said control rod being freely portable with said motor.

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