G. HALBOW.

WATER SKATE.

APPLICATION FILED OCT. 2, 1919.

1,344,225.

Patented June 22, 1920.

2 SHEETS—SHEET 1.

Fig. 1.

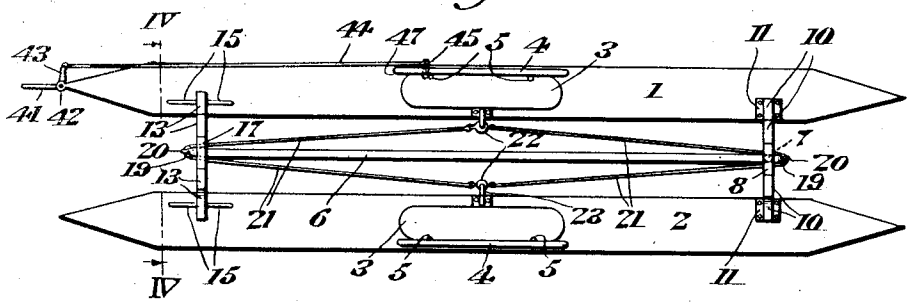


Fig. 2.

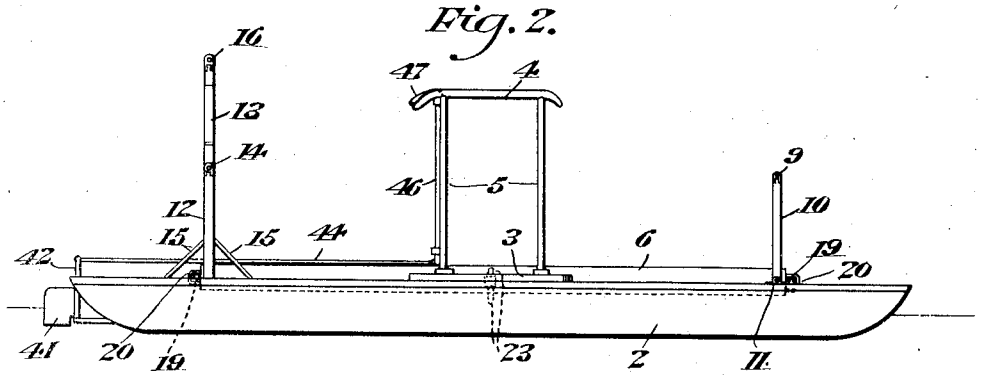
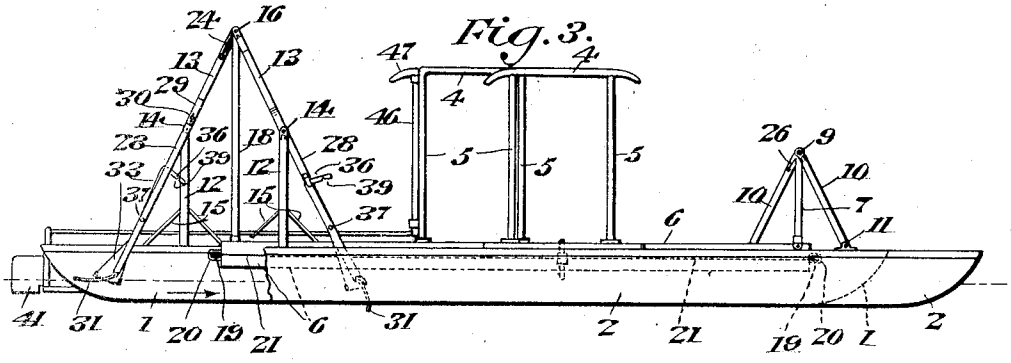


Fig. 3.



Inventor

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2 SHEETS—SHEET 2.

Fig. 4.

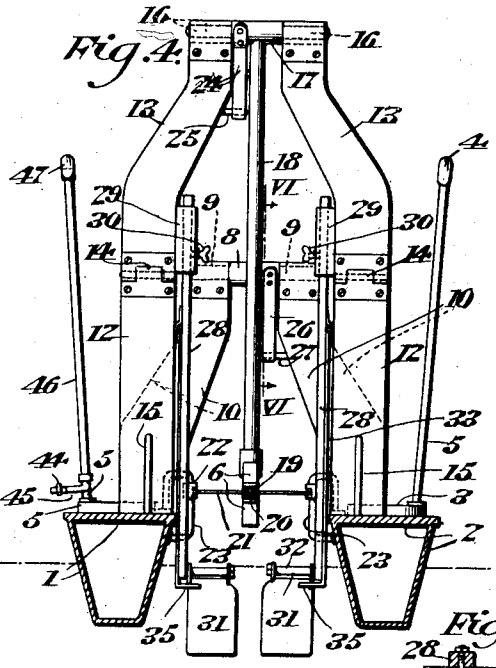


Fig. 5.

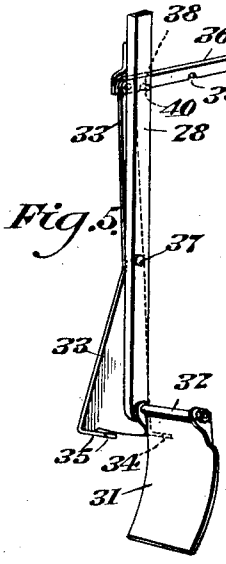


Fig. 6.

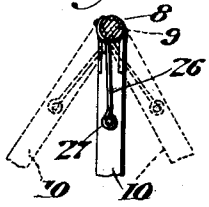


Fig. 7.

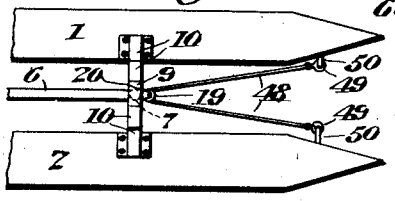


Fig. 11.

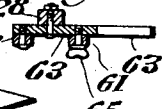


Fig. 10.

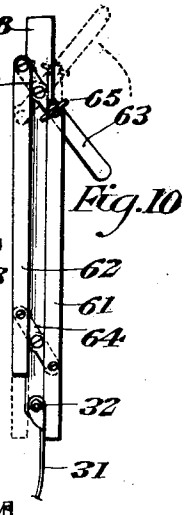


Fig. 8.

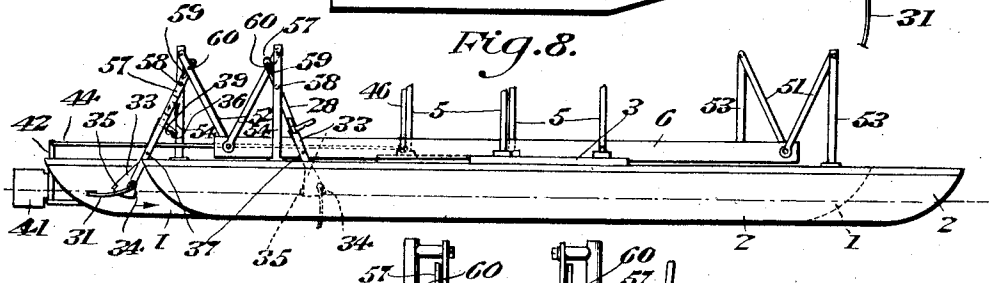
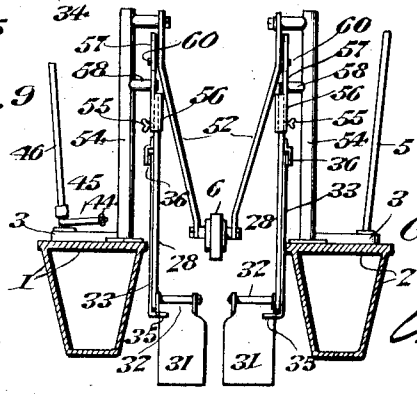


Fig. 9.



Inventor

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UNITED STATES PATENT OFFICE.

GUSTAV HALBOW, OF BROOKLYN, NEW YORK.

WATER-SKATE.

1,344,225. Specification of Letters Patent. Patented June 22, 1920.

Application filed October 2, 1919. Serial No. 328,040.

To all whom it may concern:

Be it known that I, GUSTAV HALBOW, a citizen of no country, and a resident of the borough of Brooklyn, county of Kings, city and State of New York, have invented certain new and useful Improvements in Water-Skates, of which the following is a specification.

This invention relates to improvements in devices by means of which a person may skate or glide upon the surface of a body of water.

The invention has for its principal objects the provision of means controlled by the movement of the feet of the operator for propelling the sustaining means over the surface of the water, and to provide propelling means adjustable to permit backward movement when desired.

There are other important objects and advantages of the invention, all of which will hereinafter appear.

In the accompanying drawings, Figure 1 is a plan view of the device;

Fig. 2 a side elevation thereof, with the sustaining floats in their normal position directly opposite each other;

Fig. 3 a side elevation illustrating the manner of propelling the floats over the water;

Fig. 4 a vertical transverse section of the line IV—IV of Fig. 1;

Fig. 5 a fragmentary perspective view showing a part of the propelling mechanism;

Fig. 6 a fragmentary vertical longitudinal section on the line VI—VI of Fig. 4;

Fig. 7 a fragmentary plan view showing a slightly modified construction;

Figs. 8 and 9 views similar to Figs. 3 and 4 showing another modified construction of the device; and Figs. 10 and 11 detail views showing a modified form of impeller blade reversing means.

Referring to the various parts by numerals, 1 and 2 designate a pair of long and narrow floats or buoyant hollow sustaining devices, preferably pointed at their ends as shown. Each float is provided midway its ends with a foot plate or rest 3 and also with a hand-rail 4 supported on a pair of standards 5. A bar 6 extends longitudinally between the floats 1 and 2 above the water-line and is supported at its forward end by means of a vertically extending rod 7 rigidly held at its lower end to said bar and provided with an integral cross-bar at its upper end having central spacing portions 8 and reduced end portions 9 to which the upper ends of plates or supporting arms 10 are pivotally held. The pair of plates or swinging supporting arms 10 are pivotally held at their lower ends at 11 to the floats 1 and 2 adjacent the forward ends of the floats.

A pair of oppositely disposed vertical posts or standards 12 are rigidly held at their lower ends to the floats 1 and 2 adjacent the rear ends of said floats and a pair of upwardly extending arms 13 are hinged at their lower ends at 14 to the upper ends of the posts 12. Suitable braces 15 may be provided for assisting in supporting posts 12. The arms 13 are pivotally held at their upper ends to the reduced end portions 16 of a cross-bar having a central enlarged spacing portion 17. The cross-bar is formed integrally with or rigidly held to the upper end of a vertical rod or standard 18 which is rigidly secured at its lower end to the rear end of the bar 6. A pair of pulleys 19 are journaled on vertical pivots in suitable supports 20 at the front and rear ends of bar 6. A pair of cables 21 pass over pulleys 19 and are secured at their ends to a pair of slides 22 held to guides 23 on the floats to move freely in an up and down direction. The pairs of arms 10 and 13 are normally held in vertical positions and the floats normally maintained directly opposite each other by a flat spring 24, secured at one end to the cross-bar 17 and at its other end to a pin 25 on one of the arms 13, and a similar flat spring 26 held at one end to cross-bar 9 and at its other end to a pin 27 on one of the arms 10.

An impelling device is rigidly but adjustably held to each of the arms 13 to rock in unison with said arms. Each impeller comprises a bar 28, preferably rectangular in cross section, the upper end of which extends through a rectangular aperture in a bracket 29 held to arm 13, and an impeller blade 31 pivotally held to the lower end of the bar by a bolt 32. The bars 28 are held in their adjusted positions by suitable set screws 30, and it will be obvious that the extent that blades 31 will dip into the water may be regulated by adjusting bars 28 vertically. An impeller reversing device is

provided for each of the impellers. Each reversing device comprises a lever 33 pivotally held intermediate its ends at 37 to bar 28 and provided with a pair of spaced stop lugs 34 and 35 at its lower end located at opposite sides of the impeller blade 31. A latch lever 36 pivotally held at one end to the upper end of lever 33 is provided with a pair of spaced notches 38 and 39 adapted to coöperate with a pin 40 on bar 28 to lock the reversing lever 33 in either of its two adjusted positions.

When levers 33 are adjusted so that stops 34 will arrest the swinging movement of the blades 31 when the blades reach positions substantially parallel with bars 28, the skater may move forwardly over the water by pushing first one float and then the other forwardly. If levers 33 are adjusted so that stops 35 will arrest the swinging movement of the blades when the blades reach positions parallel with bars 28, the skater may move backwardly by pushing first one float and then the other rearwardly. The device may be steered by means of a rudder 41 held to a rotatable post 42 at the rear end of the float 1. An arm 43 held to the rudder post 42 is connected by a cable 44 with a rock arm 45 on a vertical rock shaft 46 journaled in suitable bearings held to one of the standards 5 and provided with an operating handle 47 preferably so located as to form practically a continuation of the adjacent hand-rail 4.

In the modified construction shown in Fig. 7, the various parts are constructed and arranged as above described, except for the fact that one of the cables 48, corresponding with the cables 21, extends forwardly and the other rearwardly from the pulleys 19 and said cables are connected at their ends with the floats adjacent the forward and rear ends of the floats by slides 49 and guides 50 similar to slides 22 and guides 23.

Referring to the construction shown in Figs. 8 and 9, the bar 6 is connected at its ends by pairs of links 51 and 52 to pairs of rigid standards 53 and 54 mounted on the floats. The impeller-blade carrying bars 28 are adjustably held by set screws 55 in brackets 56 formed on the lower ends of levers 57 pivotally held on studs 58 on the standards 54. The levers 57 are provided with elongated slots 59 through which pins 60 on the links 52 extend for vibrating the impellers.

In Figs. 10 and 11 a modified construction of impeller blade reversing means is shown. This arrangement comprises a pair of stop bars 61 and 62 pivotally held to the opposite ends of a pair of levers 63 and 64. The levers 63 and 64 are pivotally held intermediate their ends to the impeller blade supporting bar 28 and the lever 63 is formed with an extension or handle to permit either stop bar 61 or stop bar 62 to be lowered into position to limit the swinging movement of the impeller blade. A clamping screw 65 forms the pivotal connection between the bar 61 and lever 63 and, when tightened, serves to lock the stop bars in their adjusted positions.

What I claim is:

1. A device of the class set forth comprising a pair of floats shiftable endwise relatively to each other, a pair of standards on each float adjacent opposite ends of the float, four links pivotally connected at their upper ends to the upper ends of the standards and pivotally connected together in pairs at their lower ends, a bar extending longitudinally of the floats and supported by the pivotal connections between the lower ends of the pairs of links, two impeller-blade carriers pivotally held intermediate their ends to standards adjacent the same end of different floats, means forming a pin and slot connection between the upper end of each carrier and the link connected with the standard supporting the carrier, and impeller blades mounted on the lower ends of the carriers.

2. In a water skate, the combination of a pair of floats shiftable endwise relatively to each other, a pair of rigid members pivotally connected together at one end, means for pivotally supporting said members at their other ends on different floats, and impelling means operable by said members upon relative endwise movement of the floats.

3. In a water skate, the combination of a pair of floats shiftable endwise relatively to each other, a standard on each float, a pair of rigid members pivotally connected together at one end and each pivotally held at its other end to one of said standards, a pair of impeller-blade carriers connected with said members and shiftable simultaneously in opposite directions thereby upon relative endwise movement of the floats, and impeller blades pivotally held to said carriers.

4. In a water skate, the combination of a pair of floats shiftable endwise relatively to each other, a standard on each float, a pair of rigid members pivotally connected together at one end and each pivotally held at its other end to one of said standards, a pair of impeller-blade carriers connected with said members and shiftable simultaneously in opposite directions thereby upon relative endwise movement of the floats, impeller blades pivotally held to said carriers, and means on said carriers adjustable to reverse the impelling action of said impeller blades.

5. A device of the class set forth comprising a pair of foot supporting floats, means connecting the floats together to permit parallel relative fore-in-aft movement therebetween, a pair of impellers pivotally

mounted on the floats to swing in a fore-and-aft direction relatively thereto, means controlled by the relative movement between the floats for swinging said impellers in opposite directions, and means for adjusting the impellers to reverse the direction of movement of the device.

6. A device of the class set forth comprising a pair of foot supporting floats, means connecting the floats together to permit parallel relative fore-and-aft movement therebetween, a pair of impellers pivotally mounted on the floats to swing in a fore-and-aft direction relatively thereto, means controlled by the relative movement between the floats for swinging said impellers in oppodirections, and resilient means for normally maintaining the floats directly opposite each other.

7. A device of the class set forth comprising a pair of relatively movable floats, a pair of swinging arms supported on the floats to swing fore-and-aft of the floats, impelling blades pivotally held to the arms to swing in a fore-and-aft direction, a pair of levers pivotally held to the arms and each provided with two spaced stops adapted to be engaged by opposite faces of the adjacent impeller blade in different adjusted positions of the lever, and means for locking the levers in either of their adjusted positions.

8. A device of the class set forth comprising a pair of foot supporting floats, means connecting the floats together to permit parallel relative fore-and-aft movement therebetween, a pair of impellers pivotally mounted on the floats to swing in a fore-and-aft direction relatively thereto, means controlled by the relative movement between the floats for swinging said impellers in opposite directions, and means for steering the floats.

This specification signed this thirtieth day of September, A. D. 1919.

GUSTAV HALBOW.