

Oct. 18, 1960

L. E. ARCHER
WATER SCOOTER

2,956,534

Filed Jan. 29, 1958

2 Sheets-Sheet 1

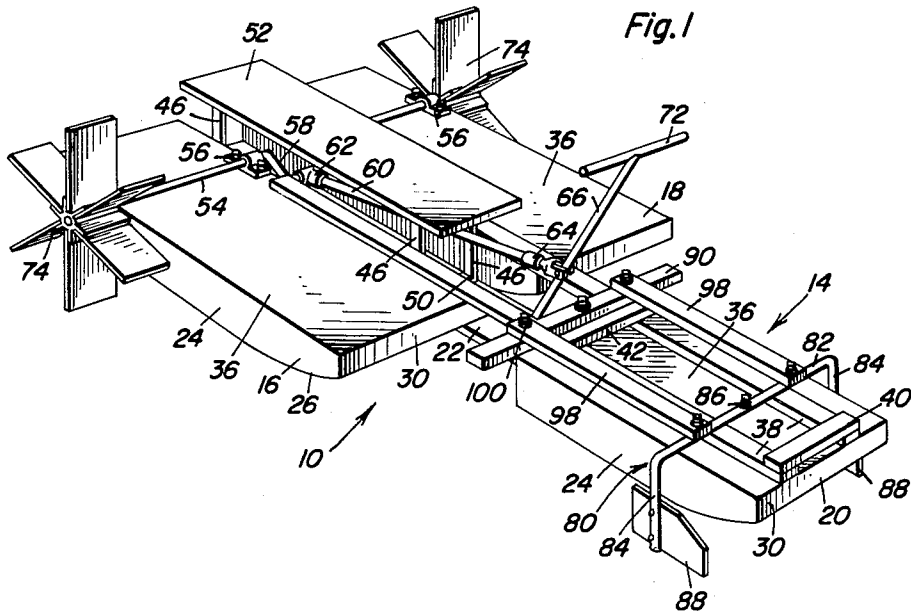


Fig. 2

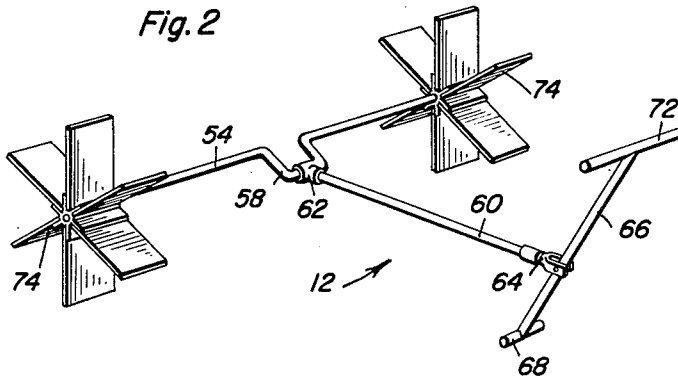
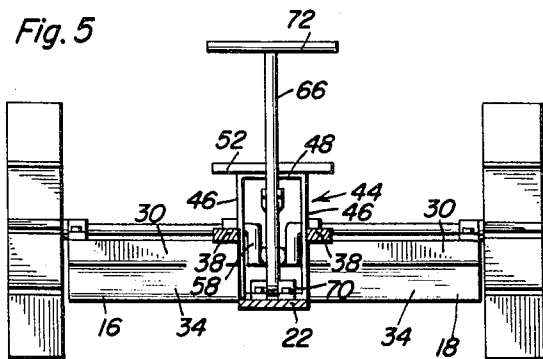


Fig. 5



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2 Sheets-Sheet 2

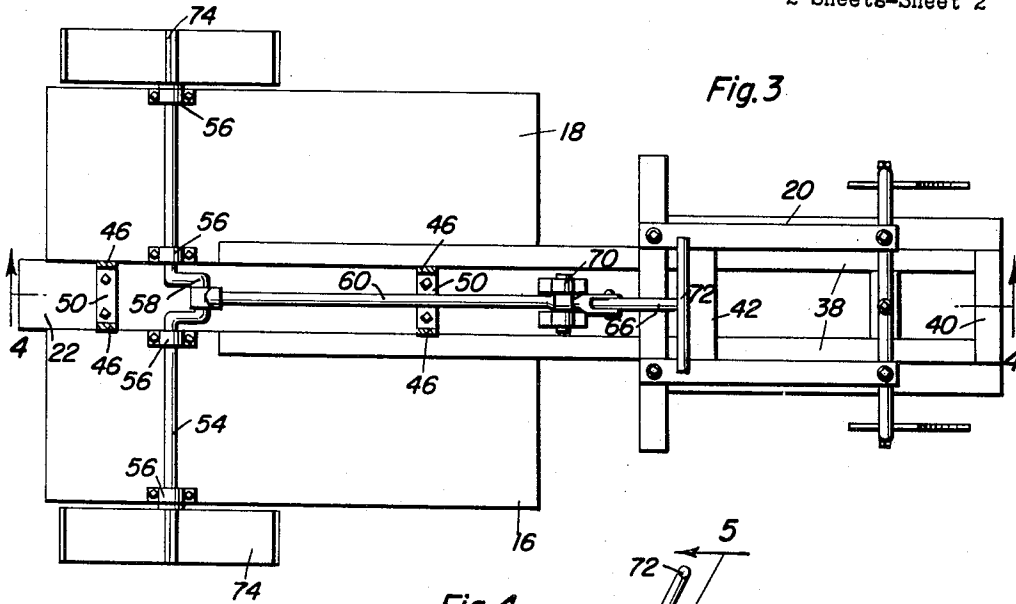


Fig. 3

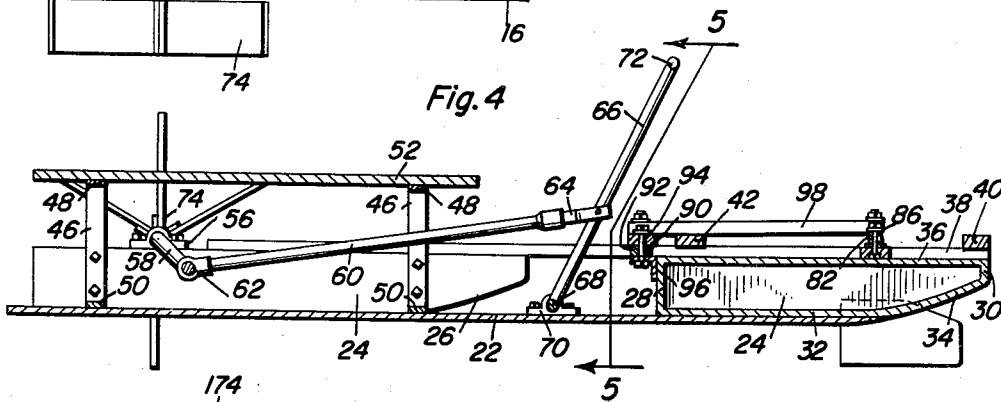


Fig. 4

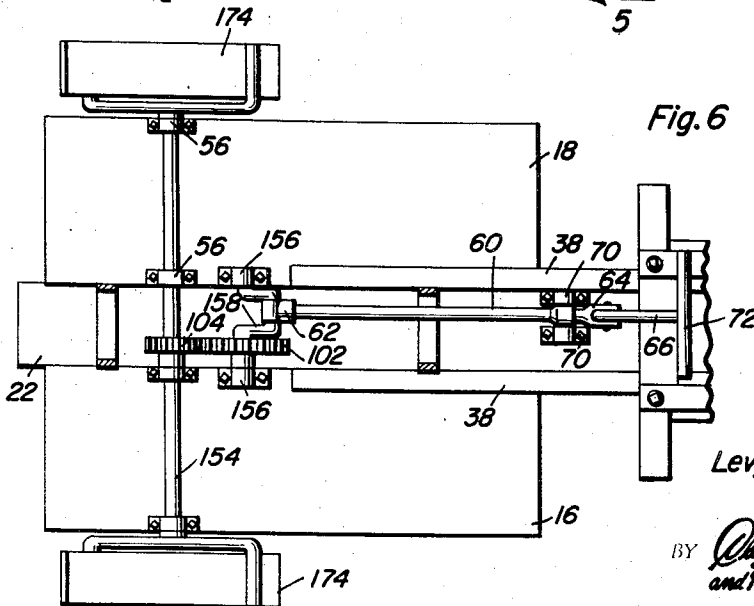


Fig. 6

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WATER SCOOTER

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2 Claims. (Cl. 115—23)

This invention relates generally to devices to be propelled through water, and more particularly to a manually operated water scooter.

The primary object of this invention is to provide a water scooter which may be manually operated, and which is constructed of pontoons so as to practically eliminate the possibility of the craft from sinking.

Another object of this invention is to provide a device of the character described wherein an operator of the boat may propel and steer the scooter from a seat provided for the purpose, without much exertion being required.

A further object of this invention is to provide a device of the character described which may be propelled by an operator's hands, and may be steered by the feet of an operator, so that the scooter is completely under the control of an operator at all times.

An even further object of this invention is to provide a device of the character described wherein novel means are provided for propelling the scooter, these means including a hand lever which may be oscillated so as to drive paddles which are the propelling means for the scooter.

An even further object of this invention is to provide means in a water scooter, wherein the oscillating movement of the hand lever may be designed so that upon each oscillation of the hand lever, the paddles will be given more than one-half of a rotation as normally expected, so that the scooter may be propelled fast if desired.

Another object of this invention is to provide a device which is simple and efficient, yet still being stable and durable, resulting in a long life for the device.

This invention contemplates the use of a plurality of pontoons, one being located in the forward portion of the scooter and two being located in the rear, these pontoons being connected together. A seat is provided in the rear portion of the scooter. Paddle wheels are provided on either side thereof, and may be operated by a hand lever which is to be oscillated by a user sitting on a seat provided. The rudder is located in the forward portion of the boat, and a dual rudder is provided which is pivoted in the medial portion thereof. A linkage is connected thereto, and provided so as to be in position near the hand lever, so that a user who is sitting on the seat may oscillate the hand lever, and at the same time steer the scooter with the feet, because of the linkage being located in a convenient position for the feet to rest thereon. The hand lever has a link attached thereto which in turn drives a crank. This crank may be either directly connected to the paddle wheels, or drive the paddle wheels through a gear train.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein

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like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view of the water scooter comprising the present invention;

5 Figure 2 is a perspective view of the drive and propelling means for moving the water scooter;

Figure 3 is an elevational plan view of the device illustrated in Figure 1, with the seat being removed for clarity;

10 Figure 4 is a vertical sectional view taken substantially along the plane defined by reference line 4—4 of Figure 3, illustrating details of construction thereof;

Figure 5 is a vertical sectional view taken substantially along the plane defined by reference line 5—5 of Figure 4, illustrating the scooter from another angle; and

15 Figure 6 is an elevational plan view with the seat removed, similar to Figure 3, illustrating a modified form of drive means.

Referring now more specifically to the drawings, the numeral 10 generally designates the float or body portion of the water scooter comprising the present invention. This scooter is provided thereon with means for propelling the same which is designated by numeral 12, as well as a steering mechanism 14.

20 The body 10 is constructed of three pontoons 16, 18, and 20, connected together by means of a keel or base board 22 which extends essentially and longitudinally of the body 10. The pontoons 16 and 18 are located in the rearward portion of base plate 22 and on either side thereof. The pontoon 20, is located in the forward portion of base plate 22 and is overlying the base plate so as to be located centrally with respect to the rearward pontoons 16 and 18.

Each of the pontoons is constructed of side members 24, which are substantially rectangular, however, the lower forward corner thereof is rounded as at 26 to provide a more streamlined surface for moving through the water. A back end 28 serves to connect the side members 24 together. A front end 30, connects the forward portions of the sides together near the upper end thereof. A bottom 32 is provided for each of the pontoons, and this bottom is curved upwardly as at 34 so as to conform to curve 26 in the side 24. This curved portion 34 of bottom 32 allows the easier movement of the pontoons through the water. Each of the pontoons is provided with a flat top 36 so as to provide a substantially level working, or walking surface for either people or apparatus which may be affixed thereto.

As previously mentioned, the rearward pontoons 16 and 18 are connected to the rearward portion of base plate 22, while the forward pontoon 20 is connected across the front portion of base plate 22 and overlies the same. Further connecting the pontoons together, are a pair of longitudinal straps 38 which are connected to the upper surface 36 of pontoon 20, and extend rearwardly therefrom and are accommodated on the forward inner top portions of pontoons 16 and 18. Forward and rearward reinforcing members 40 and 42 respectively, are secured between the longitudinal strap members 38, along the front wall 20, and the rear wall 28 respectively.

Substantially rectangular brackets 44 having side members 46, an upper horizontal member 48, and a lower horizontal member 50, are disposed between the pontoons 16 and 18, in such a position that the lower horizontal member 50 rests upon base plate 22, while the side members 46 rest upon the inner side walls 24 of the pontoons 16 and 18. This bracket 44 is firmly affixed to the pontoons and base plate and has a seat 52 rigidly connected thereto. Thus, it may be seen that the seat is firmly held in position by being fixed to the substantially rectangular brackets 44. As may be seen in Figure 4, the forwardmost edge of seat 52 is located slightly

rearwardly of the forwardmost portions of rearward pontoons 16 and 18.

The propelling mechanism 12 of the device is constructed of a crank shaft which is rotatably mounted near the rear of the body 10, and extends transversely of the body. This crank shaft 54 is journaled within bearings 56. The crank shaft 54 has an offset portion 58 which is generally U-shaped, and which is disposed beneath seat 52, and between the inner side walls 24 of pontoons 16 and 18. A link 60 is pivotally connected at one end as at 62 to the offset portion 58 of crank shaft 54. The other end of this link 60 is provided as at 64 with a bifurcated bracket which may have a pin inserted there-through, so that the link 60 may be pivotally connected to an oscillating lever 66. At the lower end of oscillating lever 66, is disposed a transverse shaft 68 which is journaled in a bearing 70, fastened to base plate 22, slightly forwardly of the pontoons 16 and 18, so as to dispose the oscillating lever 66 within easy reach of a person seated upon the forward portion of seat 52. A handle 72 is connected to the upper end of lever 66, and is disposed transversely thereof, so as to provide a convenient gripping surface for the user. Paddle wheels 74 are fastened to the outer ends of crank shaft 54, and are disposed outwardly from the pontoons 16 and 18.

The steering mechanism 14, is fastened to the forward pontoon 20. This mechanism is constructed of a substantially inverted U-shaped member 80 having a bight portion 82 horizontally disposed about the forward portion of pontoon 20, and depending vertical legs 84, which are disposed on either side of pontoon 20 and project slightly therebelow. The U-shaped member 80 is pivoted to pontoon 20 by any suitable pivotal connection as at 86. Rudders 88 are connected to the lower ends of vertical legs 84 of U-shaped member 80, so that upon pivotal movement of U-shaped member 80 about pivotal connection 86, the rudders 88 will be moved at an angle with respect to the body 10 and a resultant turning of the boat will be effected. A steering bar 90, is pivotally connected to a horizontal member 92 which is connected between longitudinal straps 38, at a point just rearwardly of pontoon 20. This steering bar 90, is connected to horizontal member 92 by means of a bolt 94, which passes through angle member 96, and these three members are connected by means of a nut affixed to the bolt 94. The angle member 96 is connected along the upper medial portion of rear wall 28 of pontoon 20. Thus, it will be realized that the inverted U-shaped member 80 is pivoted to the forward portion of pontoon 20, while the steering bar 90 is pivoted near the rearwardly portion of pontoon 20. Connecting members 98 are disposed between steering bar 90 and bight portion 82 of the U-shaped member, and the connections between connecting members 98 and the bight portion 82 and steering rod 90, is a pivotal connection as at 100, so that a virtual four-bar linkage is thereby formed.

In use, an operator would sit on the forward portion of seat 52, with his feet resting on the outer edges of steering bar 90, and with his hands on handle 72. Then, by a mere pumping or oscillating motion forward and rearwardly the lever 66 will be oscillated, so as to turn the paddles 74. Further, in the event that a turning of the scooter is desired, it is merely necessary to push with the feet upon the bar 90, and if a turning movement to the left is desired, then a pressure would be exerted with the right foot, and vice versa for the right turn.

In Figure 6 is illustrated a slightly modified form of the device, wherein the crank 158 is journaled in bearings 156. A gear 102 is affixed to this crankshaft 158, and meshes with a smaller gear 104 which is connected to axle 154 upon which paddles 174 are mounted. Thus, for

the same oscillating motion of lever of lever 66, because of the gearing used, a greater number of revolutions of the paddles 174 will take place than with the other device illustrated wherein there is a direct connection between the link 60 and the shaft to which the paddles are connected.

It may now be seen that there is herein shown and described a new and improved type of water scooter which may be propelled and steered easily by a single person from a single position.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A water vehicle comprising: a pair of parallel rear pontoons, a pair of vertical, substantially rectangular brackets securing said rear pontoons together in spaced relation, a seat mounted on the tops of the brackets, a keel mounted on the bottoms of the brackets and projecting forwardly beyond said rear pontoons, a front pontoon mounted on the forward portion of the keel, means for propelling the vehicle, and means for steering said vehicle, the second named means comprising a generally U-shaped, transverse member straddling the front pontoon and pivotally secured at an intermediate point thereto for horizontal swinging movement, rudders on the end portions of said member, a horizontally swingable foot bar pivotally secured at an intermediate point on the front pontoon rearwardly of said member and operable from the seat, and a pair of parallel links operatively connecting said foot bar to said member.

2. A water vehicle comprising: a pair of parallel rear pontoons, a pair of vertical, substantially rectangular brackets securing said rear pontoons together in spaced relation, a seat mounted on the tops of the brackets, a keel mounted on the bottoms of the brackets and projecting forwardly beyond said rear pontoons, a front pontoon mounted on the forward portion of the keel, means for propelling the vehicle, and means for steering said vehicle, the first named means comprising a rotary shaft mounted transversely on the rear pontoons and including a crank operable therebetween, paddle wheels fixed on the end portions of said shaft, a hand lever pivotally mounted on the keel forwardly of the seat and operable therefrom, and a pitman beneath the seat operatively connecting said hand lever to the crank, the second named means comprising a generally U-shaped, transverse member straddling the front pontoon and pivotally secured at an intermediate point thereto for horizontal swinging movement, rudders on the end portions of said member, a horizontally swingable foot bar pivotally secured at an intermediate point on the front pontoon rearwardly of said member and operable from the seat, and a pair of parallel links operatively connecting said foot bar to said member.

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