April 20, 1937. H. W. EUSTIS 2,078,068

SWIMMING DEVICE

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Fig. 1.

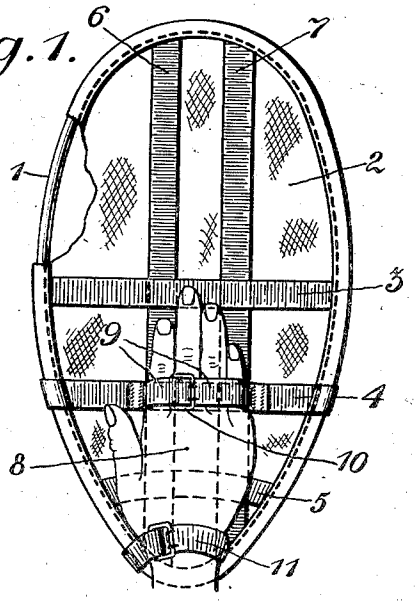
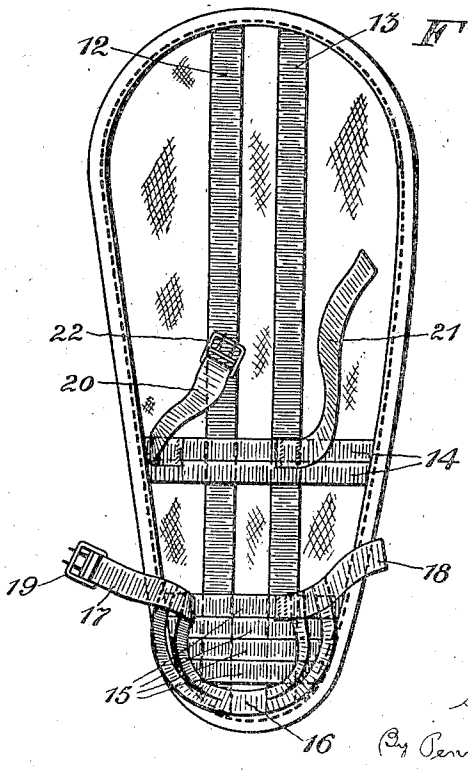


Fig. 2.



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SWIMMING DEVICE

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3 Claims. (Cl. 9—21)

Various swimming devices are already known consisting of paddle-like members which may be attached to the limbs; they generally consist of two parts, either for both hands or for both feet, the object being to enlarge the surface which comes into contact with the water. As the surface must sustain considerable pressure, such devices are consequently designed to have the necessary power of resistance and consist generally of a paddle, for instance constructed of wood, which has the tendency to be too heavy. The theory has been held that the propulsive effect from a given impetus could be increased by using a device in the form of a shell; collapsible devices which open on the impetus stroke and close on the recovery have also been tried.

All of these appliances aim to increase the propulsive effect of the normally exercised impetus. Experience, however, has shown that devices of lighter construction having a greater expanse of surface and length of sweep with which the impetus could be applied, not only in a direct or normal thrust, but in a slanting tangent, as of an inclined plane or propellerwise, eventuating in a swift, so called, tail-flip, (as of a fish), result in a much greater propulsive effect.

To this end, my invention consists of four nearly elliptical planes, two for the hands, and two for the feet, constructed of a metal hoop, covered with cloth, on which bands of fabric are stretched lengthwise and crosswise; these bands also provide the basis for attaching the straps which hold the limbs, which straps are so placed as to old the limb near one focus of the ellipse; at least half of the length of the ellipse extending beyond the limb (foot or hand), thus lengthening the limb accordingly and thereby increasing the tangential velocity of the portion thus extended.

The attached drawing gives an example of the form the invention may take, i. e.

Fig. 1 is a plan view of one form of the invention applied to the hand.

Fig. 2 is a plan view of a modified form of the invention to be applied to the right foot.

The plane shown in Fig. 1 consists of an elliptical frame of metal, for instance rustless steel 1, and is covered with cloth 2. Three bands 3, 4, 5 stretched crosswise, and two bands 6, 7 stretched lengthwise, give greater rigidity to the device while being at the same time used to hold the hand 8. For this purpose two straps 9 are fastened to band 4 provided with a buckle 10; two more straps, also provided with a buckle 11 pass around and hold the wrist. The palm of the hand rests mainly upon bands 4, 5, 6, 7. As may be seen from the drawing, the hand is placed near one focus of the ellipse, which is at least twice as long as the hand.

As material for the covering, canvas may be used.

The plane shown in Fig. 2, which is intended for the right foot, is similarly constructed, possessing also two longitudinal bands 12, 13 but the cross bands 14, 15 are placed slightly different. In order to hold the foot firm, the rear straps 17, 18 with buckle 19, support a cross-strap 16 which passes around the heel, while the forward straps 20, 21 with buckle 22 pass over the ball of the foot.

As may be seen from the drawing this plane is also at least twice as long as the foot which is placed fully at the rear end of the plane, and. in order that the two feet may not interfere, the foot is placed not in the middle but nearer the left edge of the plane. For the left foot, the position would be the opposite.

In proportion to its surface the above-described device is very light, thereby making possible, not only normal, direct thrusts, but the before-mentioned obliquely directed propeller-like strokes which eventuate in much greater propulsive effect.

What I claim is:—

1. A swimming device comprising a substantially planar rigid hoop of generally elliptical shape, a covering secured to said hoop, reinforcing bands for said covering secured to said hoop and extending lengthwise and crosswise thereof, straps for securing a body-propulsion member flatwise against one side of said covering, said straps being so placed as to hold the body-propulsion member at one end of the device and at a focus of said ellipse, said device being at least substantially twice as long as the body propulsion member to be secured thereto, whereby in swimming the stroke is lengthened and the tangential, oblique, propellerwise velocity thereof is increased with resultant increased propulsion effect.

2. A swimming device comprising a substantially planar rigid hoop of generally elliptical shape, a covering secured to said hoop, reinforcing bands for said covering secured to said hoop and extending lengthwise and crosswise thereof, front and rear straps for securing a body-propulsion member flatwise against one side of said covering, said straps being so placed as to hold the body-propulsion member at one end of the device and at a focus of said ellipse, said front and rear straps also being placed out of alignment with respect to the longitudinal axis

of the device, whereby the body-propulsion member, when secured to said covering, is positioned angularly with respect to said longitudinal axis, said device being at least substantially twice as long as the body-propulsion member to be secured thereto, whereby in swimming the stroke is lengthened and the tangential, oblique, propellerwise velocity thereof is increased with resultant increased propulsion effect.

3. A swimming device comprising a substantially planar rigid hoop of generally elliptical shape, a fabric covering secured to said hoop, spaced reinforcing bands for said covering extending lengthwise and crosswise thereof, means for securing a body-propulsion member flatwise against one side of said covering and over said spaced reinforcing bands, said securing means being so placed as to hold the body-propulsion member at one end of the device and at a focus of said ellipse, said device being at least substantially twice as long as the body-propulsion member to be secured thereto, whereby in swimming the stroke is lengthened and the tangential, oblique, propellerwise velocity thereof is increased with resultant increased propulsion effect.

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