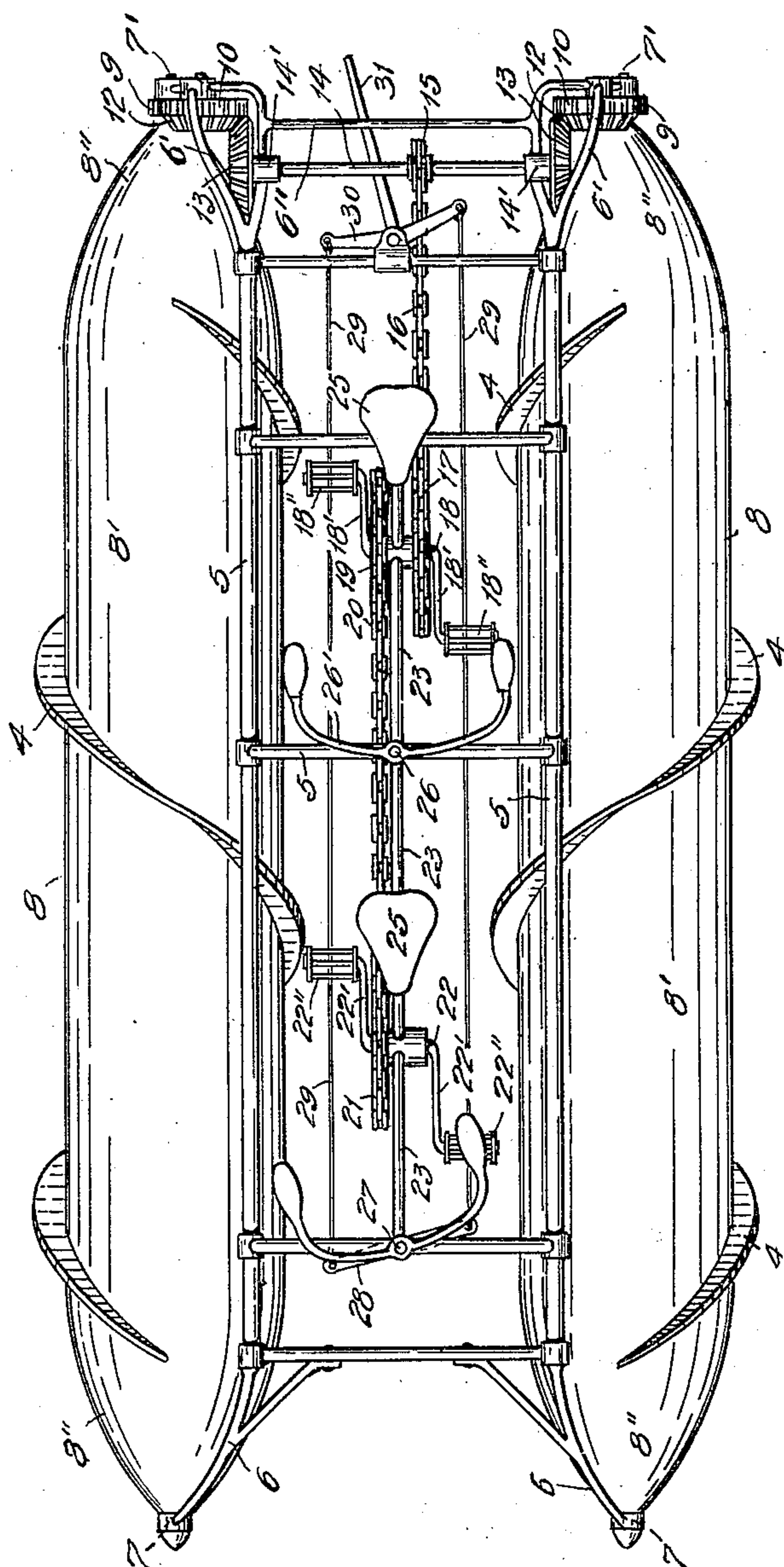


No. 868,183.

PATENTED OCT. 15, 1907.

J. HEGGEN.
WATER BICYCLE.
APPLICATION FILED MAR. 16, 1907.

2 SHEETS—SHEET 1.



22

WITNESSES:
Horace Barnes.
E. H. Alvord

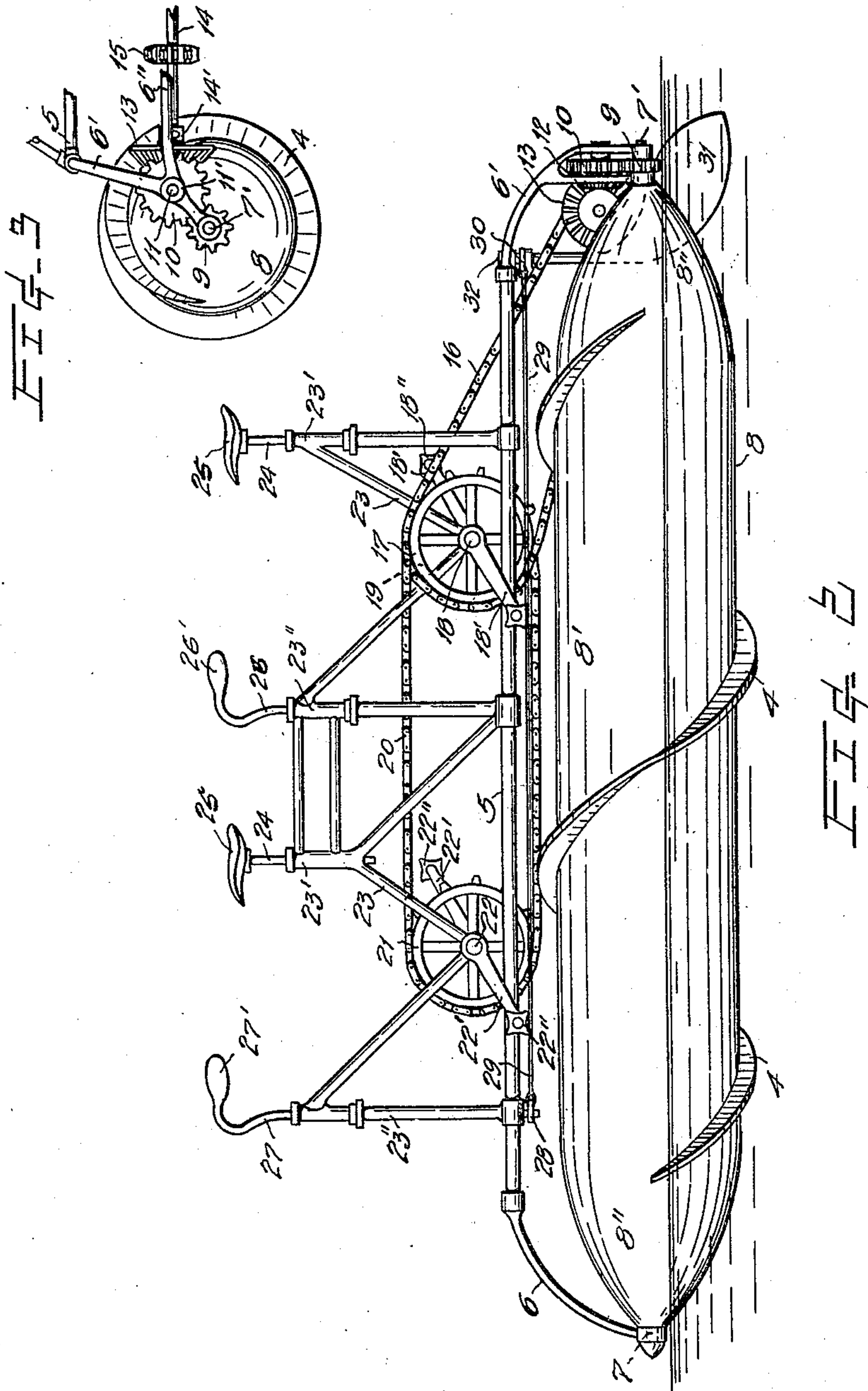
INVENTOR
John Heggen
BY
Pierre Barnes
ATTORNEY

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ATTORNEY

UNITED STATES PATENT OFFICE.

JOHN HEGGEN, OF SEATTLE, WASHINGTON.

WATER-BICYCLE.

No. 868,183.

Specification of Letters Patent.

Patented Oct. 15, 1907.

Application filed March 16, 1907. Serial No. 362,620.

To all whom it may concern:

Be it known that I, JOHN HEGGEN, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Water-Bicycles, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to marine vessels; and has for its object the provision of simple and efficient propelling means whereby a boat of peculiar construction can be driven at a high rate of speed.

The invention consists in a boat or vessel having longitudinally arranged buoyant members which are provided upon their peripheries with convolute blades whereby the vessel is propelled through the rotation of the said members.

The invention further consists in the novel construction, adaptation and combination of parts substantially as hereinafter described and claimed.

In said drawings, Figure 1 is a plan view of a vessel embodying my invention; Fig. 2, a side elevation of the same; and Fig. 3, a fragmentary rear end elevation.

Referring to the drawings, 5 designates the frame-work which is desirably constructed of pipe as possessing great strength in relation to its weight, and having at its ends extensions 6, 6' provided with journal bearings for the axial gudgeons 7, 7' of the longitudinally disposed members 8. These members are constructed of light metal shells and are each formed of a cylindrical central portion 8' with tapering ends 8'' so as to combine considerable buoyancy without offering a great amount of head resistance to the water.

Formed or provided upon the peripheral surfaces of said members are helically arranged blades 4 extended preferably to a short distance beyond the central cylindrical portions thereof and convoluting in reverse directions as illustrated in Fig. 1. Towards their ends the depths of the blades are gradually diminished to nothing at their extremities, thus affording a good entrance and clearance when operating in the water and at the same time not endangering the blades should the vessel encounter floating objects or get aground.

Fixedly secured to the rear gudgeon 7', desirably, are spur gear wheels 9 which mesh with pinions 10 upon longitudinal shafts 11 which also carry bevel gears 12 which in turn are respectively driven by bevel pinions 13 upon a transverse power shaft 14.

The rear extensions 6' of the frame are forked and at their lower ends are secured to bearings 11' provided for shafts 11. Bearings 14' for power shaft 14, are also supported from extensions 6'. Transverse rod 6'', supports and rigidly connects said forked rear extensions.

The power shaft 14 may be driven from any suitable source of power, as a gasoline, or electric motor, but desirably by manually operated devices such as illustrated in the drawings. Such devices comprise a sprocket

wheel 15 upon the shaft 14 which is driven by a chain 16 from a wheel 17 upon shaft 18 which has also mounted thereupon another wheel 19 operatively connected by an endless chain 20 with a wheel 21 upon a shaft 22. The shafts 18 and 22 are severally provided with cranks 18' and 22' terminating in pedals 18'' and 22'' and are journaled in bearings provided in frame superstructure 23 which likewise includes upright tubular standards 23', and 23''. 60

The standards 23' have socketed therein vertically adjustable posts 24 which support saddles 25 for the operators; and the standards 23'' carry respectively the posts 26 and 27 for the handle-bars 26' and 27'. The post 27 is provided at its lower end with a yoke-bar 28 which is connected by lines 29 with a tiller-yoke 30 upon the stock of a rudder 31 which is pivotally connected to attachments 32 of the frame-work. 65

The operation of the invention is as follows: The occupants of the saddles through power exerted through their feet upon the crank-pedals communicate, through the intermediate mechanism, rotary motion in reverse directions to said buoyant members and through the action of the helical blades thereon upon the water the vessel is propelled in a forward or backward motion according to the direction in which the pedals are actuated. The vessel is steered by the occupant of the forward saddle manipulating the handle-bar to swerve the rudder in the proper direction. 70

I do not intend to confine myself in every particular to the construction illustrated in the drawings as changes can obviously be made therefrom without departing from the spirit of my invention or sacrificing its advantages. For example, the number and position of saddles for operators may be varied to suit special demands. 80

Having described my invention, what I claim as new and desire to secure by Letters-Patent, is—

1. A water bicycle embodying two buoyant members provided with blades, a frame comprising two longitudinally disposed members having extensions at their outer ends curved downwardly and outwardly, transverse members at intervals along the length of said longitudinal members connecting the latter, a gear wheel secured to the rear end of each of said buoyant members, a pinion meshing with each of said gear wheels and supported from said frame, a bevel gear mounted for rotation with each of said pinions, a transverse shaft carrying a bevel gear at each of its ends meshing with each of said first named bevel gears, and means for driving said shaft. 100

2. A water bicycle embodying two buoyant members, a frame comprising connected longitudinal members at their rear ends being forked and turned downwardly and then uniting and at their united portions forming supports for the rear ends of said buoyant members, a transverse connecting rod secured to said forked extensions, and driving means for said buoyant members. 105

3. A water bicycle embodying a pair of buoyant members, a frame comprising longitudinal and transverse members, said longitudinal members at their front and rear ends being turned downwardly and outwardly, and at their 115

rear being forked and connected one with the other, driving gears on the rear ends of said buoyant members, a shaft supported from said forked rear ends of said frame, said shaft carrying driving gears, and means operated by said shaft driving gears to actuate said gears of said buoyant members.

5 4. A water bicycle embodying buoyant members, a frame comprising two longitudinal members having extensions at their outer ends curved downwardly and outwardly, transverse members connected to said longitudinal members, a saddle supported from said frame, a handle bar supported from the frame a driving shaft secured to the rear extensions of the frame, means for operating

said shaft, bevel pinions on each end of the shaft, a bevel pinion meshing with each of said first named pinions, a gear rotated by each of said second named pinions, and second gears meshing with the first named gears and secured to said buoyant members. 15

In testimony whereof I affix my signature in presence of two witnesses.

JOHN HEGGEN.

Witnesses:

PIERRE BARNES,
E. H. ALVORD.