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SWIMMER'S HAND PADDLE

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Fig.1.

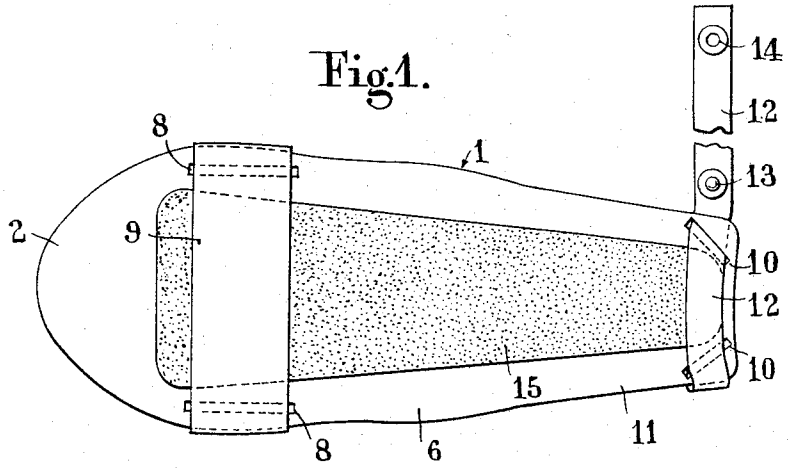


Fig.2.

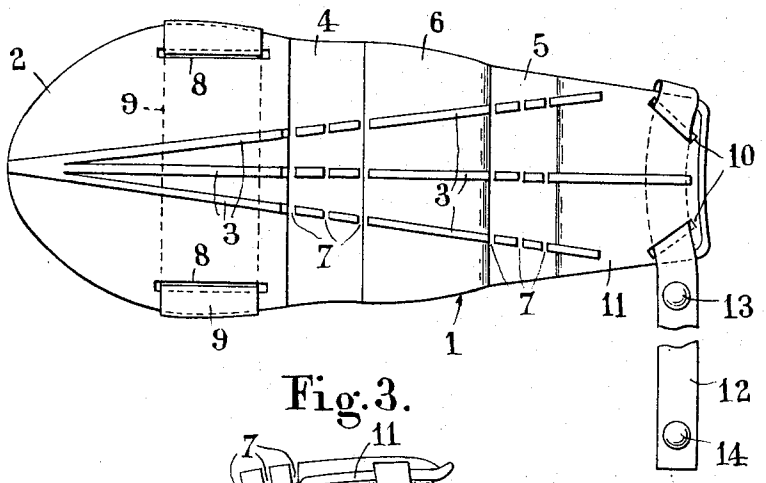
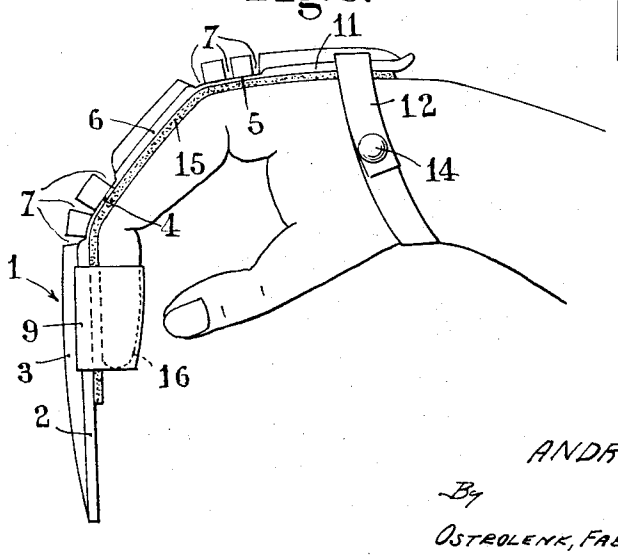


Fig.3.



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SWIMMER'S HAND PADDLE

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4 Claims. (Cl. 9—307)

This invention relates to hand paddles for swimmers, of the type adapted to be mounted on the back of the swimmer's hand by fastening means passing round the wrist, the metacarpus or the phalanges and leaving the thumb free.

Hand paddles of this type are already known. They comprise a rigid end blade projecting considerably from the ends of the ungual phalanges.

These known paddles are objectionable in that they are not jointed or hinged and therefore cannot be attached to the finger tips, since the gripping faculty of fingers must be preserved.

Furthermore, as the paddle tip can move more or less away from the fingers during the tractive movements exerted underwater the efficiency of these paddles is rather questionable.

It is the essential object of this invention to avoid this inconvenience by providing an improved paddle adapted to be secured on the swimmer's hand while leaving the thumb free, this paddle comprising a blade longer than the hand length and being moulded from suitable plastic material; furthermore, this blade is slightly concave on its inner face and formed with two thinner transverse portions disposed on either side of the central region of the blade to constitute a front hinge and a rear hinge adapted to cover respectively the first joint and the second joint of the hand, this swimmer's hand paddle further comprising a relatively wide, non-extensible strap connected to and passing over the front inner end portion of the blade proper, beyond said front hinge zone, the fingers except thte thumb being adapted to be engaged under this strap, the assembly being completed by an elastic band mounted on the rear end of the blade proper and adapted to be adjustably secured on the user's wrist.

This band holds the blade in the proper position and urges it backwards when the hand is re-stretched or open after having been closed.

The paddle is advantageously manufactured from a suitable moulded plastic, except for the rear fastening band. This manufacture is convenient and the paddle thus obtained is both sturdy and efficient.

The paddle may be provided on its outer face with longitudinal stiffening ribs intersected by grooves in the aforesaid two thinner transverse zones constituting the front and rear hinges.

Preferably, the finger tips do not project from the front edge of the finger-holding strap for the front end portion of the paddle should project to a substantial extent beyond the finger tips in order to produce an efficient action on the water.

The paddle may be provided on its inner face, in the region thereof adapted to contact the back of the swimmer's hand, with a flexible lining of latex foam or synthetic resin foam.

The blade joints enable the user to close the fists completely, so that he can hold or grip something; in other words, wearing these paddle does not prevent the user from gripping objects.

Nevertheless, the user's hand is in constant full contact with the paddle surface, thus ensuring a maximum tractive effort in the water medium. The structure according to this invention will thus improve the paddle efficiency by alternatively permitting of reducing the paddle length, or in other words its dimensions and weight.

A specific form of embodiment of this invention will now be described by way of example with reference to the attached diagrammatic drawing, in which:

FIGURE 1 is a plan view showing the inner face of the paddle;

FIGURE 2 is a plan view showing the outer face of the paddle;

FIGURE 3 is a side view showing the paddle mounted on the right hand of the user.

The paddle 1 consists of a blade moulded from suitable plastic material and is advantageously slightly concave on its inner face. It comprises a widened and rounded front portion 2. On its outer or back face it is formed preferably but not compulsorily with longitudinal stiffening ribs 3 and two flexible thinner transverse regions 4, 5 consisting of recesses visible on the outer face, these two regions being located on either side of the central region 6 of the blade and constituting the hinge zones thereof. In these regions 4, 5 the ribs 3, if provided, are discontinued by grooves 7 so that these regions remain flexible to constitute hinge-like portions; the ribs 3 prevent the thinner regions 4, 5 from bending abnormally outwardly, thus preventing at the same time an abnormal turning of the fingers inside out when a strong pressure is exerted accidentally on the blade 2.

The front section 2 of this blade may comprise two longitudinal slots 8 located near its lateral edges. The function of these slots is to permit the mounting on the blade, by any conventional means, beyond the thinner front portion 4, of a relatively wide strap 9 passing over the outer face of the blade and under which the fingers may be inserted. However, this strap 9 may advantageously be moulded integrally with the paddle to constitute a unitary structure therewith.

Two shorter slots 10 are disposed obliquely near the edges of the rear portion 11 of the blade, beyond the rear thinner zone 5 thereof. These slots permit of mounting an adjustable elastic band 12 adapted to fit round the user's wrist and over the back face of the blade, the fastening means of this band consisting for example of dome-fasteners 13, 14 of which one of the two components may be multiple (not shown) in order to permit the adjustment according to the wrist size.

A pad or lining of foam material 15 such as rubber or plastic foam is glued on the inner face of the blade and adapted to be engaged by the back of the hand to improve the user's comfort.

FIGURE 3 illustrates the position of the user's hand on the paddle. The fingers, except the thumb, are introduced under the strap 9; preferably, the finger tips 16 do not project from this strap and the front portion 2 projects to a substantial extent from the finger tips. The thumb is free and the band 12 is clamped obliquely round the wrist. It will be seen that the hinge-forming thinner strips 4, 5 permit the free movements of the first and second joints of the fingers, respectively. The rear portion 11 of the blade covers the back of the hand and its rear edge lies just ahead of the wrist joint so as to abut against the wrist when the hand is bent outwardly.

Of course, various details may be modified in the practical embodiment of the paddle described hereinabove and illustrated in the drawing, notably by altering the number and shape of the stiffening ribs, or in connection with the structure of the two thinner hinge-forming regions, without departing from the spirit and scope of the invention as set forth in the appended claims.

What I claim is:

1. A swimmer's hand paddle adapted to be secured on the back of the hand while leaving the thumb free, com-

prising, a blade which is of a length to extend from a first end in the vicinity of the wearer's wrist to a second end beyond the end of the user's fingers;

said blade being an integral unit comprised of a suitable plastic having a first thickness; said blade having two regions intermediate said first and said second ends which have a second thickness less than said first thickness; said regions being separated from each other and extending transversely across said blade; one of said regions comprising a front hinge and the other of said regions comprising a rear hinge, adapted to engage, respectively the first and second joints of the fingers; each of said regions having such width that each of said regions can bend around the outside of the knuckles of its respective joint;

said blade having an outer face with stiffening ribs thereto attached; said ribs extending longitudinally along substantially the entire length of said blade to stiffen its entire length and prevent flexion of said blade;

said ribs also extending over said regions; said ribs having a plurality of gaps over said regions, whereby said ribs stiffen said regions, but permit them to be flexed as the joints of the fingers are flexed, while at the same time preventing said regions from bending backward;

a strap of a nonextensible material attached to said blade intermediate said first hinge and said second end of said blade for securing said blade to the ends of the fingers of the wearer;

a second strap attached to said blade in the vicinity of said first end of said blade for securing said blade to the wrist of the wearer.

2. A swimmer's hand paddle as set forth in claim **1**, wherein said blade has an inner face; said inner face having a portion which contacts the back of the wearer's hand; said portion being provided with a flexible lining of a material selected from the group comprising latex foam and synthetic foam materials.

3. A swimmer's hand paddle adapted to be secured to the back of the swimmer's hand but leaving the thumb free, which comprises a blade somewhat longer than the hand, said blade comprising a unitary piece of molded plastic material and comprises from its front end to its rear end: a relatively wide and rounded blade (**2**) adapted to project substantially from the finger tips at the front, a first flexible transverse thinner section (**4**) adapted to cover the portion extending between the second joints and the phalanges of the user's hand, an intermediate section (**6**), another transverse thinner flexible section (**5**) adapted to cover the portion extending between the phalanges and the metacarpus of the hand, and a rear section (**11**) adapted to extend up to the wrist joint, a non-extensible and relatively wide strap (**9**) mounted on the rear portion of blade (**2**) and adapted to receive thereunder the finger tips and one portion of the top joints of the user's hand, and an elastic strap (**12**) mounted at the rear of the rear section (**11**) of the blade and adapted to be adjustably tightened around the user's wrist.

4. A swimmer's hand paddle as set forth in claim **3**, which is formed with longitudinal ribs (**3**) on its back face to prevent it from bending outwardly, said ribs being cut by transverse grooves (**7**) located in its two thinner and flexible sections (**4**) and (**5**) to permit the inward bending of these sections.

References Cited

UNITED STATES PATENTS

1,413,967	4/1922	Clarke	9—307
3,107,371	10/1963	Thompson	9—303

FOREIGN PATENTS

556,165	4/1958	Canada.
1,248,039	10/1960	France.
638,470	10/1959	Italy.

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