

May 2, 1933.

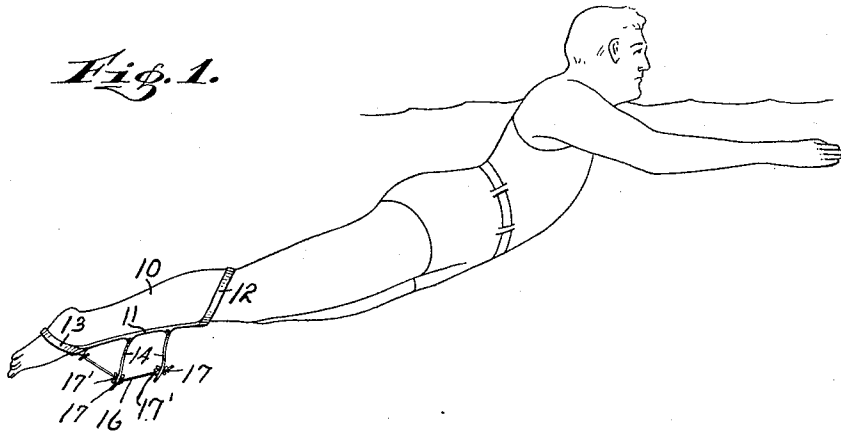
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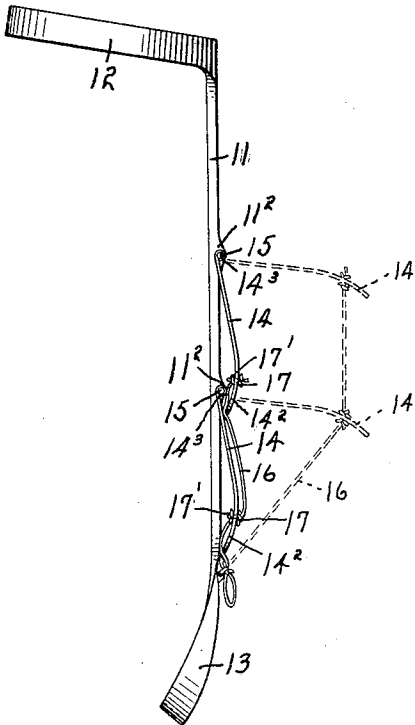
SWIMMING DEVICE

Filed May 7, 1932

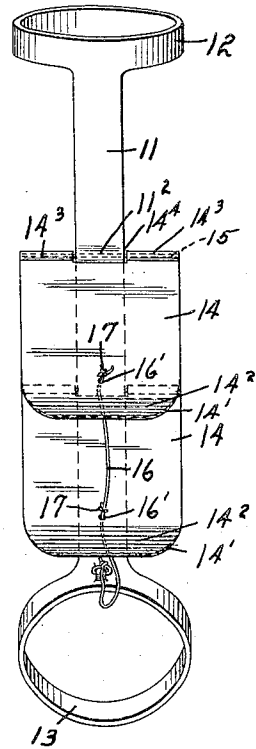
*Fig. 1.*



*Fig. 3.*



*Fig. 2.*



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# UNITED STATES PATENT OFFICE

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## SWIMMING DEVICE

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The present invention relates to swimming apparatus.

One object of the present invention is to provide a device which may be applied to a swimmer's legs to increase their propelling capacity.

Another object is to provide a device which may be mounted on the swimmer's legs in such manner as to be most comfortable and which will provide a minimum of resistance to movement in the water.

Still another object is to provide a simple and inexpensive attachment.

With the above and other objects in view my invention comprises the novel combination, arrangement and construction of elements to be hereinafter more fully described, shown and defined in the appended claims.

In the accompanying drawing which is to be read in conjunction with this specification and in which similar reference characters denote corresponding parts:—

Fig. 1 is illustrative of the use of the device by the swimmer; and

Figs. 2 and 3 are respectively a front and a side elevation of the device.

Referring to the drawing, 10 denotes a swimmer's leg on which my device is adapted to be attached. The device comprises a supporting member 11 which is made of solid rubber, cloth or other yieldable material and which is preferably non-expandible. Said member when used is adapted to lie along the front part of the leg and extend parallelly to the length thereof. Provided at the upper end of said member is an encircling band or loop 12 made either of flexible, expandible rubber or other suitable material which is adapted to extend about the wearer's leg and serves to securely hold the upper end of member 11 thereto. If desired, said band or loop 12 may be integrally formed with member 11 or otherwise permanently attached thereto. Likewise, instead of a band or loop, a strap or other fastening means may be employed.

At the lower end of member 11 and extending downwardly therefrom is a closed loop 13 either integrally formed with or suitably attached thereto. Said loop may also be of

flexible expandible rubber or other suitable material and is adapted to encircle the wearer's foot in such manner that member 11 is retained on the front part of the leg. Other suitable fastening means may be employed.

Intermediate the ends of member 11 and pivotally attached thereto in any suitable manner are blades 14 of metal or any other suitable material. The latter serve as paddles in a manner to be presently described and in the present embodiment are shown as rectangular in shape with rounded corners 14' and having their free narrow ends 14<sup>2</sup> cupped for a purpose to be presently described. They may have any other desired shape. One method of pivotal connection is to provide a hinge joint, the knuckle being formed by rounding the ends 14<sup>3</sup> of the blades 14 leaving a recess 14<sup>4</sup> centrally at said ends and providing holes in thickened portions 11<sup>2</sup> of the member 11 serving as the complementary parts of the knuckle and which fit into the respective recesses. Pintles 15 serve as the hinge joining members in usual manner. Rotation of said blades is limited in one direction to prevent them from rotating further than substantially perpendicular to the member 11. Such limit of rotation is effected by means of a flexible band or cord 16 permanently attached to member 11 near its lower end and passing through holes 16' in the respective blades. Stops 17 and 17' are respectively provided on said cord on the opposite sides of the respective holes 16' so that blades 16 cannot separate more than a predetermined distance apart at their free ends and likewise cannot rotate beyond a position substantially perpendicular to the member 11. Any other suitable control means for said blades may be used. Opposite movement of said blades into a position substantially parallel with member 11, i. e. collapsed position, is not limited by the cord or band 16.

The device is used as follows:—

The wearer passes his foot through the loop 12 and slides the latter upwardly on his leg and inserts his foot through loop 14, adjusting member 11 to lie along the front part of his leg. Loops 12 and 14 firmly hold

said member 11 in place on said front part of the leg. One of said devices is mounted on each leg of the swimmer. In the water when the swimmer's legs kick outwardly away from the body the blades 16 are automatically rotated into the aforementioned perpendicular position at which time they extend laterally from the wearer's legs and serve as paddles to increase the pushing power of the feet. When the swimmer retracts his legs, drawing them in towards his body, said paddles fold over into the aforementioned collapsed position affording little, if any, resistance to the leg movement of the swimmer. By virtue of the cupping of the blades, as aforementioned, better grip on the water is effected during the power stroke and less resistance on the return stroke of the legs is obtained. The mounting of the device such that member 11 lies along the front part of the leg and the blades extend therefrom is of importance. By so mounting, sideward motion of the legs is in no way restricted.

It is obvious that my device may be modified in many ways without departing from the spirit of my invention and I do not wish to be limited in any way to the details shown and described.

What I claim is:—

1. A swimming device comprising a supporting member adapted to lie along the front part of a swimmer's legs, means to retain said member in said position, blades pivotally mounted to said supporting member, the pivotal mounting of said blades comprising a hinge formed by rounding the rear edge of each blade and providing a recess in each of said rounded ends to form one part of a hinge knuckle, thickened portions on said supporting member adapted respectively to fit into said recesses and to serve as the complementary members of the knuckles and a pintle to joint each of said knuckles, and means to limit rotation of said blades.

2. A swimming device comprising a supporting member adapted to lie along the front part of the swimmer's legs, means to retain said member in said position, blades pivotally mounted on said supporting member, the pivotal mounting of said blades comprising a hinge formed by rounding the rear edge of each blade and providing a recess in each of said rounded ends to form one part of a hinge knuckle, thickened portions on said supporting member adapted respectively to fit into said recesses and to serve as the complementary members of the knuckles and a pintle to join each of said knuckles, and flexible means connected to said supporting member and said blades to limit the rotation of the latter.

3. A swimming device comprising a supporting member adapted to lie along the front part of a swimmer's leg, a loop at the

upper end of said member and a second loop at the lower end of said member for retaining said member in said position, blades pivotally mounted to said supporting member and having cupped ends, the pivotal mounting of said blades comprising a hinge formed by rounding the rear edge of each blade and providing a recess in each of said rounded ends to form one part of a hinge knuckle, thickened portions on said supporting member adapted respectively to fit into said recesses and to serve as the complementary members of the knuckles and a pintle to join each of said knuckles, and means to prevent the rotation of said blades beyond the perpendicular with said member, said means comprising a flexible member attached to said supporting member and passing through said blades and stops on said flexible member on each side of said blades.

4. A swimming device comprising a supporting member adapted to lie along the front part of a swimmer's leg, means for retaining said member in said position, blades pivotally mounted to said supporting member, the pivotal mounting of said blades comprising a hinge formed by rounding the rear edge of each blade and providing a recess in each of said rounded ends to form one part of a hinge knuckle, thickened portions on said supporting member adapted respectively to fit into said recesses and to serve as the complementary members of the knuckles and a pintle to join each of said knuckles, and means to prevent the rotation of said blades beyond normal with said member, said means comprising a flexible member attached to said supporting member and passing through each of said blades and stops on said flexible member on each side of said blades.

In testimony whereof, I affix my signature.  
ERNST WINKLER.