

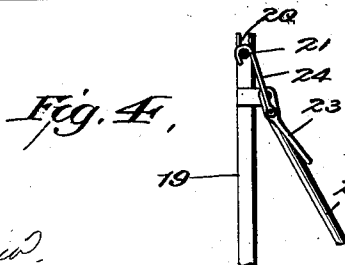
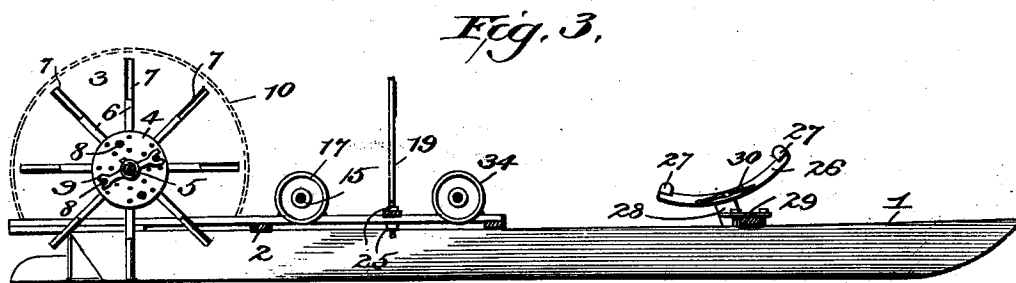
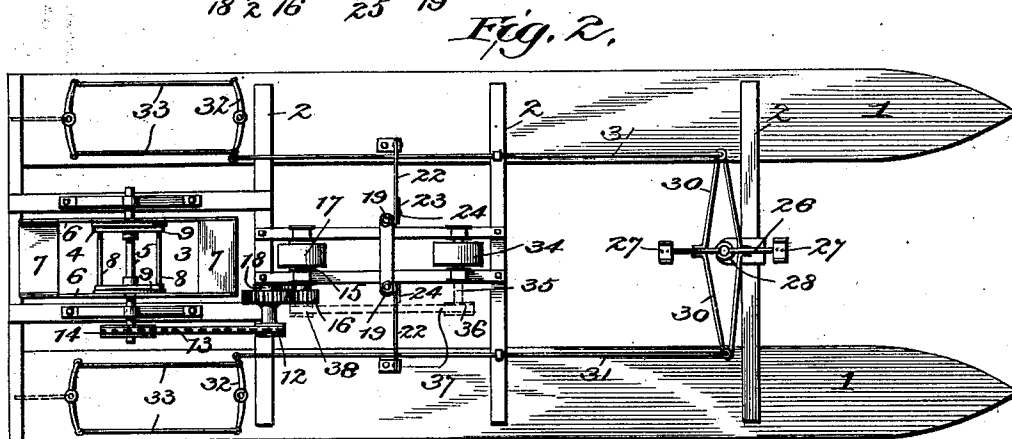
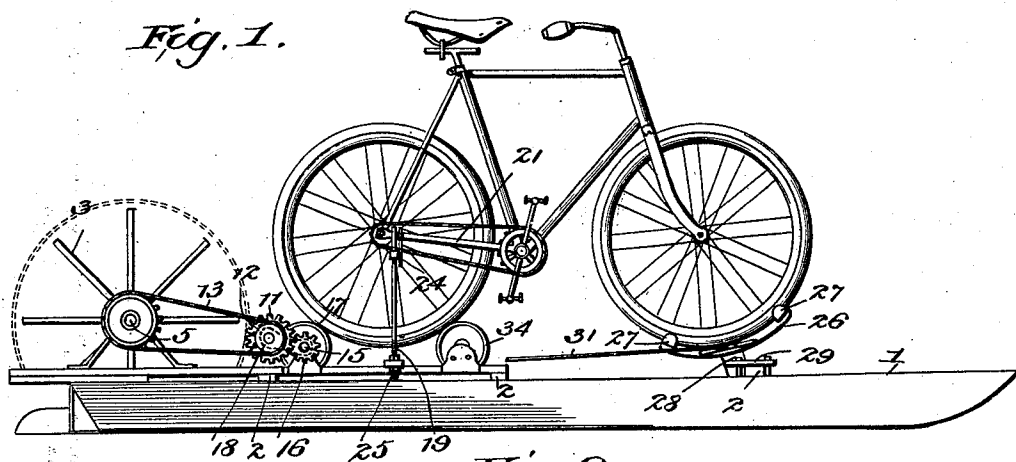
No. 691,805.

Patented Jan. 28, 1902.

S. R. PERRY.
WATER CYCLE.

(Application filed Feb. 16, 1901.)

(No Model.)



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UNITED STATES PATENT OFFICE.

SYLVESTER R. PERRY, OF WORCESTER, MASSACHUSETTS.

WATER-CYCLE.

SPECIFICATION forming part of Letters Patent No. 691,805, dated January 28, 1902.

Application filed February 16, 1901. Serial No. 47,656. (No model.)

To all whom it may concern:

Be it known that I, SYLVESTER R. PERRY, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Water-Cycle, of which the following is a specification.

My invention relates to water-cycles, and has for its object to produce a cycle in which the motive power is supplied by an ordinary bicycle placed thereon and in which the bicycle is adjustably secured for varying the amount of pressure between the driving-wheel and the operating mechanism of the cycle and also in which the power may be increased by means of tandem gearing.

Another object is to so construct the steering mechanism that it can be readily adjusted for different makes of bicycles, will be simple and easy in its operation, and will possess sufficient strength with extreme lightness.

A further object is to so construct the paddle-wheel that it can be cheaply constructed and that it will engage with the water in such a manner as to give the greatest propulsive force with the least expenditure of power.

With these objects in view my invention consists in the improved construction and novel arrangement of parts of a water-cycle, as will be hereinafter more fully set forth.

In the accompanying drawings, in which the same reference-numerals indicate corresponding parts in each of the views in which they occur, Figure 1 is a side elevation of a water-cycle embodying my invention. Fig. 2 is a top plan view of the same. Fig. 3 is a longitudinal sectional view. Fig. 4 is a detail view.

In constructing my improved water-cycle I secure two parallel floats 1 1 at a suitable distance apart by means of cross-bars 2 2. Journaled in suitable bearings at the rear ends of the floats is a paddle-wheel 3, which is preferably formed from two flanges 4, loosely mounted upon a shaft 5. Secured to each flange are radially-arranged arms 6, to the outer ends of which are secured paddles 7. The flanges are secured at the proper distances apart by means of rods 8, and two dogs

or clamps 9 are rigidly secured to the shaft 5, with their free ends in engagement with one or more of the rods 8, so that when the shaft is revolved the dogs or clamps will cause the paddle-wheel to revolve with it. The paddles 7 are preferably secured to the rear edges of the arms 6, so that when the wheel is being revolved it will be impossible for the water to pass out laterally. A suitable covering 10, as shown in dotted lines, may be placed over the wheel to prevent its throwing water upon the rider.

Journaled transversely of the cycle at a suitable distance in front of the paddle-wheel is a gear-wheel 11, one end of the hub of which is preferably extended beyond its bearing and provided with a sprocket-wheel 12. A chain 13 runs from the wheel 12 to a sprocket-wheel 14 on the end of the shaft 5 for the purpose of rotating the wheel. Journaled directly in front of the gear-wheel 11 is a shaft 15, upon which are rigidly secured a gear-pinion 16 and a friction-pulley 17. The gear-wheel 11 meshes with the gear-pinion 16, and its bearings are so arranged in relation thereto that the wheel may be raised or lowered for the purpose of tightening the chain. One means for securing the wheel 11 in this manner is by means of the ordinary slotted brackets 18, within which the shaft of the gear-wheel is mounted and secured in the same manner as is done in the ordinary gear-cutting lathes.

Directly in front of the friction-pulley and gear-pinion are two standards 19, the tops of which are preferably slotted, as shown at 20, for the reception of the rear portion of the frame of a bicycle 21, which is secured thereon for the purpose of propelling the cycle. A brace-rod 22 extends from each one of the floats nearly to the top of its respective standard and is rigidly secured thereto for the purpose of giving sufficient rigidity to the standards.

Pivotally secured at the upper ends of the braces, preferably by means of eccentric-levers 23, are two hooked clamps 24, which are adapted to be passed over the side bars of the frame of the bicycle to firmly secure the machine in position. The lower ends of the standards are preferably screw-threaded and

provided with nuts 25, by means of which the standards may be adjusted vertically to secure the proper amount of tension or pressure between the driving-wheel of the bicycle and the friction-pulley of the water-cycle, the periphery of said pulley being preferably flat and provided with a covering of rubber or other suitable yielding material.

The front wheel of the bicycle is supported in a cradle 26, which is pivotally mounted upon one of the cross-bars of the water-cycle. The cradle is preferably curved, with each end provided with a shoe 27, the shoe being curved in cross-section to correspond with the curvature of the tire of the bicycle. The pivot 28 of the cradle is secured to the cross-bar by means of a clamp 29, and the cross-bar is adjustable axially to permit of the pivot of the cradle being placed in perfect alinement with the fork of the bicycle and laterally to permit of its being moved longitudinally of the floats to adjust the cradle for the reception of the front wheel of the different makes of bicycles.

Two side arms 30 are secured to the cradle and extend laterally to a point over each of the floats, where they are connected with rods 31, which extend rearwardly through suitable bearings and are connected to one of the cross bars or yokes 32 of the rudder, there being a rudder upon each float and each rudder being provided with two cross bars or yokes, the ends of which are connected by suitable tie-rods 33. The side arms are preferably made tapering toward each end and are arranged flatwise to secure the necessary strength with the least amount of material, the material being preferably cut away at the central or wider portion.

If it be desired to increase the power of the bicycle-wheel upon the paddle-wheel, I provide an additional friction-pulley 34, which is journaled at a suitable point in front of the pulley 17 to be brought into engagement with the tire of the bicycle at a point in front of the standards 19. The periphery of this wheel is preferably flat and provided with a yielding rim or tire in the same manner as the pulley 17 and is also made adjustable vertically in its bearings in any suitable manner, so that it can be brought into or removed from contact with the rim of the bicycle-wheel whenever desired. Its shaft is extended at one end, as shown at 35, and provided with a sprocket-wheel 36, (shown only in dotted lines,) from which a sprocket-chain 37 extends to a sprocket-wheel 38, secured to the gear-pinion 16, said chain and wheel being also shown only in dotted lines. By arranging the parts in this manner the driving-wheel of the bicycle will contact with both pulleys and the power transmitted thereto will be transmitted through the sprocket-chains to the paddle-wheel.

In using my improved water-cycle the bicycle is rigidly secured in position upon the standards and in the cradle and adjusted so

as to secure the required pressure between its driving-wheel and the friction pulley or pulleys of the water-cycle. The rider then takes the seat of the bicycle and propels it in the same manner as upon the land, which will cause the paddle-wheel to be revolved with sufficient force and power to drive the water-cycle forward. The course of the water-cycle can be governed by the handle-bars of the bicycle in the same manner as though the bicycle were being used upon the land.

By means of the extra friction-pulley, which may be thrown into or out of gear, as desired, the water-cycle may be propelled with great speed or under adverse circumstances by moving it upward into contact with the driving-wheel of the bicycle, or it may be lowered out of contact with the wheel when it is desired to only use the ordinary pressure and friction for propelling the water-cycle. After use the bicycle can be quickly released from the water-cycle by simply operating the eccentric-levers to release the hooked clamps, when the bicycle may be lifted from the tops of the standards and removed from the water-cycle and operated the same as it was before being used upon the water-cycle.

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

1. In a water-cycle, the combination, with a float provided with a paddle-wheel, of a friction-pulley for operating the wheel, two standards adjacent to the pulley, the lower end of each of which is screw-threaded and provided with nuts and the upper end is slotted, a brace for each standard, the upper end of which is provided with a hooked clamp and an eccentric-lever for causing the clamp to engage with the frame of a bicycle, substantially as described.

2. In a water-cycle, the combination, with a float, of a shaft journaled at the rear end thereof, two disks mounted thereon at a distance from each other, radially-arranged arms secured to the disks, paddles secured to said arms, clamps rigidly secured to the shaft and engaging with said rods, a friction-pulley, operating mechanism between said pulley and said shaft, and means for securing a bicycle in engagement with said pulley, substantially as described.

3. In a water-cycle, the combination, with a float, of a shaft journaled at the rear end thereof, two disks mounted thereon at a distance from each other, radially-arranged arms secured to the disks, paddles secured to the rear edges of said arms, a friction-pulley and intermediate gearing device for operating said shaft and paddles, and means adjustable independently of and over said pulley for securing a bicycle in engagement with said pulley, substantially as described.

4. In a water-cycle, the combination, with two floats, each of which is provided with a rudder and two connected yokes, of cross-

bars for holding said floats at a distance from each other, one of which is provided with a cradle, side arms extending from said cradle to a point over the floats, rods from each end
5 of said arms to said yokes, a paddle-wheel at the rear of said floats provided with means for operating the same, and means for sup-

porting a bicycle in said cradle and in position to operate the paddle-wheel, substantially as described.

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