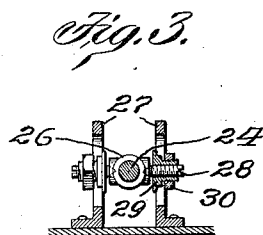
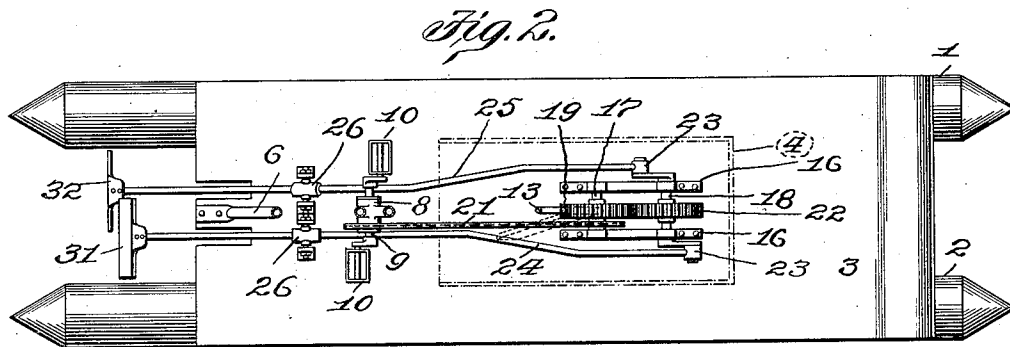
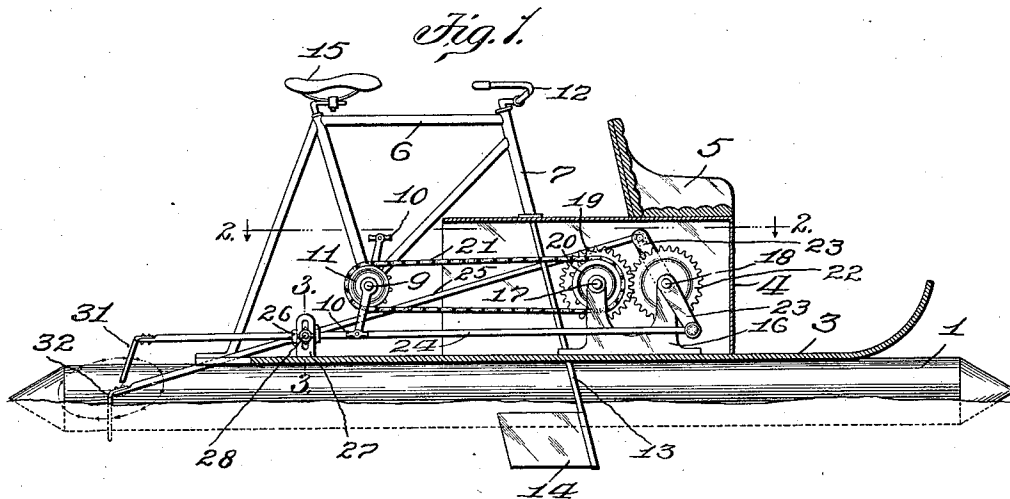


A. MAYER.
PROPELLER FOR BOATS.
APPLICATION FILED JULY 3, 1911.

1,060,776.

Patented May 6, 1913.



Witnesses:
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UNITED STATES PATENT OFFICE.

ABRAHAM MAYER, OF RED BUD, ILLINOIS.

PROPELLER FOR BOATS.

1,060,776.

Specification of Letters Patent.

Patented May 6, 1913.

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To all whom it may concern:

Be it known that I, ABRAHAM MAYER, a citizen of the United States, and resident of Red Bud, Randolph county, Illinois, have invented certain new and useful Improvements in Propellers for Boats, of which the following is a specification, containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in propellers for boats, and has for its object the construction of a pair of paddles which are crank operated and which are directed to move in a path in which the paddles are first dipped into the water then moved rearwardly in a substantially horizontal plane, then moved bodily from the water and returned to their initial starting points in a course wholly out of the water, thereby offering the least resistance possible to the paddles in their movements and obtaining from the paddles, when in the water, a maximum of boat propelling energy.

With the above purposes in view my invention consists in certain novel features of construction and arrangement of parts as will be hereinafter more fully described, pointed out in the claim and illustrated by the accompanying drawings, in which—

Figure 1 is a longitudinal, sectional elevation of a craft of the catamaran type equipped with my improved propeller mechanism. Fig. 2 is a sectional plan of the craft taken on the line 2—2 of Fig. 1; and Fig. 3 is an enlarged, detail, sectional elevation of the bearing for one of the shafts which carries the propeller blades, taken on the line 3—3 of Fig. 1.

Referring by numerals to the accompanying drawings: 1 and 2 designate floats which are cylindrical tubes pointed at each end, and 3 designates the deck or platform which is secured to the floats and which is preferably constructed as shown, with its forward end turned upwardly.

4 designates a casing which is open at its rear end and upon which is located adjacent its forward end a seat 5.

6 designates a frame which is substantially like the ordinary diamond-shaped bicycle frame having its head 7 resting upon the casing 4. The frame 6 is provided with the ordinary crank hanger 8 in which the crank 9 is mounted and upon which crank the pedals 10 are secured.

11 designates a sprocket wheel secured for rotation with the crank 9.

12 designates handles, the stem 13 of which is passed down through the head 7 and extends to a point somewhat below the water line and to which stem is secured a rudder 14.

15 designates a seat located upon the frame 6 for the operator.

16 designates bearing blocks which are secured to the deck 3 and inclosed by the casing 4.

Journaled for rotation in the bearing blocks 16 are the shafts 17 and 18, and secured for rotation with the shaft 17 is a gear wheel 19 and a sprocket wheel 20, which sprocket wheel is connected with the sprocket wheel 11 by means of a chain 21. Mounted for rotation with the shaft 18 is a gear wheel 22 meshing with the gear wheel 19 and carried by the shaft 18 are the cranks 23. Connected with the cranks 23 are the rods 24 and 25.

26 designates sleeves which embrace the rods 24 and 25 and which sleeves are mounted upon bearing blocks 27 by means of the blocks 28, the trunnions being mounted in bearings 29 portions of which are inserted through slots in the bearing blocks 27 and which portions are externally threaded to receive the lock nuts 30 so that the trunnions may be vertically adjusted in the bearing blocks 27.

31 and 32 designate paddles which are secured to the rearmost ends of the rods 24 and 25.

While I have shown and described a craft of the catamaran type and a pedally operated mechanism for the movement of the paddles, I do not wish to be understood as limiting myself to this construction, as it is obvious that a motor of any type may be substituted for the pedally operated cranks.

In the practical operation of my propelling mechanism the cranks 9 are operated in a manner common to bicycles and through the medium of the sprocket wheels 11 and 20 and the chain 21 the gear wheel 19 is rotated in the same direction as the sprocket wheel 11. Through the medium of the gear wheel 22, which meshes with the wheel 11, the motion of the cranks 23 is reversed relative the motion of the cranks 9, thus as the operator pedals forwardly the cranks 23 are operative rearwardly so that, when the forward ends of the rods 24 and 25 are carried

downwardly and forwardly by the cranks 23, the paddles are brought forwardly out of the water and, as the cranks are moved upwardly and rearwardly, the paddles are
5 dipped into the water and moved rearwardly, the rocking motion of the rods being permitted and guided by the sleeves 26, thus each paddle will be dipped in a vertical position into the water, moved rearwardly in
10 a substantially horizontal plane and then lifted in a substantially vertical position out of the water at the end of the rearward stroke.

I claim:

15 In a propeller for boats, a pedally-operated gear wheel, a shaft in advance of said gear wheel, a gear wheel carried by said shaft in mesh with the pedally-operated gear wheel, a pair of cranks carried by said shaft,
20 a pair of rocking sleeves arranged in a plane

beneath said shaft, a pair of rods supported by said sleeves and having their ends connected with said cranks, and paddles carried by said rods and arranged at an angle other than a right angle relative to the rods, 25 whereby the cranks will be rotated in a direction opposite the pedally-operated gear wheel and whereby the paddles will be dipped into the water at an angle relative to the surface of the water, then straightened 30 to a substantially vertical position, and then lifted out of the water at an angle relative to the surface.

In testimony whereof, I have signed my name to this specification, in presence of two 35 subscribing witnesses.

ABRAHAM MAYER.

Witnesses:

E. L. WALLACE,
J. R. FRAME.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."