

M. SZEGEL.
WATER CYCLE.

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1,104,229.

Patented July 21, 1914.

3 SHEETS—SHEET 1.

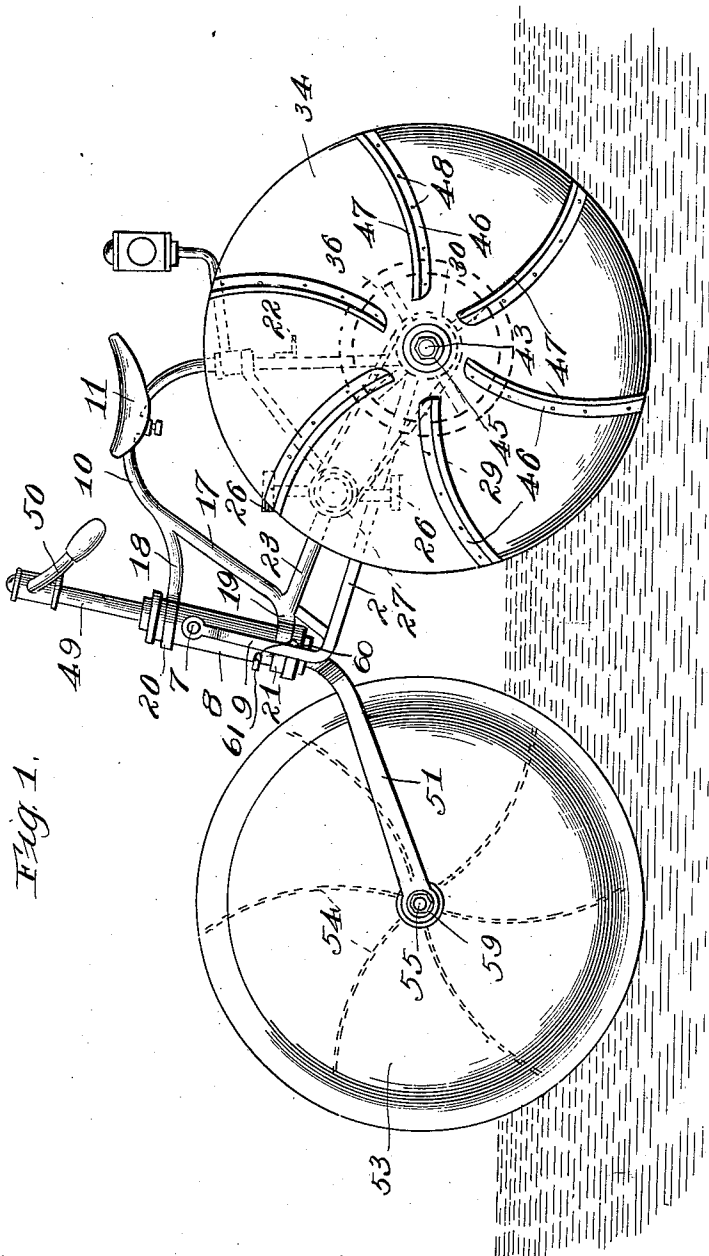


Fig. 1.

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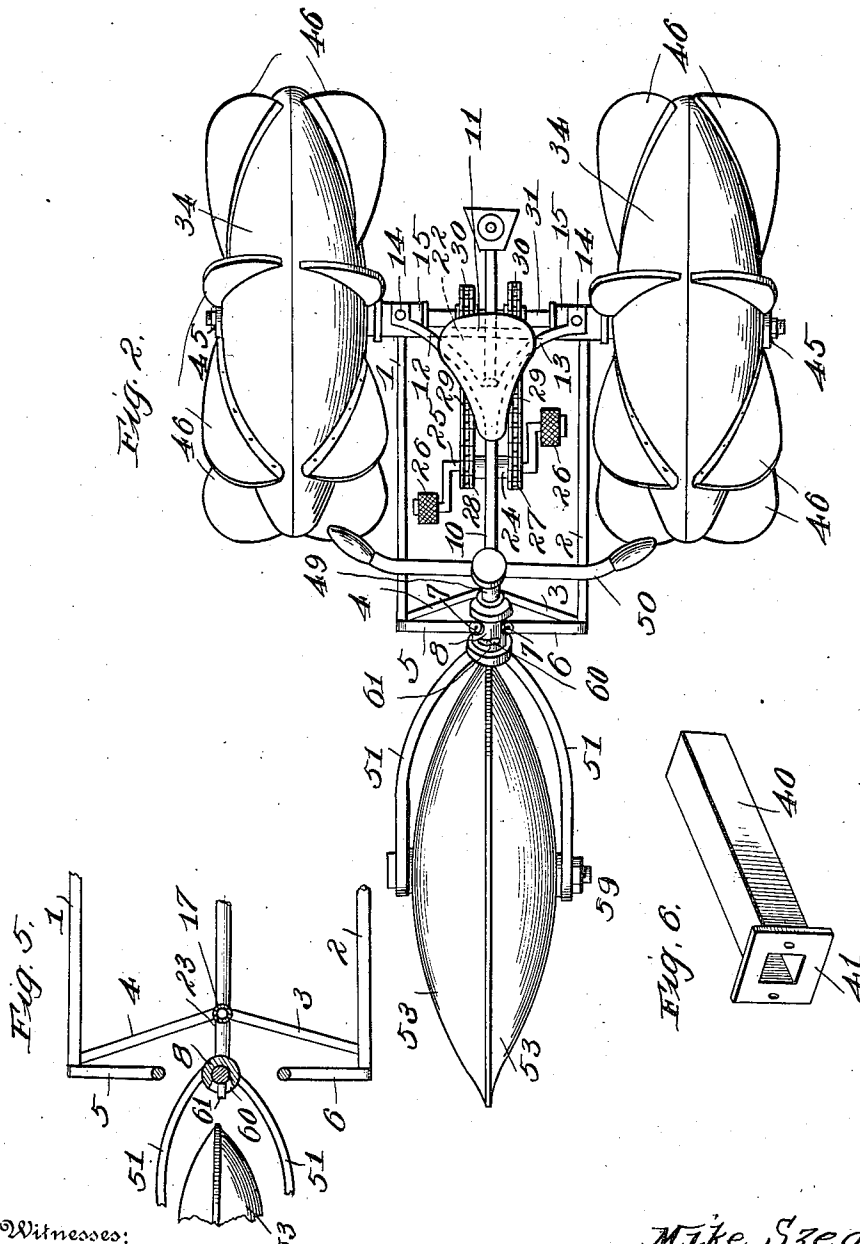
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3 SHEETS—SHEET 2.



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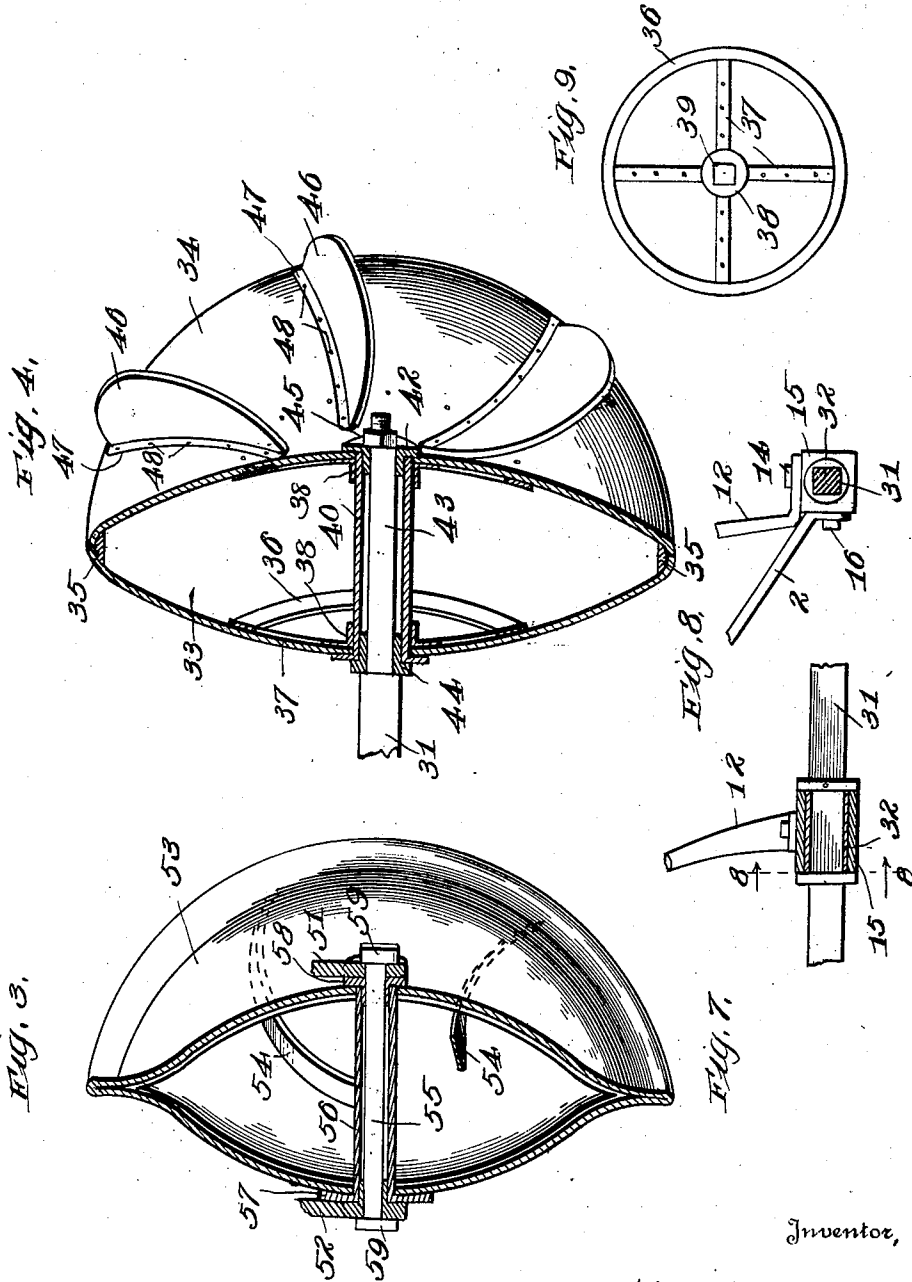
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WATER-CYCLE.

1,104,229.

Specification of Letters Patent.

Patented July 21, 1914.

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To all whom it may concern:

Be it known that I, MIKE SZEGEL, a subject of the Emperor of Austria-Hungary, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Water-Cycles, of which the following is a specification.

This invention relates to water cycles.

One object of the invention is so to improve the construction of the buoyant propellers, as without increasing their weight, materially, to enhance their stability, and thus their efficiency in operation.

A further object is to improve the manner of constructing and assembling the parts of the supporting frame, whereby with a minimum of lightness to secure the mechanism of strength to enable it successfully to withstand lateral and torsional strains, to which it will be subjected in use.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and arrangement of parts of a water cycle, as will be hereinafter fully described and claimed.

In the accompanying drawings forming a part of this specification, and in which like characters of reference indicate corresponding parts:—Figure 1 is a view in side elevation of a water cycle constructed in accordance with the present invention. Fig. 2 is a top plan view of the machine. Fig. 3 is a perspective sectional view of a steering wheel of the apparatus. Fig. 4 is a similar view through one of the buoyant propellers. Fig. 5 is a fragmentary detail view in plan, and partly in section, of a portion of the supporting frame and steering wheel. Fig. 6 is a perspective view of a form of support used in conjunction with all of the wheels. Fig. 7 is a fragmentary detail view, partly in section, showing the manner of assembling the supporting frame with the rear axle. Fig. 8 is a transverse sectional view through the rear axle, showing further the means for securing parts of the supporting frame thereof, and Fig. 9 is a view in side elevation of a reinforcement that may be employed in conjunction with the buoyant propellers in order to reinforce the connection of the shaft therewith.

The frame of the machine which constitutes one of the essential features of the invention, is, when viewed in plan, of substan-

tially rectangular form, and comprises two side bars 1 and 2 that are connected at their front by two angularly-disposed bars 3 and 4, each of the bars 1 and 2 having projecting inwardly therefrom and at right angles thereto, two bars 5 and 6, the terminals of which are secured by rivets or bolts 7 to the steering wheel post 8, as clearly shown in Fig. 1. As shown in this latter figure, the side bars 2 are bent upwardly at right angles to their length to provide extensions 9, one of which is clearly shown in Fig. 1, and from these extensions project the bars 5 and 6. The seat support comprises an arched bar 10 upon which is mounted the seat 11, the rear depending end of which is forked to provide two braces 12 and 13, the terminals of which are rigidly secured at 14 to the two shaft bearings 15 to the forward side of which are rigidly secured the terminals of the side bars 1 and 2, as by bolts 16, one of which is shown in Fig. 8. The forward portion or member 17 of the arched bar is provided with two forwardly-extending projections 18 and 19, each of which is provided with a collar 20 and 21 respectively that embrace the steering wheel head, as clearly shown in Fig. 1, and thus secures a rigid connection between the latter part and the frame. The members 12 and 13 are connected and rendered rigid by a brace 22 indicated by dotted lines in Figs. 1 and 2.

Projecting rearwardly from the front bar 7 of the seat support is an arm 23 provided at its rear end with a bearing 24 in which is journaled the crank shaft 25 carrying the usual pedals 26. The crank shaft carries at each extremity of the bearing a sprocket wheel 27 and 28 respectively, and these wheels are engaged by sprocket chains 29 that pass around the sprocket wheels 30 mounted on the rear shaft 31. This shaft as clearly shown in Figs. 7 and 8 is rectangular in cross-section and engages a sleeve or bushing 32 that rotates within the bearings 15. This shaft 31 carries at each end a buoyant propeller which as shown in Fig. 4, is of an elongated elliptical cross-section, composed of two sections 33 and 34, which are preferably constructed of sheet metal and are secured together at their meeting edges in any preferred manner, as by being brazed or riveted together. Where brazed together, there will be a reinforcing ring 35 that will span the meeting edges of the sections and to which they will be

brazed. These propellers will of necessity be made of thin sheet metal, and in order to secure at the axle openings, a sufficient rigidity to enable them to withstand the strain to which they will be subjected in being driven, reinforcements are employed which are disposed on the inner sides of the sections, each consisting of a flat annulus 36, a plurality of arms 37 that are designed to be riveted to the sections, and a central bearing 38 carried by the arms and having a rectangular opening 39 through which projects the bearing 40 shown in Figs. 4 and 6. This bearing is provided at one end with a flange 41 extending at right angles to the axis of the bearing and which is riveted to one of the sections, the other end of the bearing having inserted within it a bushing 42 to receive the reduced and rectangular end 43 of the shaft 31, the other end of the shaft being provided with a bushing 44 similar to the one just described and which fits within the bearing 40, a nut 45 screwed upon the outer end of the terminal 43 serving to clamp the two bushings firmly within the openings of the propeller.

Secured to the exterior of each section of the propeller is a series of curvilinear blades 46, each of which is provided with an outstanding flange 47 that is secured by rivets 48 to the sections. These blades are preferably of metal, and gradually increase in width from the center to the periphery of the propeller so as to present the greatest resistance to turning at the deepest point of immersion.

The steering post 49 carries the ordinary handle bars 50 and is journaled in the steering wheel head 8 in the usual manner, the lower end of the steering post being provided with a fork comprising members 51 and 52. The steering wheel, or more properly, rudder 53, may be constructed of any suitable material, such as metal, or if preferred, canvas, and when the latter is employed, internal reinforces 54, in the nature of ribs, will be utilized. As it is not essential that the wheel or rudder 53 should turn, its supporting axle 55 is rectangular in cross-section, and extends through a bearing 56 similar to the bearing 40 described in connection with the propellers, the bearing having at one end a flange 57 that bears against the exterior of the rudder and having inserted in its other end a bushing 58. The shaft 55 extends at both ends beyond the fork members 51 and 52, and is held assembled therewith in any suitable manner as by nuts 59.

From the foregoing description, the operation of the apparatus, it is thought, will be apparent, it being desired that the propellers and steering wheel and rudder shall be of such size as to contain a body of air that will sustain the weight of the rudder with the axles of the two sets of wheels out of the water, so that in propelling the machine, the feet of the operator will at no time be submerged in the water.

In order to prevent the steering wheel or rudder being turned through a greater arc than is necessary, and which if done would cause the steering wheel to impede the progress of the machine that is being propelled through the water, the steering head is provided with a transverse slot 60 which is engaged by a pin 61 projecting from the steering post, the slot being of such length as to permit the wheel to be turned through an arc of about one-third of a circle.

What I claim as new and desire to secure by Letters Patent is:—

1. A water cycle embodying buoyant propellers provided with curvilinear blades gradually increasing in width from the axis to the peripheries of the propellers.

2. A water cycle embodying buoyant propellers provided with curvilinear blades gradually increasing in width from the axis to the peripheries of the propellers, and a buoyant steering wheel.

3. A water cycle embodying buoyant propellers provided with curvilinear blades gradually increasing in width from the axis to the peripheries of the propellers, and a non-rotatable buoyant steering wheel.

4. A water cycle embodying buoyant propellers provided with curvilinear blades gradually increasing in width from the axis to the peripheries of the propellers, a non-rotatable buoyant steering wheel, and means for limiting the arc of its rotation.

5. In a water cycle, a frame comprising side and front members, a steering head secured to the front members, an arched seat bar secured to the steering head, a rear axle, bearings therefor, branched members of the seat post secured to the bearings, buoyant bladed propellers carried by the shaft, and a non-rotatable buoyant steering wheel supported from the steering head.

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

MIKE SZEGEL.

Witnesses:

EUGENE CSCDIK,
JOHN H. BROEMEL.