

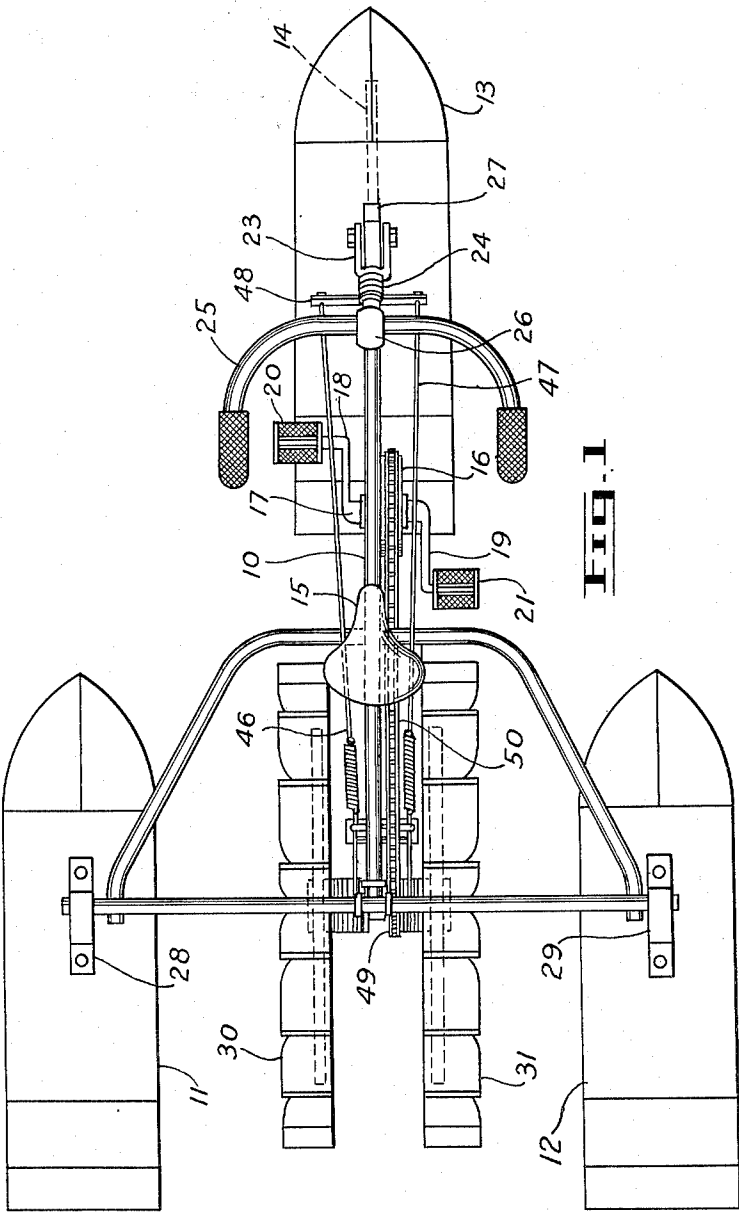
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M. THERRIEN
WATER CYCLE

2,674,971

Filed June 29, 1953

3 Sheets-Sheet 1



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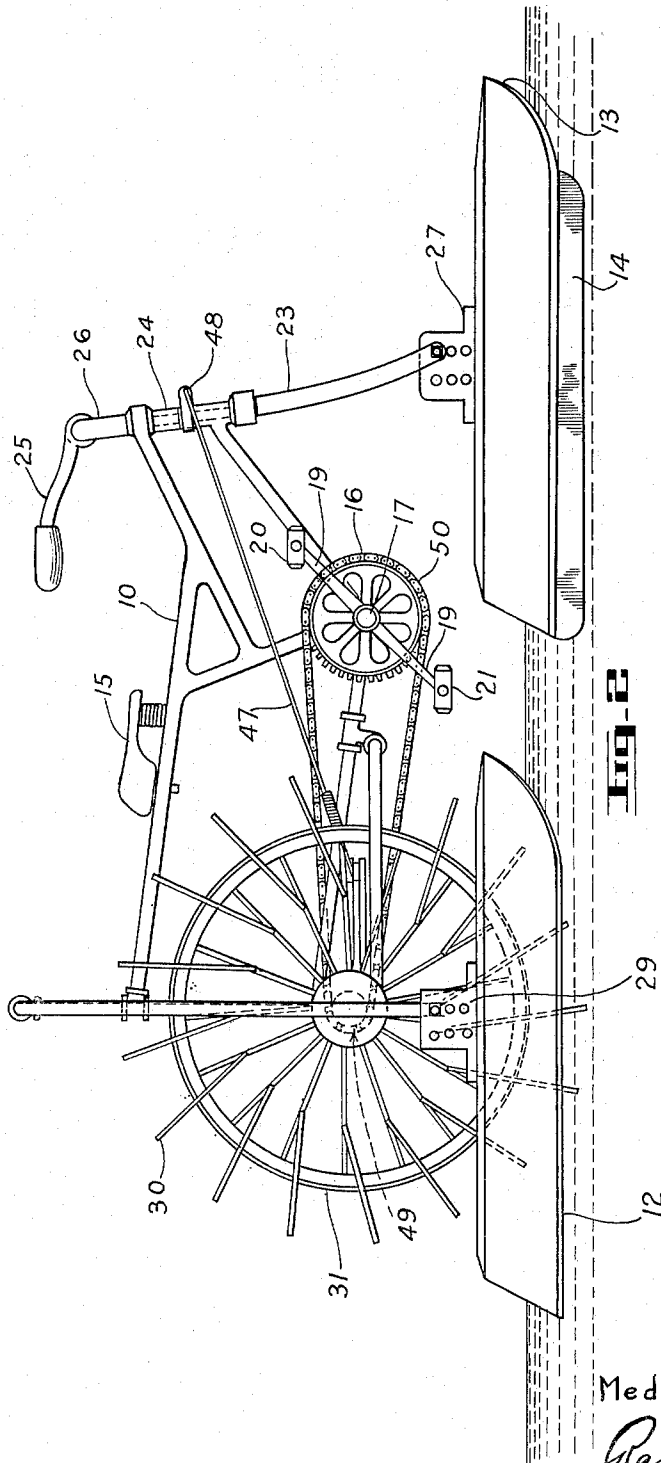
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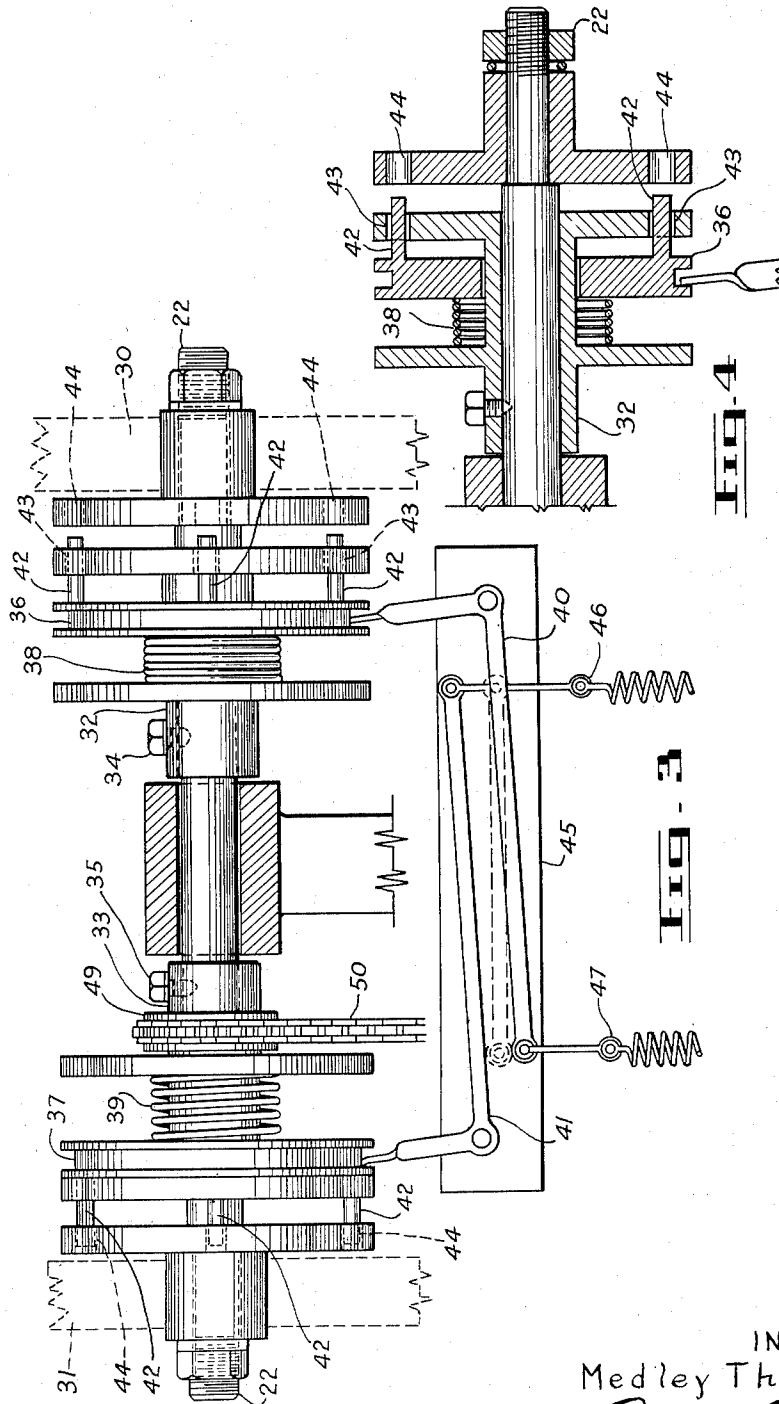
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UNITED STATES PATENT OFFICE

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WATER CYCLE

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1 Claim. (Cl. 115—26)

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This invention relates to waterborne conveyances and, in particular, has reference to a manually (pedal) operable conveyance of the type fitted with pontoons.

It is common in waterborne conveyances of the manually operable variety to row the conveyance through the water by oars which are pivoted in fittings attached to the sides (gunwales) of the conveyance, and are grasped, at their inboard ends, and moved more or less reciprocally, by the rower. Conveyances of this type are usually large and cumbersome, require a certain degree of proficiency on the part of the rower, offer excessive resistance to movement through the water, and fail to utilize the maximum power of the rower.

I have found that these disadvantages may be overcome by providing a waterborne conveyance actuable by the legs of the operator, and comprising a frame carried on a plurality of pontoons, and one or more chain-driven propellers mounted on the said frame. Conveyances of the latter type are light in weight, offer a minimum of resistance to movement through the water, require no special skill on the part of the operator, and utilize to a fuller extent the maximum power of the operator.

One object of the invention, therefore, is the provision of a pedally operable waterborne conveyance.

A more detailed object of the invention is the provision of a dirigible waterborne conveyance consisting of a frame carried by a plurality of floats (pontoons) and pedally operable propulsion means carried by the said frame.

With these and other objects in view which may appear while the description proceeds the invention consists in the novel arrangement of cooperating parts shown in the accompanying drawings forming part of this application and in which:

Figure 1 is a plan view of one embodiment of the invention showing a frame carried on a plurality of pontoons, and a plurality of pedally operable propellers carried by the said frame;

Figure 2 is an elevational view of this embodiment;

Figure 3 is an enlarged, partly diagrammatic, view in plan showing means for selectively de-clutching the propellers from the propeller shaft, and

Figure 4 is an enlarged plan view in section of one of the clutches shown in Fig. 3.

The conveyance illustrated in the drawings, wherein the same reference characters denote

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the same parts throughout, consists basically of a plurality of floats linked together by a frame having a plurality of pedally operable paddle wheels revolvably mounted thereon.

In particular, in Figures 1 and 2 of the drawings, the numeral 10 denotes a frame which is supported at the rear by like pontoons 11 and 12 and, forwardly, by a similar pontoon 13 having a keel 14. It may be of any suitable cross section, but, preferably, as shown, is a tubular structure, somewhat similar to the frame of a bicycle, having a suitable seat 15 disposed medially of its upper cross bar, a sprocket 16 secured to a shaft 17 journaled in a hanger forming part of its lower cross bar, crank arms 18 and 19 extending radially from opposite ends of the said shaft, pedals 20 and 21 respectively secured to the ends of the cranks arms 18 and 19, a transversely disposed propeller shaft 22 journaled in its after end, and a forked member 23 rotatably mounted in a steering post 24 forming its forward end. A pair of handlebars 25 is secured to the upper end of the forked member 23 as by a stem 26, and the lower terminations of the said forked member are secured to a bracket 27 which is rigidly secured to the deck of the pontoon 13. The after end of the said frame is carried by a tubular inverted U-shaped member, the opposite ends of which are secured to brackets 28 and 29 respectively rigidly secured to the decks of the pontoon 11 and the pontoon 12.

The pontoons 11, 12 and 13 may be of any suitable cross section but, in the form shown, are decked-over more or less V bottom shells formed in usual boat fashion with vertical stems and downwardly rearwardly extending transoms. The forward pontoon 13, as hereinbefore stated, is provided with a keel 14 which serves as a rudder for steering the conveyance.

In order that the conveyance may be propelled through the water and steered more readily, like paddle wheels 30 and 31 are revolvably mounted at opposite ends of the propeller shaft 22, and means are provided for selectively driving the said paddle wheels whenever the orientation of the pontoon 13 is altered from the dead ahead position by the operator of the conveyance. As shown in Figures 3 and 4 of the drawings, the means for collectively or selectively driving the paddle wheels 30 and 31 may comprise like medially and terminally flanged tubular drive shafts 32 and 33 arranged concentrically with and secured to the propeller shaft 22 by suitable fastening means such as set-screws 34 and 35, like circumferentially grooved clutch discs 36 and 37

revolvably slidably mounted on the said tubular drive shafts and rotatable therewith, like clutch tension springs 38 and 39, like bell cranks 40 and 41 adapted for actuating the said clutch discs, and a sprocket 49 secured to one of the said drive shafts and connected by a chain 50 to the drive sprocket 16.

Each said clutch disc is provided with a plurality of axially outwardly extending fingers 42 which extend through suitable bores 43 formed in the said terminal flange of each said tubular drive shaft, and are received by suitable bores 44 formed in the frame of each said paddle wheel.

The bell cranks 40 and 41 are pivotally secured to a bracket 45 which is secured transversely of the frame 10, and are connected by like tensed control wires 46 and 47 to the opposite ends of a suitable bracket 48 which is secured transversely of the forked member 23.

It is believed that the construction and advantages of the structure shown may be apparent from the foregoing paragraphs taken in conjunction with the accompanying drawings without further detailed description.

While the preferred embodiment of the invention has been disclosed it is understood that minor changes in the construction, combination and arrangement of cooperating parts may be resorted to within the scope of what is claimed without departing from the spirit of the invention.

I claim:

A dirigible waterborne conveyance comprising a frame, a pair of floats secured rearwardly to

the said frame, a like float having a keel secured to the lower termination of a vertically disposed standard revolvably carried forwardly by the said frame, steering means secured to the upper termination of the said standard, a propeller shaft journaled transversely of the said frame, like tubular drive shafts carried by the said propeller shaft and secured to the opposite ends thereof, like paddle wheels revolvably mounted at opposite ends of the said propeller shaft outwardly of the said tubular drive shafts, like clutch elements revolvably slidably mounted on the said tubular drive shafts and rotatable therewith, expansible elastic means forcibly urging the said clutch elements into rigid engagement with the frames of the said paddle wheels, like release levers each having one end in sliding engagement with the said clutch elements, a bracket secured transversely of the said standard and turnable therewith, tensed elongated flexible members connecting the opposite ends of the said release levers to the opposite ends of the said bracket secured to the said standard, pedally operable means carried by the said frame for revolving the said tubular drive shaft, and a seat mounted atop the said frame.

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