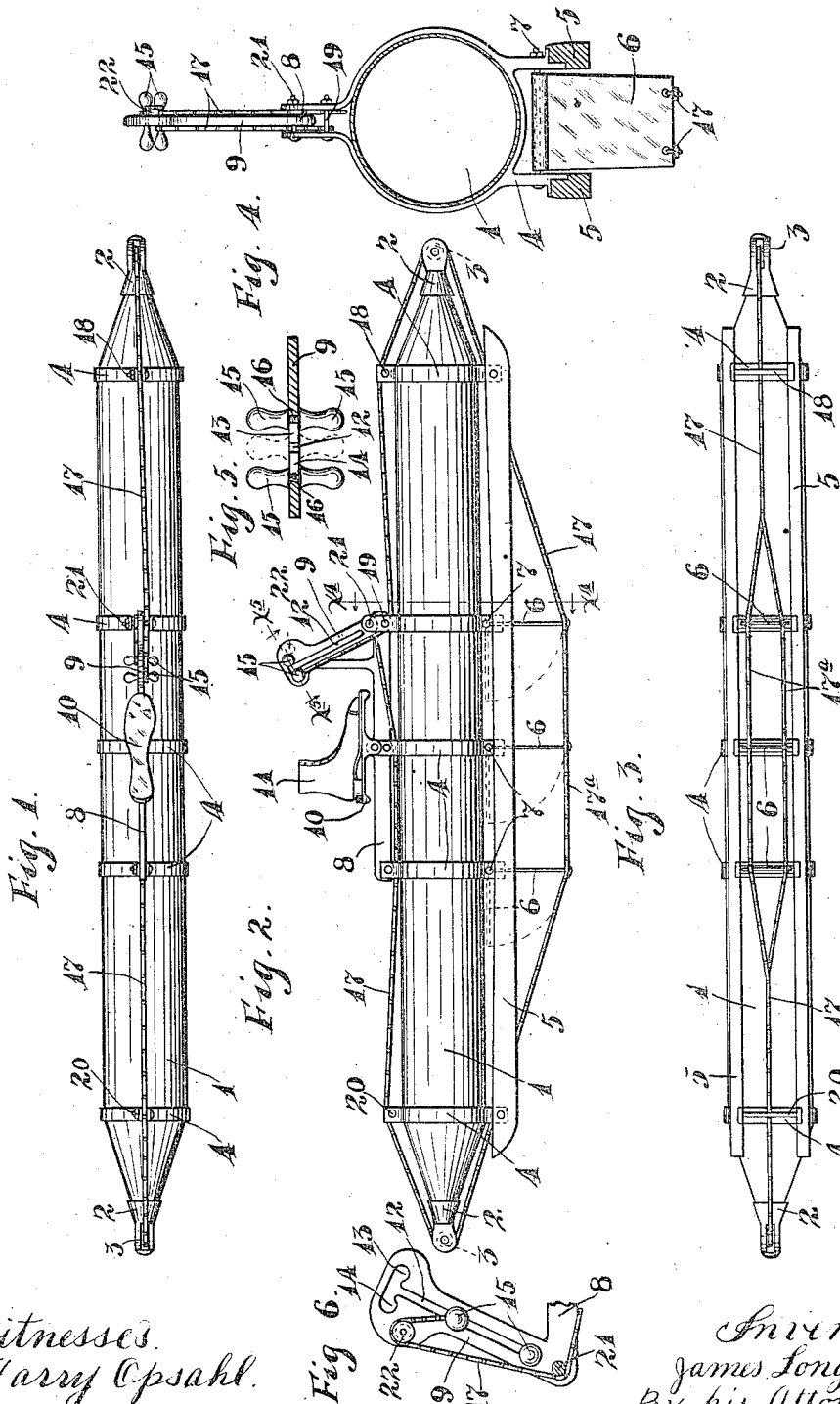


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WATER SKATE.

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987,730.

Patented Mar. 28, 1911.



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UNITED STATES PATENT OFFICE.

JAMES LONGWELL, OF MINNEAPOLIS, MINNESOTA.

WATER-SKATE.

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To all whom it may concern:

Be it known that I, JAMES LONGWELL, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Water-Skates; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide an improved device for use in walking or traveling upon the water, such device being herein designated as water skates.

To such ends the invention consists of the devices and combination of devices herein-after described and defined in the claims.

In the accompanying drawings, like characters indicate like parts throughout the several views.

Referring to the drawings; Figure 1 is a plan view showing one of the improved water skates; Fig. 2 is a right side elevation of the same; Fig. 3 is a bottom plan view of the water-skate; Fig. 4 is an enlarged transverse section taken approximately on the line $x^4 x^4$ of Fig. 2; Fig. 5 is a detail in section taken on the line $x^5 x^5$ of Fig. 2; and, Fig. 6 is a detail in left side elevation showing means for securing the ends of the propeller blade controlling cables or flexible connections.

The body of the water skate is afforded by a long thin sheet metal tube or can 1, the ends of which are preferably made conical, and, as shown, capped by the conical flanges of guide brackets 2, in the pronged ends of which small anti-friction guide rolls 3 are journaled. Secured to the air tube 1, by means of suitable brackets 4, is a pair of parallel runners 5, that project below the said tube and are adapted to engage with the ground when the water skate is run out of the water and on the dry land.

The three intermediate brackets 4 afford supports for three propelling blades 6, that work between the runners 5, and are pivotally connected to depending legs of the said brackets, by means of bolts 7. The pivot bolts 7 are located above the runners 5 so that when the blades 6 have turned into horizontal positions, as shown by dotted lines in Fig. 2, they will be locked safely above the

lower ground engaging surfaces of said runner.

The upper portions of the three intermediate clamping brackets 4 are rigidly secured to a top bar 8, the front portion of which is extended upward to afford a pedestal 9. The foot piece 10 is intermediately pivoted to the bar 8 for limited oscillatory movements, and in Fig. 2, the shoe 11, as shown, is applied to this foot piece. This pedestal 9 is provided with an upright, but preferably, slightly oblique slot 12, which, at its upper extremity, is extended transversely to afford lock seats 13 and 14. Hand pieces shown as made up each of a pair of knobs 15 and threaded connecting stems 16, are adapted to be secured in the seats 13 and 14 or to be moved in the slot 12 of the pedestal 9.

A flexible controlling connection 17, preferably in the form of a cable or chain, is attached to the lower edge portion of the propelling blades 6. The front end portion of this controlling connection or cable 17 is passed over the front guide roll 3, over a guide pole 18, on the upper portion of the front bracket 4, under a guide wheel 19 applied on one side of the base of the pedestal 9, and from thence, is extended upward and attached to one of the end pieces 15. The rear end portion of said cable 17 is passed over the rear guide roll 3, over a guide bolt 20 on the upper portion of the rear clamping bracket 4, under suitable guides on the upper portions of two of the intermediate brackets 4, thence, under a guide pin 21 on the base of the pedestal 9; and from thence, upward and is attached to the other of the noted hand pieces 15. When the two hand pieces 15 are secured at the top of the pedestal, as shown in Fig. 2, the propeller blade controlling cable will be secured at both ends and the said propeller blades 6 will be locked in their down turned positions.

When it is desired to travel forward or toward the right in respect to Figs. 1, 2 and 3, the hand piece 15 to which the front end portion of the cable 17 is attached, is moved down to the lower extremity of the pedestal slot 12, while the other hand piece is left in its raised position. Under these conditions, the cable 17 will act as a stop preventing the propeller blades from moving forward of vertical positions, but will permit the said

propeller blades to turn rearward into horizontal position. This renders the propeller blades operative to resist backward movements of the so-called water skate but permits the said skates to slide forward under a minimum of resistance. It will, of course, be understood that when the water skates are applied to the feet of the operator they will be moved forward alternately and the one will afford a base of reaction while the other water skate is moved forward.

When it is desired to cause the skate to travel backward, the front end portion of the cable 17 should be drawn up and the rear end portion thereof released, and when this is done the folding movements of the propeller blade 6 will be reversed. If at any time when traveling in any direction it is desired to quickly stop the movement of the skate the loose end of the cable may be drawn up thereby securing the propeller blade 6 in downturned positions and against folding movement in either direction.

In traveling over the ground with the so-called water skates applied to the feet, the runners 5 may be slid along the ground. At such time the propeller blades 6 should be secured in their upturned horizontal position indicated by dotted lines in Fig. 2. This may be accomplished first by releasing or giving slack to the forward portion of the cable 17 and by then passing the upper end of the rear portion of the said cable over a small guide roller 22 on the upper portion of the pedestal 9, and then drawing the cable end down in the pedestal slot 12 and securing the hand piece 15 to the lower portion of the pedestal by screwing the knobs together.

The so-called water skates described may, by a person who has become expert, be used to travel on the water by movements which resemble the movements in skating on ice. When the floats or water tubes are in the water, the runners 5 afford sufficient keel to prevent the same from being drifted sideways out of their intended course. As shown in Fig. 3, the so-called blade controlling cable 17 is divided or made double at its

lower central portion as indicated at 17^a and this divided portion is attached to the lower edge of the propeller blade 6.

What I claim is:

1. A water skate comprising a float, a propeller blade pivotally connected thereto, a controlling cable connected to and extended in opposite directions from said blade, and means for holding said cable to limit the pivotal movement of said propeller blade and for rendering the same operative in either direction of travel of said skate, substantially as described.

2. In a water skate the combination with an air tube, and a propeller blade pivoted to and depending therefrom, of a controlling cable extended in opposite direction from said blade and over guides on said air tube, and means on top of said air tube for adjustably securing the ends of said cable, substantially as described.

3. In a water skate the combination with an air tube, of a propeller blade pivoted thereto and depending therefrom, a pedestal on top of said air tube, a blade controlling cable extending in opposite directions from said blade over suitable guides on said air tube and pedestal, and hand pieces applied to the ends of said cable and adjustably securable on said pedestal, substantially as described.

4. In a water skate the combination with an air tube having runners secured below the same, of blades pivotally connected to said tube and depending therefrom, a pedestal and foot piece on top of said air tube, a controlling cable extending in opposite directions from said propeller blades and over suitable guides on said air tube and pedestal, and hand pieces applied to the ends of said cable and adjustably secured on said pedestal, substantially as described.

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

JAMES LONGWELL.

Witnesses:

HARRY D. KILGORE,
B. G. WHEELER.