O. C. SAMPHERE.

SWIMMING MACHINE.

APPLICATION FILED DEC. 11, 1916.

1,288,689.

Patented Dec. 24, 1918.

2 SHEETS—SHEET 1.

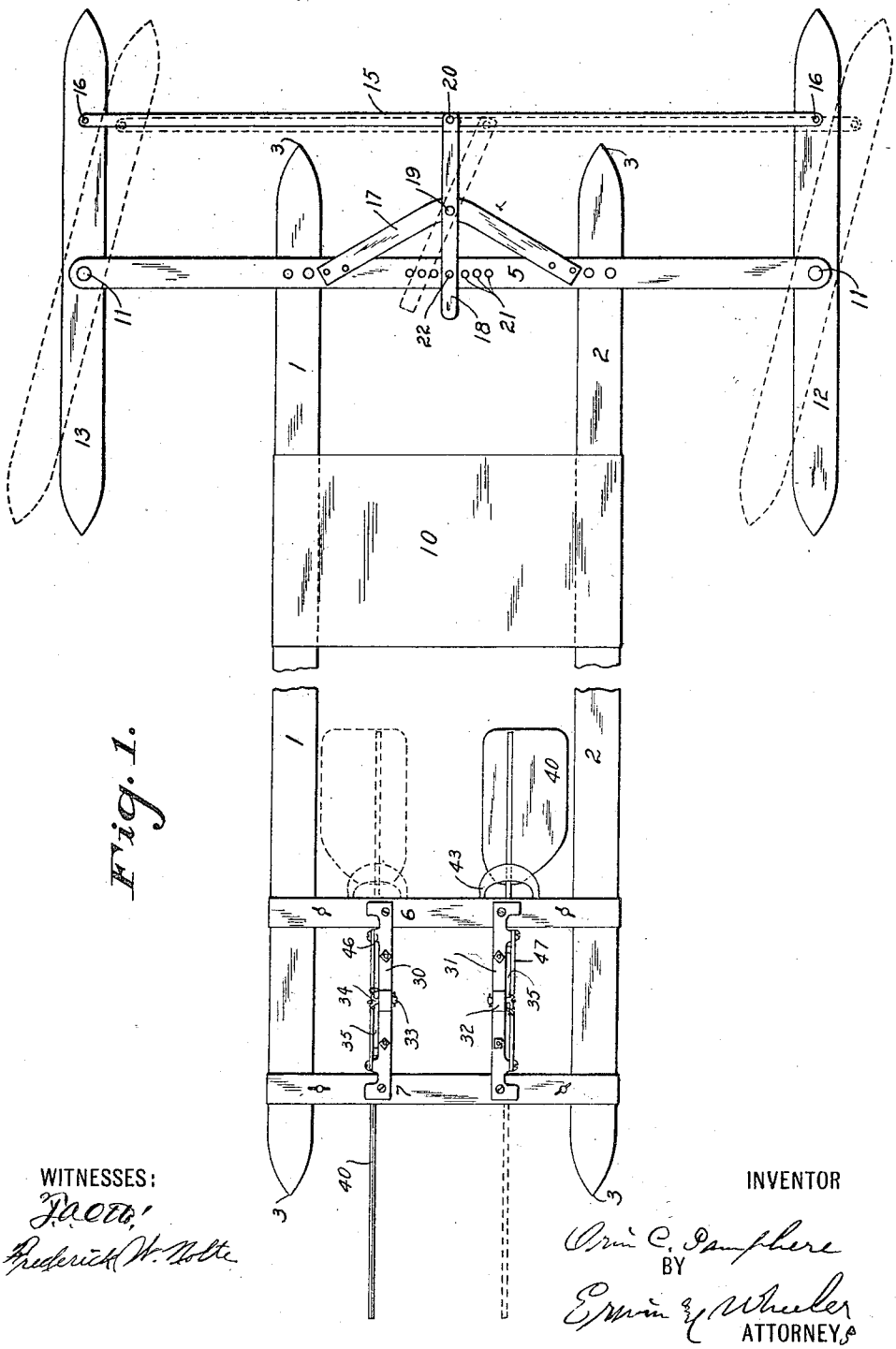


Fig. 1.

WITNESSES:

J. A. Otto,

Frederick W. Wolte

INVENTOR

Orin C. Samphere

BY

Erwin & Wheeler

ATTORNEYS

THE HORRIS PETERS CO., PHOTO-LITHO., WASHINGTON

O. C. SAMPHERE.

SWIMMING MACHINE.

APPLICATION FILED DEC. 11, 1916.

1,288,689.

Patented Dec. 24, 1918.

2 SHEETS—SHEET 2.

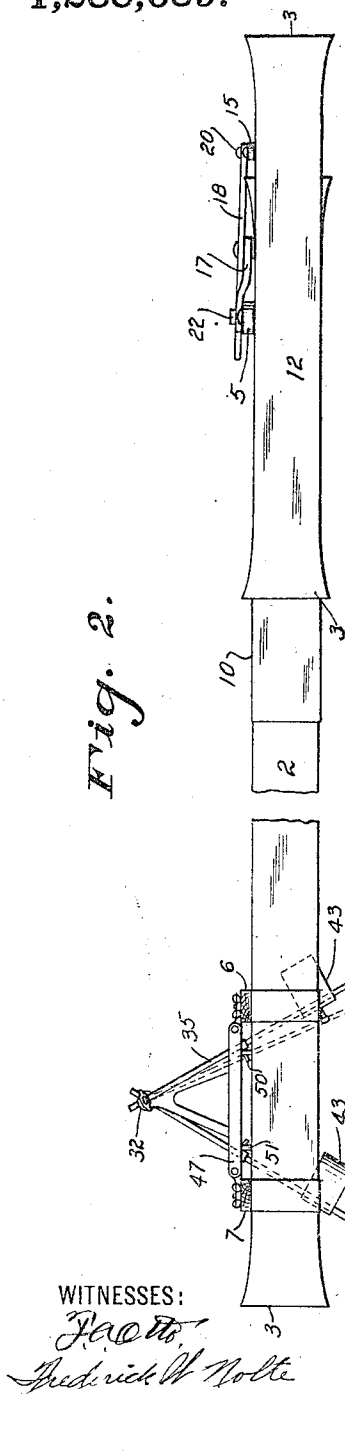


Fig. 2.

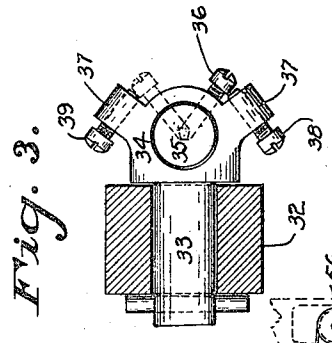


Fig. 3.

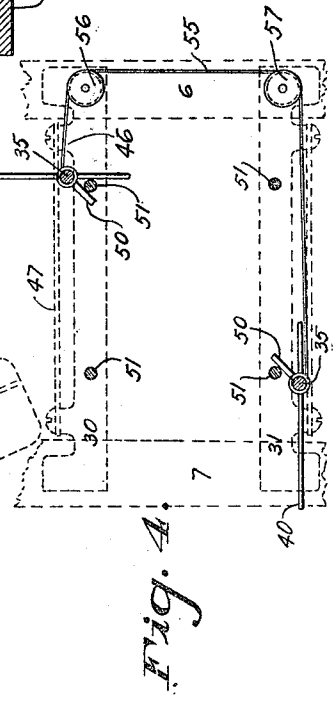


Fig. 4.

WITNESSES:

F. A. Otto.

Frederick W. Nolte

INVENTOR

Orin C. Samphere

BY

Erwin & Wheeler

ATTORNEYS.

THE MORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ORIN C. SAMPHERE, OF MILWAUKEE, WISCONSIN.

SWIMMING-MACHINE.

1,288,689. Specification of Letters Patent. Patented Dec. 24, 1918.

Application filed December 11, 1916. Serial No. 136,126.

To all whom it may concern:

Be it known that I, ORIN C. SAMPHERE, citizen of the United States, residing at Milwaukee, county of Milwaukee, and State of Wisconsin, have invented new and useful Improvements in Swimming-Machines, of which the following is a specification.

My invention relates to improvements in swimming apparatus.

The object of my invention is to provide a simple, practical, manually operated swimming machine adapted for use not only by persons who are able to swim independently of supporting mechanism, but also by inexperienced persons, who are unable to swim without auxiliary supports.

A further object of my invention is to provide mechanism for utilizing the muscles of the swimmer to the best possible advantage for the purpose of propulsion.

In the drawings—

Figure 1 is a plan view of a swimming machine embodying my invention.

Fig. 2 is a side elevation of the same.

Fig. 3 is a detail view of the swivel head for one of the supporting paddles and supporting rods showing the supporting bracket in horizontal section.

Fig. 4 is a detail plan view of the synchronizing mechanism, with the guide brackets removed but indicated in dotted lines, and with the paddle supporting rods and stop pins shown in cross section.

Like parts are identified by the same reference characters throughout the several views.

A set of floats 1 and 2 are preferably constructed in the form of elongated cylinders having wedge shaped extremities 3 formed by flattening and converging the side walls of the cylinders at the respective ends. The cylinders are, of course, closed to form water-tight chambers. They are connected near their front ends by cross bar 5 and near their rear ends by a set of cross bars 6 and 7 respectively. They are also connected at an intermediate point by a strip of fabric 10 which constitutes a body supporting member or hammock. The cross bar 5 is extended beyond the floats 1 and 2 on each side and is pivotally connected at 11 with a set of auxiliary floats 12 and 13. These floats may be similar in form to the floats 1 and 2 but are shorter and, if desired, may be made flatter or thinner in the horizontal dimension. They are adapted to swing upon the vertical pivot posts 11 and therefore are adapted to be used for steering purposes. Near their front ends they are connected by a link rod 15, this rod being also pivoted at 16 to the respective steering floats 12 and 13. Cross bar 5 is provided with a bracket 17 to which an operating lever 18 is fulcrumed at 19, said lever being pivotally connected with link rod 15 at 20. The cross bar 5 is provided with a segmentally arranged series of apertures 21 in which a stud projection 22 carried by the lever is adapted to engage, whereby the lever may be located in any desired position of adjustment.

In the position illustrated by the full lines in Fig. 1, the steering floats 12 and 13 are parallel with floats 1 and 2 and the machine will therefore move forwardly along a straight line when propelled, but by operating the lever 18 in one direction or the other, the steering floats may be shifted, whereupon the machine will travel a circular path when propelled. In Fig. 1, the lever 18 is indicated by dotted lines as having been swung to a position in which the steering floats are adjusted for a right hand turning movement of the swimmer.

The cross bars 6 and 7 are connected with each other between the floats by guide bars 30 and 31, each of which carries a raised bearing bracket 32 in the upper end of which a stud 33 is journaled and provided with a swivel head 34 in which a paddle supporting rod 35 is mounted to oscillate. The paddle supporting rod is provided with a stop projection or screw 36 and the swivel head is provided with radial projecting arms 37 having adjustable screws 38 extending horizontally therethrough, with their inner ends serving as stops to limit the swinging movement of the stop arm or screw 36, thereby limiting the oscillatory movement of the paddle supporting rod 35.

Each of the paddle supporting rods is provided with a paddle 40 on its lower end. These paddles are preferably made wider on one side than on the other side to facilitate the feathering movements herein described. Above the paddle each paddle supporting rod 35 is provided with a stirrup 43, in the base of which the paddle rod 35 is journaled, whereby said rod may be oscillated rotatively without affecting the position of the stirrup.

The arrangement is such that when the

stop arm 36 carried by one of the paddle rods 35 is in engagement with the adjustable stop 38 carried by the swivel head, the paddle will be held transversely to the arc of movement along which it swings when the paddle is pushed backwardly in the water. In such case the paddle will, of course, swing upon its pivotal connection by means of stud 33 with the supporting bracket 32. But when the paddle is drawn forwardly in the water, it is permitted to oscillate to a feathering position, rod 35 turning in swivel head 34 a one-quarter turn until stop arm 36 contacts with adjustable stop 39 as indicated by dotted lines in Fig. 3. By locating the supporting rods 35 at one side of the longitudinal center lines of the paddles 40, whereby the latter will have a greater width on one side of the rods than on the other side of the rods, it is obvious that the paddles will tend to feather automatically when drawn forwardly, whereas when pushed rearwardly, they will automatically turn to a position with stops 36 engaging stops 38, thus preventing the paddles from performing a half revolution upon the axes of their supporting rods, and holding them in the quarter turned position, with the paddles effective.

It will be observed that the guide bars 30 and 31 are provided with projections 46 on their outer sides and these projections are connected by bars 47, thereby forming guide ways or slots between them and the guide bar 30 (or 31) and the paddle supporting rods 35 project through these guide ways and swing within them from points near one end thereof to points near the other end. Immediately above the guide bars 30 and 31 the paddle supporting rods 35 are each provided with an arm 50, adapted, during the final movement of rod 35 in either direction to engage an upwardly projecting post 51 on the corresponding guide bar 30 or 31, whereby the paddle supporting rod is mechanically turned in the same direction that the paddle tends to turn when the swinging movement of the paddle and paddle supporting rod is reversed. By utilizing these arms 50 and posts 51 to oscillate the paddles and paddle supporting rods, the paddles may be adjusted in the stroke position preparatory to the rearward movement and in the other position preparatory to forward movement. I thus avoid loss of power at the beginning of the rearward or propulsion stroke of the paddle pending the swinging of the paddle to stroke position. I also avoid lost motion which would otherwise result if the paddle remained in stroke position until the beginning of the forward stroke and turned to feathering position only by the resistance of the water.

In order to synchronize the strokes of the paddle, with particular reference to the use of the machine by inexperienced swimmers, I connect the paddle supporting rods with each other by means of a flexible cable 55, which extends over pulleys 56 and 57, mounted on vertical bearing shafts or studs extending backwardly from the guide bars 30 and 31 respectively. With this construction, it is obvious that when one paddle is moved rearwardly its motion will be transmitted through the cable 55 to draw the other paddle forwardly. The cable may be connected with the paddle rods 35 by loose collars encircling said rods whereby the cable will not interfere with the oscillatory movement of the rods and paddles as above described.

In operation, the swimmer is mounted between the floats 1 and 2, the breast of the swimmer being supported by the sling or hammock 10. The hands of the swimmer may grasp cross bar 5 or link rod 15. The feet will be engaged in the stirrups 43 and the legs of the swimmer will be utilized to actuate the stirrups 43 in alternation, thereby reciprocating the paddles in alternation, said paddles feathering on the forward stroke and turning to effective position at the completion of the forward or at the beginning of the rearward stroke. Where the paddle arms 50 are employed, the paddles will turn preparatory to a reversal of the stroke,—otherwise they will turn during the initial portion of the reverse movement. Where the synchronizing cable 55 is employed, the paddles will be moved strictly in alternation, otherwise they may be operated in unison if desired. The swimmer need pay no attention to steering the machine after the cross bar has been set by an adjustment of lever 18, but when a deviation from such course is desired, lever 18 will, of course, be adjusted to swing the steering floats to the proper position.

I claim—

1. A swimming machine, comprising a set of floats connected with each other by suitable frame bars and provided with a body supporting hammock sling, self feathering paddles supported from said floats near their rear ends, and foot engaging stirrups connected with said paddles for operating the latter.

2. A swimming machine, comprising a set of floats connected with each other by suitable frame bars and provided with a body supporting hammock sling, self feathering paddles supported from said floats near their rear ends, and foot engaging stirrups connected with said paddles for operating the latter, together with a set of steering floats, and means for manually adjusting the same for steering purposes.

3. In a swimming machine, the combination with a supporting bearing member, of a swivel head having a stud mounted to rotate in said bearing member, a paddle sup-

porting rod having its upper end swiveled to said head upon an axis at right angles to the axis of the bearing member, means for limiting the oscillatory movements of the paddle supporting rods in said swivel head, a paddle connected with said rod, and a device located between the swivel head and the paddle in which said rod is journaled,—said device being adapted to facilitate actuation of said rod to reciprocate the paddle while allowing it to freely oscillate for feathering purposes.

4. In a swimming machine, the combination with a pair of spaced floats connected by a body supporting member at an intermediate point, and rigidly connected near their respective ends, of a set of raised mountings carried by the connections at one end of said floats, swivel heads supported by said mountings, paddle supporting rods, each having its upper end swiveled to one of said heads, paddles on the lower ends of said rods, and intermediate actuating devices in which the rods are journaled adjacent to the paddles, said actuating devices being adapted to facilitate application of power to the paddles by a person whose body is supported by said body supporting member.

5. In a swimming machine, the combination with a set of feathering paddles, means for manually actuating said paddles, and flexible connections provided with pulley guides, and adapted for synchronizing the movements of said paddles, whereby they are compelled to travel in opposite directions in alternation.

6. In a swimming machine, the combination of a set of cylindrical floats, a body supporting sling connecting the floats intermediately, and a set of downwardly projecting paddles supported by the floats in a position to be reciprocated by a person whose body is supported by said sling.

7. In a swinging machine, a set of cylindrical floats, a body supporting sling connected with the floats, a set of downwardly extending self feathering paddles located between the floats, and provided with stirrups adapted to receive the feet of the user, and also adapted to transmit motion to the paddles without interfering with feathering operations.

8. In a swimming machine, a set of cylindrical floats, paddle mechanism connected with the floats near one end, and provided with downwardly extending self feathering paddles, foot power connections for reciprocating said paddles, and a body supporting sling carried by the floats, in a position to receive the body of the person whose feet are engaged with the foot power connections.

9. In a swimming machine, a set of cylindrical floats, paddle mechanism connected with the floats near one end, and provided with downwardly extending self feathering paddles, foot power connections for reciprocating said paddles, and a body supporting sling carried by the floats, in a position to receive the body of the person whose feet are engaged with the foot power connections, together with a set of auxiliary floats pivotally connected with the frame of the first mentioned floats, and means for manually swinging the auxiliary floats upon said pivotal connections for steering purposes.

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

ORIN C. SAMPHERE.

Witnesses:
O. C. WEBER,
FREDERICK W. NOLTE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."