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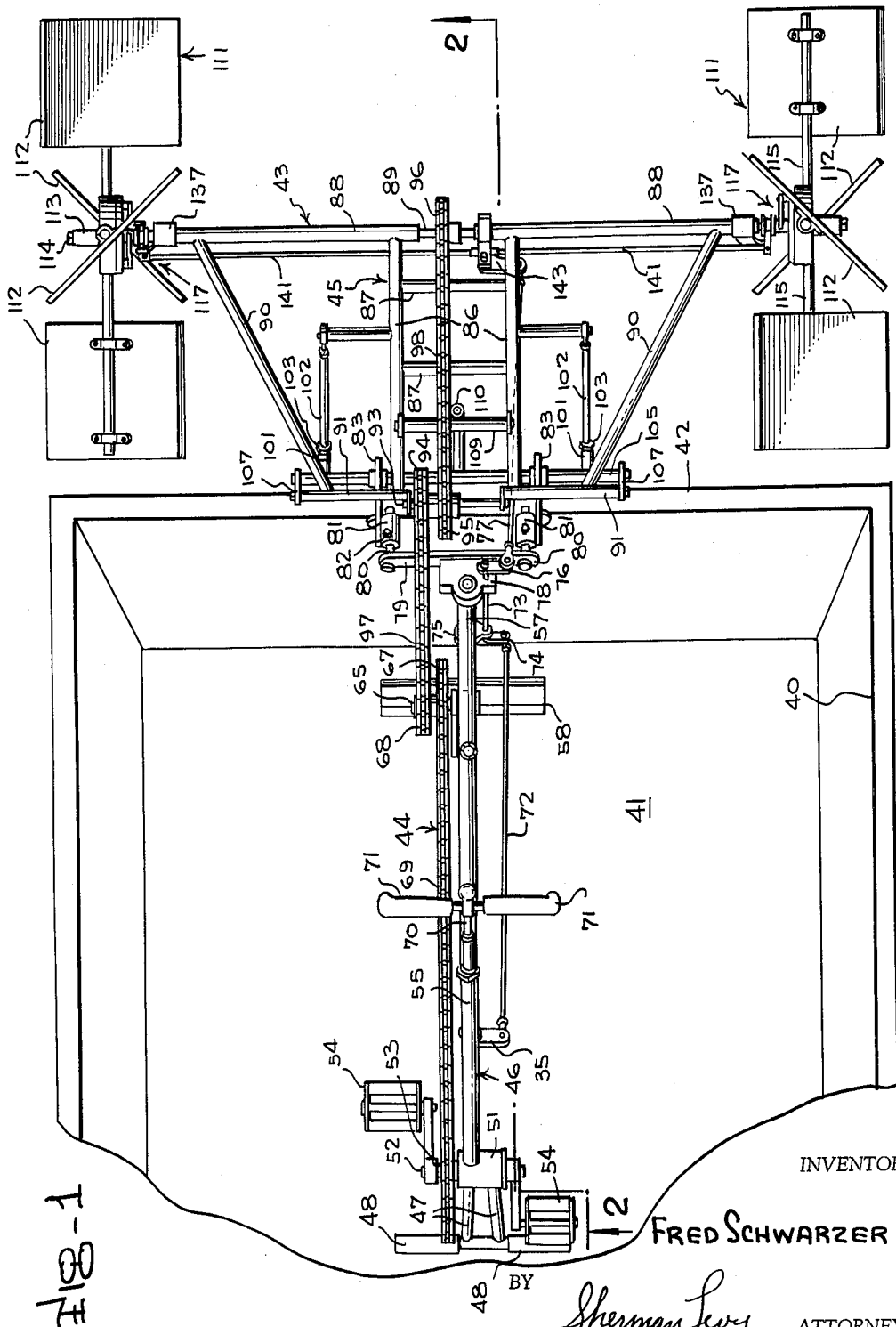
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3,225,733

BOAT PROPELLING MECHANISM

Filed July 20, 1964

4 Sheets-Sheet 1



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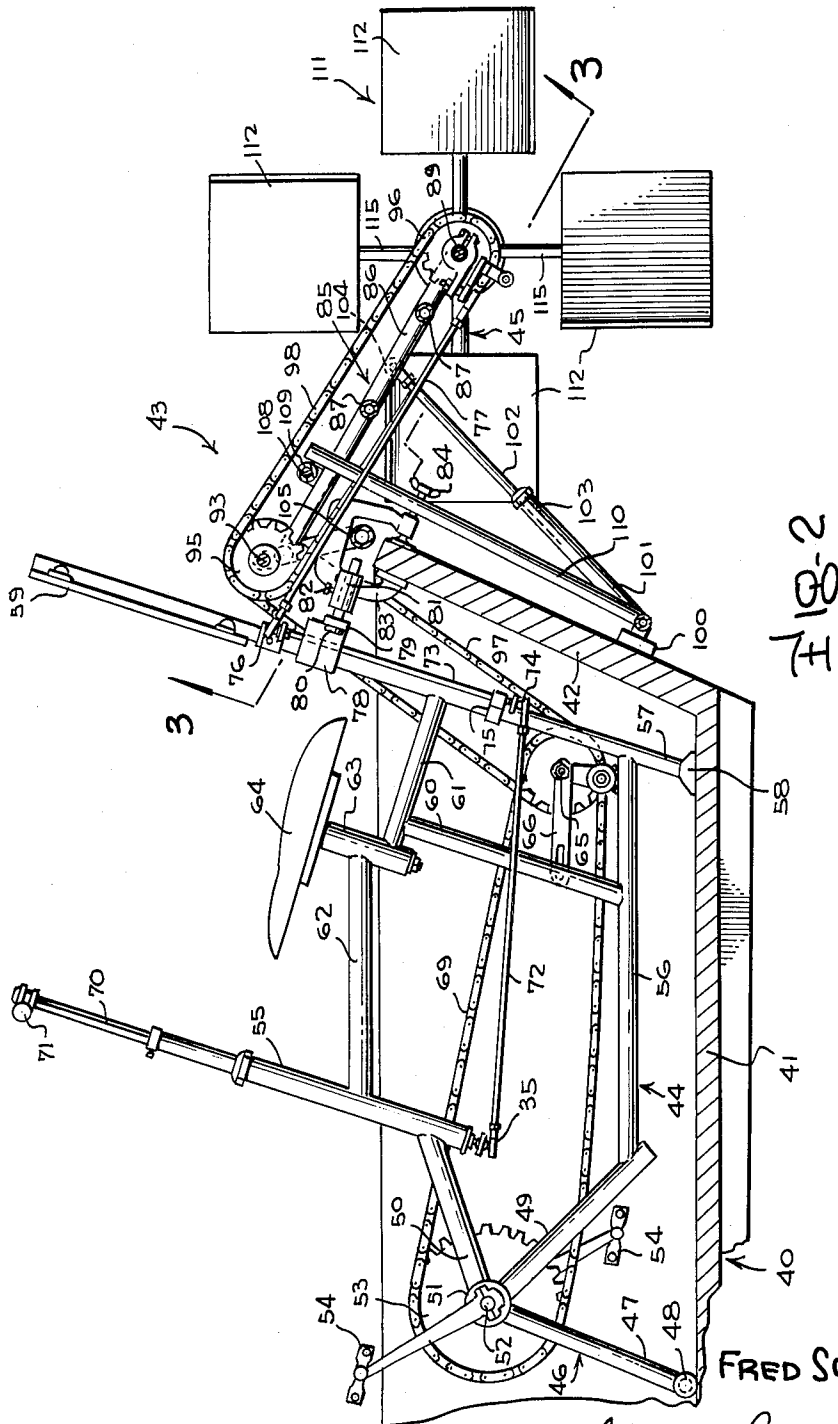
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BOAT PROPELLING MECHANISM

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4 Sheets-Sheet 2



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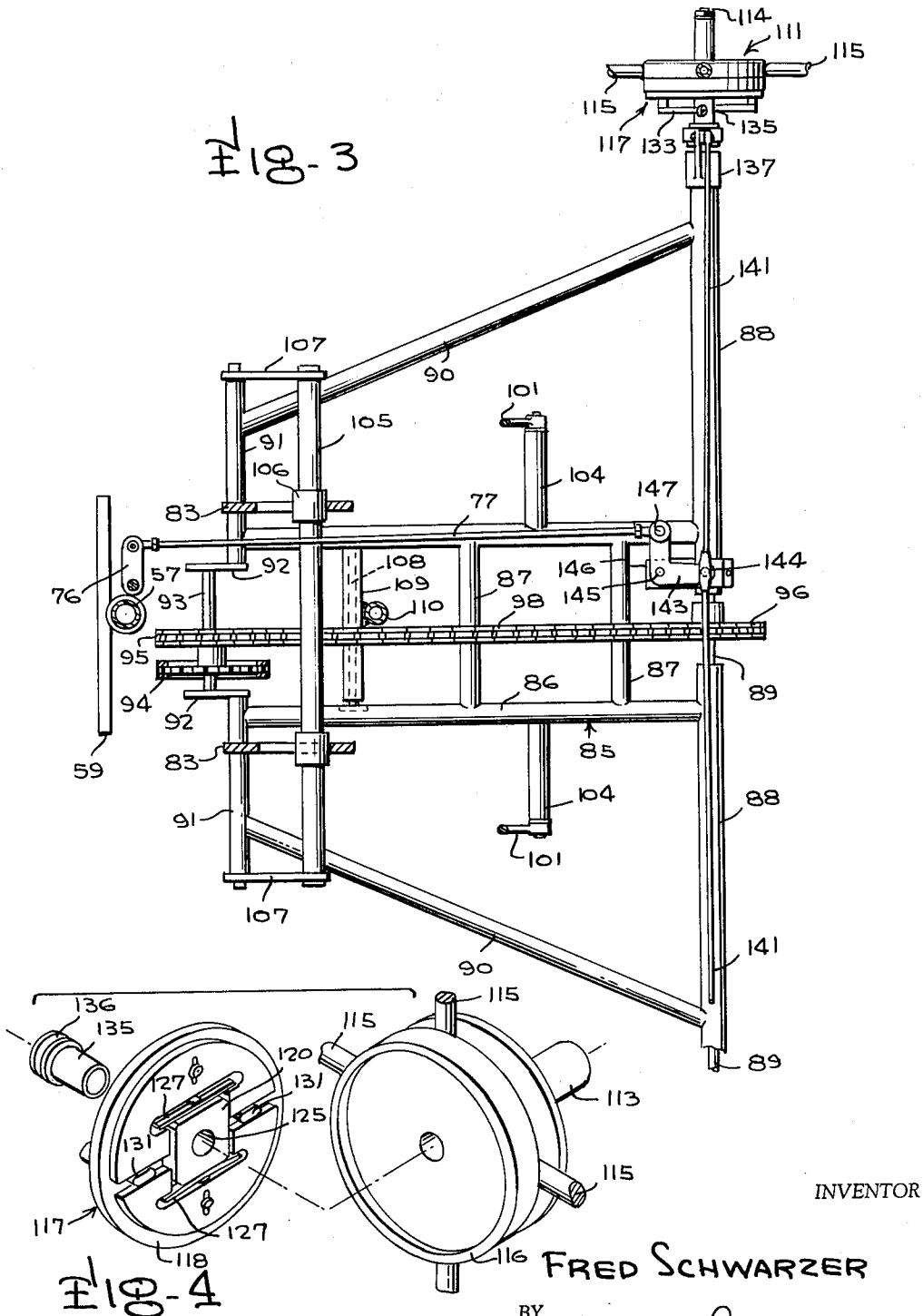
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BOAT PROPELLING MECHANISM

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4 Sheets-Sheet 3



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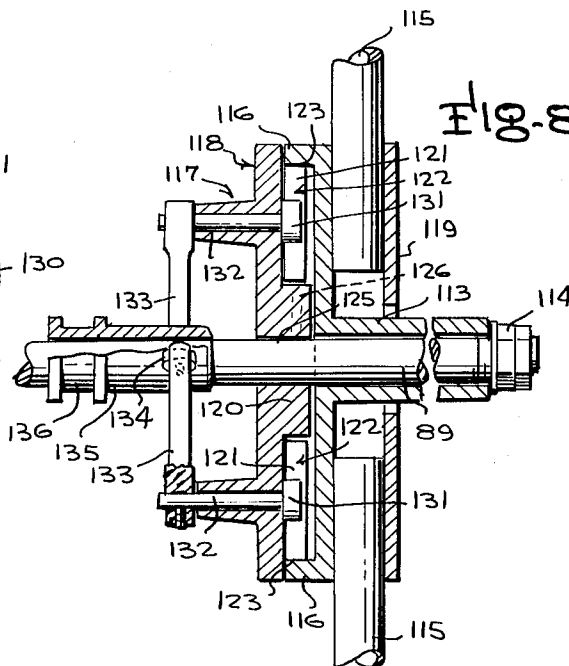
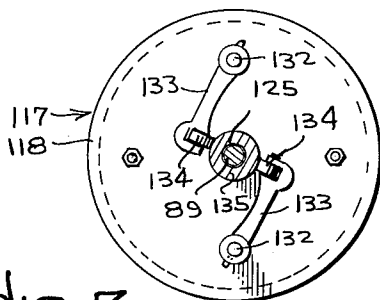
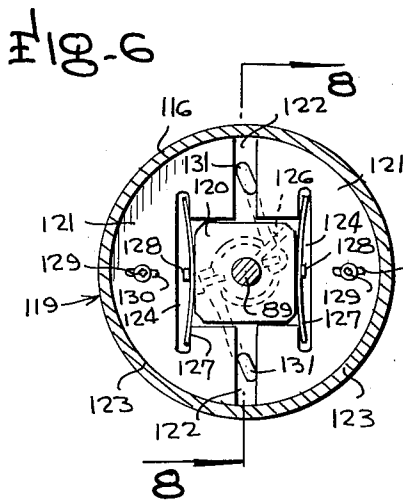
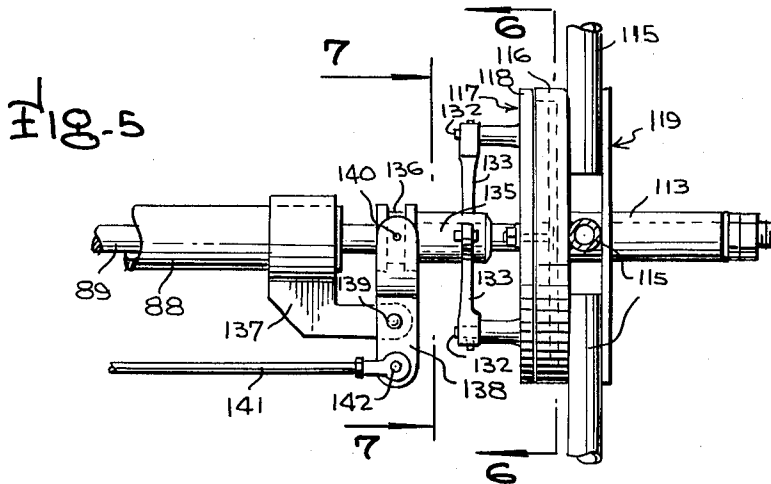
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BOAT PROPELLING MECHANISM

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BOAT PROPELLING MECHANISM

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2 Claims. (Cl. 115—23)

The present invention relates to a device for use in propelling a boat through water, and the present invention is an improvement over the boat propulsion mechanism shown and described in my copending patent application Serial No.318,442, now Patent No. 3,148,656, September 15, 1964.

An object of the present invention is to provide an improved boat propelling mechanism which utilizes a novel and improved steering arrangement wherein a single handle bar or hand gripping member is adapted to be manually actuated in order to control rotation of a pair of paddle units so that a boat can be readily caused to move in a forward or reverse direction or else the boat can be steered or turned to the left or right as desired.

Another object is to provide a boat propelling mechanism which includes an inboard section and an outboard section, and wherein the outboard section is pivotally connected to the inboard section so that the device can be readily mounted on boats of different shapes or sizes, and wherein the paddle unit is mounted on the outboard section and can be raised to permit the paddle unit to operate in different depths of the water so that the effect provided by the rotating paddle units can be controlled, and wherein the inboard section is adapted to have foot pedals connected thereto so that a person can readily and conveniently sit on the inboard section and turn the foot pedals by means of pressure from the feet so as to cause rotation of the paddle units in the desired manner.

Still another object is to provide a boat propelling mechanism which includes parts or sections that can be readily assembled and disassembled so that, for example, when the device is not being used it can be conveniently taken apart and stored in a small amount of space such as in the trunk of a vehicle or other locality, and wherein when it is desired to use the device, the parts can be readily connected together or reassembled in a minimum of time and with a minimum amount of effort, and wherein the various parts are adapted to be conveniently made of stampings so that fabrication and manufacture thereof can be economically and easily accomplished, and wherein the boat propelling mechanism of the present invention can be used with pleasure and for health purposes by persons of different ages in various bodies of water, and wherein the device can be used efficiently by even inexperienced operators.

Further objects and advantages are to provide improved elements and arrangements thereof in a device of the character described that is economical to produce, durable in form, and conducive to the most economical use of materials and uniformity of members formed therefrom.

Still further objects and advantages will become apparent in the subsequent description in the specification.

In the drawings:

FIG. 1 is a top plan view of the boat propelling mechanism of the present invention, and with parts broken away.

FIG. 2 is a sectional view taken on the line 2—2 of FIG. 1.

FIG. 3 is a sectional view taken on the line 3—3 of FIG. 2.

FIG. 4 is an enlarged perspective view showing details of the clutch mechanism and portions of the paddle unit.

FIG. 5 is a fragmentary elevational view showing a portion of the clutch mechanism.

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FIG. 6 is a sectional view taken on the line 6—6 of FIG. 5.

FIG. 7 is a sectional view taken on the line 7—7 of FIG. 5.

FIG. 8 is a sectional view taken on the line 8—8 of FIG. 6 and being on an enlarged scale.

Referring in detail to the drawings, the numeral 40 indicates a boat that includes a bottom portion 41 and the usual transom 42, and the numeral 43 indicates the boat propelling mechanism of the present invention, and the boat propelling mechanism 43 includes an inboard section that is indicated generally by the numeral 44 as well as an outboard section which is indicated generally by the numeral 45, FIG. 2.

As shown in the drawings, the inboard section 44 includes a frame 46 which comprises a pair of first portions 47 that have a rest suitably affixed to the lower ends thereof and the rest 48 is adapted to engage the upper surface of the bottom 41 of the boat 40 as shown in FIG. 2. The numerals 49 and 50 indicate second and third portions which are formed integral with or secured to the first portion 47, and the numeral 51 indicates a fitting which is arranged at the junction of the portions 47, 49 and 50.

The numeral 52 indicates a first axle which extends through the fitting 51, and a first sprocket 53 is suitably affixed to the axle 52, there being foot pedals 54 connected to the axle 52 so that by applying foot pressure to the pedals 54, the axle 52 can be rotated to turn the sprocket 53 for a purpose to be later described.

The frame 46 further includes a fourth portion 55 which is suitably affixed to the portion or bar 50, and the numeral 56 indicates a generally horizontally disposed fifth portion which is secured to the portion 49, and an upstanding sixth portion 57 is secured to or formed integral with the rear end of portion 56, there being a rest 58 on the lower end of the portion 57 for engaging the upper surface of the bottom 41 of the boat 40. The numeral 59 indicates a back rest or back support which is adapted to be connected to the portion 57 for providing a comfortable and convenient support for the back of the person operating the present invention.

The frame of the inboard section 44 further includes an upstanding seventh portion 60 which has its lower end affixed to the portion 56, and an eighth portion 61 is affixed to the upper end of the portion 60, there being a ninth portion 62 which extends between the portion 55 and a tenth portion 63 and which is secured thereto. The numeral 64 indicates a seat which is suitably supported on or by the upstanding portion 63, and the seat 64 is adapted to comfortably and conveniently support the operator of the boat propelling mechanism of the present invention.

The numeral 65 indicates a second axle which is adapted to be supported in the frame by a bracket assembly 66, and sprockets 67 and 68 are mounted on the axle 65. The numeral 69 indicates an endless chain which is trained over the sprockets 63 and 67.

As shown in the drawings, a standard or column 70 is rotatably mounted in the portion 55 of the frame 46, and a handle bar or hand gripping member 71 is suitably connected to the upper end of the column 70 so that the person sitting on the seat 64 can conveniently grip the handle bar 71 in the hands and the single handle bar 71 is adapted to be used for controlling movement of the boat in a forward direction or for steering the boat to the left or right or for use in causing the boat to make a desired turn. A lug or fitting 72 serves to operatively connect the lower end of the column 70 to a first rod or connector 72, and the rear end of the rod 72 is connected to the lower end of a rod 73 by means of a fitting 74. The rod 73 is rotatably or swivelly supported adjacent the por-

tion 57 by means of bearing blocks 75. The numeral 76 indicates a fitting which is affixed to the upper end of the rod 73, and the fitting or lug 76 is also secured to the front end of a rod or connector 77.

The numeral 78 indicates a bracket which is affixed to the portion 57, and a strap or bar 79 is secured as by welding to the bracket 78, there being a pair of screw members 80 extending through the strap 79, and the screw members 80 are received in bushings 81, and set screws 82 are arranged in engagement with the bushings 81 for selectively maintaining the set screws 80 connected to the bushings 81. Thus, by loosening the set screws 82, the bolts or screws 80 can be loosened or removed from the bushings 81 so that the inboard section and outboard section can be disassembled whereby the entire device can subsequently be stored or carried in a small space. Clamps such as C-clamps 83 are secured as by welding to the bushings 81, and the clamps 83 are adapted to engage portions of the transom 42, and pressure screws 84 are associated with the clamps 83.

The outboard section 45 includes framework 85 that embodies a first pair of spaced parallel members 86, and the members 86 have cross pieces 87 extending therebetween and affixed thereto, FIG. 3. The numeral 88 indicates a pair of aligned second or tubular members, and the tubular members 88 are arranged at right angles with respect to the rear ends of the first members 86 and are secured thereto or formed integral therewith, there being a shaft 89 extending through the aligned members 88, and the shaft 89 is rotatable in the members 88. The framework 85 further includes angularly arranged third members 90 which are fixed to the members 88, and fourth members 91 are secured to the front ends of the members 90. A pair of spaced parallel bars or straps 92 are secured to the inner end portions of the members or portions 91, and a rod 93 extends between the bars 92 and is affixed thereto. The numerals 94 and 95 indicate fourth and fifth sprockets which are rotatably mounted on the rod 93, and a sixth sprocket 96 is suitably affixed to the rotary shaft 89. The numeral 97 indicates an endless chain which is trained over or on the sprockets 68 and 94, and an endless chain 98 is arranged in engagement with the pair of sprockets 95 and 96.

The numeral 100 indicates a support piece which engages the outer surface of the transom 42, FIG. 2, and a cylindrical member 101 is suitably secured to the support piece 100, there being a rod 102 telescopically or adjustably connected to the cylinder 101, and a retainer 103 may be provided for maintaining the rod 102 stationary in its various adjusted positions in the cylinder 101 and this construction permits the outboard section 45 to be pivoted or swung about an axis extending through a member 105 so that, for example, the paddle units can be raised or lowered as desired or required. The member 105 may be swivelly or rotatably supported in bearings or bushings 106 which are secured as by welding to the clamps 83, and pieces 107 are arranged at the ends of the member 105.

The numeral 108 indicates a rod which extends between the first members 86 and the framework 85, and a tubular piece 109 is swivelly mounted on the rod 108, there being a connecting piece 110 extending between the support member 100 and member 109 and being secured thereto.

There is further provided a pair of similar paddle units which are each indicated by the numeral 111, and the paddle units 111 each include a plurality of angularly arranged blades 112, and as shown in FIG. 8 for example, each of the paddle units 111 includes a support member 119 which is provided with an apertured hub 113 for the projection therethrough of an end portion of the shaft 89, and the support member 119 is loosely or rotatably mounted on the shaft 89, and lock nuts 114 are adapted to be used for maintaining the support mem-

ber 119 and its associated parts on the shaft 89. A plurality of radially disposed arms 115 are suitably affixed to the support member 119, and the blades 112 are suitably affixed to the outer end portions of the arms 115. Each of the support members 119 has associated therewith a clutch assembly which is indicated generally by the numeral 117, and the clutch assembly 117 includes a body member 118. The numeral 116 indicates a circular rim portion which forms a part of the support member 119. The body member 118 is provided with a centrally arranged hub 120 which has an opening or aperture 125 therein for the projection therethrough of the shaft 89, and a set screw 126 is adapted to extend through the hub 120 for fixedly securing the body member 118 to the shaft 89.

As shown in FIG. 6 for example, a pair of similar plates 121 are provided for the clutch assembly 117, and the plates 121 are shaped to provide or have spaces 122 between portions thereof, and the plates 121 also have arcuate outer edge portions 123 that are mounted for movement into and out of engagement with the inner surfaces of the rim 116, and there is also provided spaces or cutouts 124 in the plates 121.

Spring members 127 are mounted in the spaces 124 and the spring members 127 are retained in place by means of holders or retainers 128, and the spring members 127 serve to normally urge or bias the plates 121 inwardly so that the edges 123 are out of engagement with the rim or flange portion 116. The numeral 129 indicates guide pins which extend through slots 130 in the plates 121 and this construction helps insure that the plates 121 will be maintained in their proper aligned position as they move back and forth.

As shown in the drawings, there is further provided cams 131 which are arranged in the spaces 122 and the cams 131 are adapted to be used for moving the plates 121 against the pressure of the springs, and the cams 131 are connected to end portions of fingers 132, and the fingers 132 are suitably affixed to arms 133, and the arms 133 have rollers 134 on their end portions which are adapted to engage a straight cone 135, and the cone 135 is slidably mounted on the shaft 89. The cone 135 is provided with a grooved portion 136, FIG. 8.

As shown in FIG. 5, a bracket 137 is suitably affixed to an end portion of a tubular member 88, and a yoke 138 is pivotally connected to the bracket 137 as at 139, and the yoke 138 is connected to the grooved portion 136 of the cone 135 as at 140.

The numeral 141 indicates each of a pair of rods which are arranged so that their outer end portions are pivotally connected to the yoke 138 as at 142, and the inner ends of the pair of rods 141 are connected as at 144 to a bell crank lever 143, and the bell crank lever 143 is pivotally connected to a support 146 as at 145. The rear end of the rod 77 is connected to the bell crank lever 143 by means of a connection or securing element 147.

From the foregoing, it will be seen that there has been provided a boat propelling mechanism which is adapted to be used or mounted on different types of boats whereby boats such as the boat 40 can be conveniently propelled and steered through a body of water. In use, when the device is being used, the inboard section 44 is arranged within the boat 40 as shown in FIG. 2, and the outboard section 45 is arranged exteriorly of the boat and these sections are joined together and are connected to the transom 42 of the boat by means of the clamps 83 and elements such as the pressure screws 84. With the parts assembled as shown in FIGS. 1 and 2 for example, a person is adapted to conveniently sit on the seat 64 and rest against the back rest 59 and the handle 71 is adapted to be conveniently gripped in the hands so that with the feet in engagement with the pedals 54, when it is desired to cause the boat 40 to move forwardly, the pedals 54 are adapted to be turned by foot pressure. Thus, by

applying foot pressure to the pedals 54 so that the pedals 54 turn in a counter-clockwise direction, FIG. 2, it will be seen that this will cause the boat to be propelled in a forward direction. Similarly, by keeping the handle bar 71 in a straight position as shown in FIGS. 1 and 2 and rotating the pedals 54 in a clockwise direction, the boat will be moved in a reverse direction.

Similarly, to cause the boat to be steered or turned as, for example, to cause the boat to be steered to the right, it is only necessary to manually move a handle 71 to the right and this will have the effect of causing the boat to turn to the right because the paddle unit 111 on the right will stop rotating while the other or left paddle unit 111 will continue to rotate and this will cause the boat to turn to the right. Similarly, to turn the boat to the left, it is only necessary to manually move or turn the handle 71 to the left and this causes the paddle unit 111 on the left to stop rotating and the paddle unit on the other side to continue to rotate so that the boat will turn to the left.

Various types of materials can be used for making the different elements or parts, and the different parts can be made in different shapes or sizes as may be required or desired.

The present invention is universally adaptable to fit different sizes or types of boats including row boats, or boats made of different materials such as wood, aluminum or the like. A bicycle type of framework is used and there is provided a novel means for engaging and disengaging the clutches for steering the boat. Forward movement of the boat is accomplished by rotating the foot pedals 54 in a forward or counter-clockwise direction, FIG. 2, while reverse movement of the boat is brought about by rotating the foot pedals 54 in a clockwise direction, FIG. 2. That is, by causing the foot pedals 54 to turn in a rearward direction, the boat will be caused to move backwards. Various types of drive arrangements can be used, and for example, instead of the chain drive a suitable gear arrangement can be utilized. With the present invention fast steering can be accomplished and wherein the steering is accomplished merely by manually turning the handle 71 to the proper direction. When the handle 71 is in a normal position as shown in FIGS. 1 and 2, the hands are free for any desired purpose as, for example, to handle a fishing rod or the like, and thus the present invention can be used when trolling since the boat can be propelled through the water by foot pressure, only. The present invention is light in weight and simple and inexpensive to manufacture, and the present invention includes the novel propelling mechanism as well as the novel steering arrangement, and the parts are arranged so that very little foot pressure is required to propel the boat through the water. The blades 112 of the paddle units 111 are arranged at such an angle whereby the boat will be propelled with maximum efficiency as the paddle units turn. The present invention can be used on fiberglass types of boats or any other type of boat. With the present invention only a single stick or handle 71 is used, and only two clutches such as the pair of clutches 117 are needed, and the clutches can be made out of a suitable material and can be made from stampings so that they are rugged and of low cost. Different types of clutches can be used with the present invention as desired. The two clutches permit either or both of the paddle units 111 to be operated or rotated in a forward or reverse direction and the paddle units 111 can be both rotated simultaneously, or they can be turned individually. The various parts of the device can be made from suitable stampings or the like.

FIGS. 1 and 2 show the position of the parts when the device is mounted on a boat and ready for use in propelling the boat. However, when it is desired to remove the device from the boat, it is only necessary to loosen the clamps 83 and screws 84. Also, the set screws

82 are adapted to be loosened so that the screw members 80 can be removed from the bushings 81 and by removing the chain such as the chain 97 from the sprockets 68 and 94, the inboard section 44 will readily separate from the outboard section 45 so that the device will occupy a minimum amount of space for storage or shipment. Also, by removing the nuts 114, the paddle units 111 can also be disassembled, that is by removing the nuts 114, the parts including the members 119, 115 and 112 can be removed from the shaft 89 so as to further minimize the space occupied by the disassembled device. When the device is being used, the reverse procedure is followed.

It will be noted that the elements 48 and 58 engage the bottom 41 of the boat when the parts are in the position shown in FIG. 2 so that the frame 46 will be properly steadied or maintained in its proper position at the rear of the boat when the device is being used.

The back rest 59 can also be detached if desired when the device is not being used.

The boat propelling mechanism of the present invention can be assembled on the boat with a minimum amount of effort and in a very short period of time, and likewise the device can be disassembled and removed from the boat with ease or facility.

With the parts arranged as shown in FIGS. 1 and 2, assuming that the boat is to be propelled in a forward direction, the following is an explanation of the operation thereof. The operator sits on the seat 64 and grips the handle 71 and by means of foot pressure on the pedals 54 causes the pedals 54 to rotate in a counter-clockwise direction, FIG. 2 and this causes a sprocket 53 to rotate in the same direction which in turn causes corresponding rotation or travel of the chain 69, and since the chain 69 is arranged in engagement with the sprocket 67 on the axle 65, it will be seen that the axle 65 will be turned. Since the sprocket 68 is also mounted on the axle 65, this rotation of the axle 65 will result in rotation of the sprocket 68 which in turn will move the chain 97, and with the chain 97 arranged in engagement with the sprocket 94, the sprocket 94 will also turn. The sprocket 94 is mounted on the axle 93 and the sprocket 95 is also mounted on the axle 93 so that rotation of the axle 93 will result in rotation of the sprocket 95. Because the chain 98 is trained over the sprockets 95 and 96, and because the sprocket 96 is fixedly secured to the shaft 89, it will be seen that this will result in rotation of the shaft 89 in the tubular members 88.

This rotation of the shaft 89 is transmitted to the pair of paddle units 111, so that with the handle 71 in the position shown in FIGS. 1 and 2, forward rotation of the pedals 54 results in rotation of the paddle units 111 in such a manner that blades 112 will strike the water and propel the boat forwardly, and as long as the handle 71 is in the position of FIGS. 1 and 2, both paddle units will be rotated simultaneously.

It is to be understood of course that if the boat is to be reversed that is moved to a rearward direction, the pedals 54 are rotated in a clockwise direction, FIG. 2, and this will cause corresponding rotation of the paddle units 111 in such a manner as to cause the boat to back up or reverse.

Furthermore, to steer the boat it is only necessary to turn the single lever or handle 71, and for example to turn or steer the boat to the right, by turning the handle 71 to the right, the column 70 will be rotated in the tubular portion 55 of the frame 46, and because the lug 35 is connected to the lower end of the column 70, and with the rod 72 connected to the lug 35, it will be seen that this turning of the handle 71 will cause corresponding movement of the rod 72. With the rod 72 arranged as shown in FIG. 2, that is with the rear

end of the rod 72 connected to the lugs 74 at the lower end of the rod 73, it will be seen that this will result in rotation of the rod 73, and because the rod 73 is connected to the rod 77 by means of the lugs 76, it will be seen that this will result in corresponding movement of the rod 77. The rod 77 has its rear end connected to the bell crank lever 143 as at 147, and the bell crank lever 143 is connected as at 144 to the pair of rods 141 so that this movement of the rod 77 will cause the pair of rods 141 to shift either to the left or right. As these rods 141 move or shift to the left or right, they cause pivotal movement of the yoke 138 about the pivot pins 139, and with the yokes 138 connected as at 140 to the portion 136 of the cone 135, it will be seen that this will result in shifting movement of the straight cone 135 on the shaft 89, FIG. 5. As the cone 135 shifts or moves back and forth on the shaft 89, the rollers 134 will cause the arms 133 to move in or out to thereby move the fingers 132 which have the cams 131 on their inner ends, so that with the cams 131 interposed between adjacent portions of the plates 121, this movement of the cams 131 will provide a means for counterbalancing the effect of the springs 127 so that the surfaces 123 of the plates 121 can be selectively arranged in or out of engagement with the rim portion 116 of the member 119. The member 119 is free to rotate on the shaft 89, while the member 118 is fixedly secured to the shaft 89 as at 126, and by means of the clutch assemblies, the members 119 can be driven directly and positively from the members 118, or else the members 119 can be permitted to remain stationary or in a non-rotating position on the shaft 89. Because the arms 115 fixedly secure the blades 112 to the members 119, it will be seen that when the members 119 are rotating, the blades 112 will also rotate, and similarly when the members 119 are stationary, the blades 112 are likewise stationary.

With the parts arranged as shown in the drawings, and with the handle 71 in the position shown in FIGS. 1 and 2, when foot pressure is applied to the pedals 54 to turn the pedals 54 in a forward direction, power will be transmitted through the drive mechanism to turn the paddle units 11 in such a manner that the blades 112 will engage the water to drive the boat forwardly. Similarly, when the pedals 54 are rotated in a reverse direction, the paddle units 111 will cause the boat to move backwards, and this results from the arrangement of the parts that constitute the drive mechanism. Thus the drive mechanism is such that with the handle 71 in FIGS. 1 and 2 position, power is transmitted from the pedals 54 to the sprocket 53, to the axle 52, then through the chain 69 to the sprocket 67, then to the axle 65 to the sprocket 68, then through chain 97 to sprocket 94, then to axle 93 and to sprocket 95. Power is then transmitted by chain 98 to sprocket 96 and thence to shaft 89 and shaft 89 is thus rotated in the tubular members 88 of the rigid framework 85. Because the member 118 of the clutch 117 is fixedly secured to shaft 89 by a suitable means such as set screw 126, FIG. 8, member 118 will always turn as the shaft 89 turns. However, member 119 is freely or loosely mounted on the shaft, and the pair of members 119 only turn when it is desired by the operator that these members 119 which carry the blades or paddles 112 shall turn. In other words, when handle 71 is in the FIG. 1 or FIG. 2 position, the parts are arranged and constructed so that both members 119 will turn at the same time in the same direction due to the provision of the parts shown.

Thus, the cams 131 push and engage portions of the plates 121 to maintain the arcuate outer edges 123 of the pair of plates 121 firmly against the rim 116 so that with the member 118 secured as at 126 to shaft 89, as shaft 89 rotates, the member 118 rotates therewith and causes corresponding rotation of member 119 due to the outwardly biased portion of the plates 121, and thus with the handle 71 in FIGS. 1 and 2 position, both paddle units 111 will

rotate in unison to drive the boat straight ahead or straight to the rear, depending upon the direction of the foot pedals 54.

Assume, for example, that it is desired to turn the boat to the left, it is only necessary to turn handle 71 to the left and due to the provision of the previously described structure, when the handle 71 is turned to the left, the cone 135 on the right side will be shoved outwardly so that cams 131 will urge the plates 121 into driving position with regard to rim 116 so that the paddle units 111 on the right side will continue to rotate. At the same time, the cone 135 on the left side will be pulled inwardly whereby the springs 127 will bias or move the pair of plates 121 of the left clutch inwardly, out of engagement with the rim 116 so that no power will be supplied to the left paddle unit whereby the boat will turn to the left because only the right paddle unit will be rotating. When making a right turn, the same principle applies, and of course, for a right turn, only the left paddle unit turns and the right paddle unit remains stationary or idles. This same action can be used when the boat is going in a forward or reverse direction. As stated previously, when one clutch cone moves inwardly, the other one moves outwardly, and the movement of the clutch cones in or out is accomplished due to the provision of the coacting parts such as the parts or elements 70, 35, 72, 74, 73, 76 and 77, as well as the bell crank lever 143 and the push-pull rods 141 which actuate the yokes 138 to shift the cones 135 in or out along the shaft 89.

The present invention is stylish and attractively constructed and provides good exercise for the user or operator, and the device is constructed so that maintenance costs are practically nil, and wherein the device provides trouble-free operation and of course there are no fuel costs since foot power is used in operating the device. Also the device is safe to use and provides a source of pleasure or fun and can be used for work or play, and instead of using the pedal arrangement, other sources of power can be utilized.

The cones 135 are straight and this arrangement makes it possible for both cones simultaneously to engage the roller levers of the clutch actuators.

The back rest 59 can be detached if desired when the device is not being used, or it can be pushed forward into a horizontal position to rest on the seat 64. In other words, a hinged arrangement can be used for the back rest to permit the seat to be moved to a forward position so that it will rest on top of the seat or saddle when not in use, and to remove the seat altogether, a screw can be taken out of the hinge.

Minor changes in shape, size and rearrangement of details coming within the field of invention claimed may be resorted to in actual practice, if desired.

What is claimed is:

1. A boat propelling mechanism for a boat which includes a transom and a bottom, comprising an inboard section arranged within the boat and including a rest for engagement with said bottom, said inboard section embodying a frame which includes a pair of first portions affixed to said rest, second and third portions arranged angularly with respect to the upper ends of said first portion and affixed thereto, a bushing at the junction of said second and third portions, a first axle journaled in said bushing, a first sprocket secured to said axle, foot pedals connected to said first axle, an upstanding fourth portion affixed to said third portion, a generally horizontally disposed fifth portion affixed to the lower portion of said second portion, an upstanding sixth portion affixed to the rear end of said fifth portion, and said sixth portion having a rest on its lower end for engagement with the bottom of the boat, a back rest connected to the upper ends of the sixth portion, an upstanding seventh portion having its lower end affixed to said fifth portion, an eighth portion extending between said sixth and seventh portions and affixed thereto, a ninth portion connected to said

fourth portion, an upstanding tenth portion affixed to said eighth and ninth portions, and said tenth portion having a seat thereon, a second axle journaled in the frame of the inboard section, second and third sprockets mounted on said second axle, an endless chain trained around said first and second sprockets, a column rotatably mounted in said fourth portion, a handle connected to said column, a lug connected to the lower end of said column, a first rod having its front end connected to said lug, a second rod rotatably mounted adjacent said sixth portion and said second rod being connected to said first rod by means of a lug, a bracket affixed to said sixth portion, a strap secured to said bracket, screw members extending through said strap, bushings receiving said screw members, set screws extending through said bushings for engaging said screw members, clamps affixed to said bushings for engaging the transom; said boat propelling mechanism further including an outboard section including a framework that embodies a first pair of spaced parallel members, cross pieces extending between said first members and secured thereto, aligned tubular second members secured to the rear ends of said first members, a shaft extending through said second members, angularly arranged third members affixed to said second members, fourth members secured to the front ends of said third members, spaced parallel bars secured to the inner ends of said fourth members, a horizontally disposed rod extending between said last named bars, fourth and fifth sprockets mounted on said last named rod, an endless chain trained over said third and fourth sprockets, a fifth sprocket on said shaft which extends through the second members, an endless chain on said fourth and fifth sprockets, a support piece for engaging the rear of the transom, cylinders connected to said support piece, a rod adjustably and telescopically connected to each of said cylinders, cross elements connecting the upper ends of said last named rods to said first members of the framework, a rod element extending between the first members of the framework, a tubular piece rotatably mounted on said last named rod, a connecting piece extending between said tubular piece and said support piece, a pair of similar paddle units detachably mounted on the ends of the shaft that extend through the second members of the framework, and each of said paddle units comprising a support member rotatably mounted on said shaft, and said support member having an apertured central portion for the projection therethrough of the shaft, and said support member having a plurality of radially disposed arms affixed thereto, angularly arranged blades affixed to said arms, said support member including a circular rim, a clutch unit comprising a body member contiguous to said support member, and said body member having a central opening therein for the projection therethrough of said shaft, a hub on the central portion of said body member, a set screw securing said last named hub to said shaft, a pair of spaced apart movable plates interposed between said body member and support member, spring members connected to the hub of the body member for normally urging said plates out of engagement with said rim, a pair of cams interposed between said plates, fingers connected to said cams, arm pieces connected to said fingers, rollers connected to the inner ends of said arm pieces, a straight

cone slidably mounted on the shaft that extends through the second members of the framework adjacent each end of the shaft, said cone being engaged by said rollers, said cone having a grooved portion, brackets affixed to second members of the framework, yokes pivotally connected to said brackets and engaging said grooved portions, push-pull rods connected to said yokes, a bell crank lever connected to said last named push-pull rods, and a rod connecting said bell crank lever to a lug that is connected to the top of the rod that is arranged contiguous to the sixth portion of the inboard section.

2. In a boat propelling mechanism for a boat that includes a transom and a bottom, an inboard section arranged within the boat and including portions engaging the bottom of the boat, first, second and third sprockets supported by said inboard section, foot pedals for rotating said first sprockets, a chain connecting said first and second sprockets together, a back rest and a seat on said inboard section, a steering column rotatably supported by said inboard section, a handle connected to said column, an outboard section including a framework that has a shaft rotatably mounted in the rear portion thereof, fourth and fifth sprockets supported by said framework, chains connecting said third and fourth sprockets together, a sixth sprocket mounted on said shaft, chain means connecting said fifth and sixth sprockets together, a support piece for engaging the rear of the transom, adjustable telescopic means connecting said support piece to said framework, clamps connected to said outboard section for engagement with the transom, a pair of paddle units mounted on said shaft and each paddle unit including a support member having angularly arranged blades connected thereto, said support member including a circular rim, a clutch element including a body member contiguous to said support member and said body member having a hub affixed to said shaft, plates interposed between said body member and support member, spring members for coaction with said plates, cams interposed between said plates, fingers connected to said cams, arms connected to said fingers, rollers connected to said arms, straight cones slidably mounted on said shaft and said cones being engaged by said rollers, yokes engaging said cones, push-pull rods pivotally connected to said yokes, a bell crank lever connected to said push-pull rods, and connecting means including rods and lugs operatively connecting said steering column to said push-pull rods whereby manual movement and turning of the handle will actuate the clutch units to control rotation of the paddle units.

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