Aug. 2, 1960 C. RABIN 2,947,010

ARM FINS FOR UNDERWATER SWIMMING

Filed Sept. 30, 1958

Fig.1

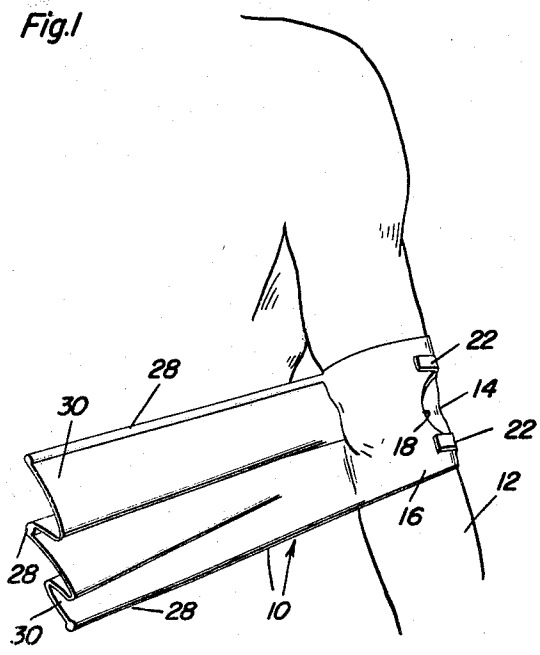


Fig.2

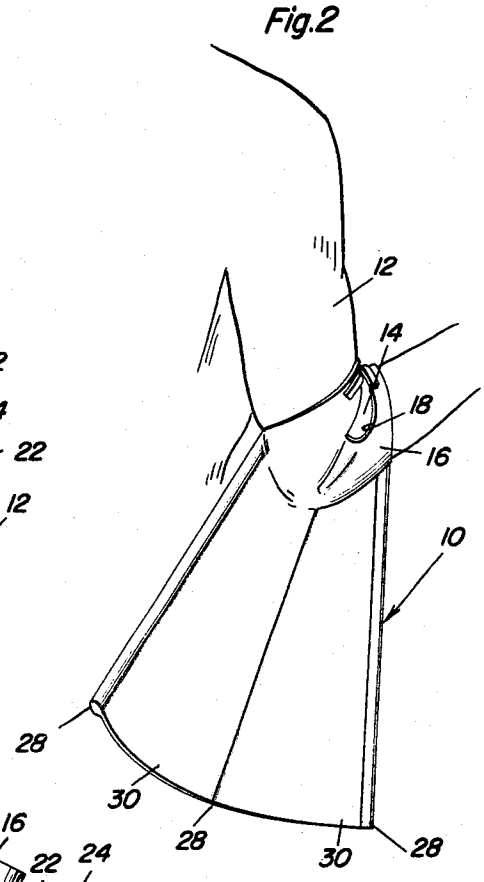


Fig.3

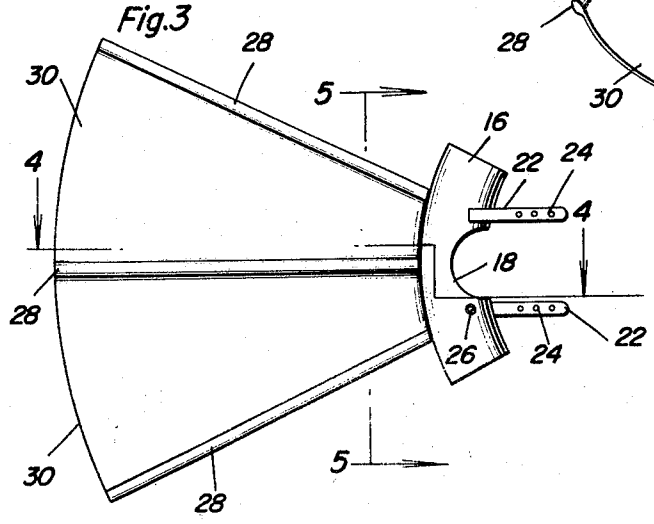


Fig.5

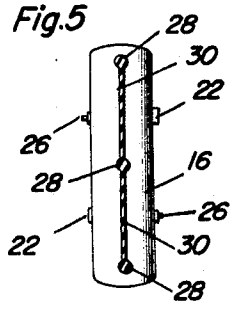
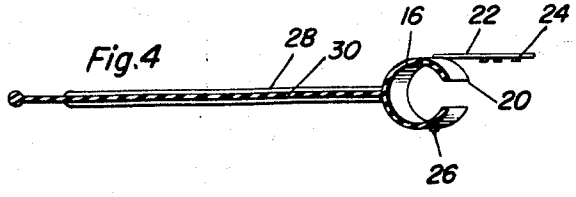


Fig.4



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ARM FINS FOR UNDERWATER SWIMMING

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6 Claims. (Cl. 9—307)

The present invention generally relates to an arm attachment and more particularly to a fin attached to each arm which is especially adapted for use in underwater swimming.

In recent years, there has been extensive use of equipment enabling persons to stay under water for relatively long periods of time without the use of cumbersome and heavy diving suits. This equipment is generally known as skin diving equipment generally including foot fins for attachment to the feet for facilitating swimming under water. However, the hands are used in the normal swimming motion when swimming under water since heretofore there has been no provision for increasing the effectiveness of the hands and arms when swimming under water. Therefore, it is the primary object of the present invention to provide fins for attachment to the arms at the elbows for purposes of increasing the effectiveness of the arms when swimming under water and leaving the hands free for other purposes such as carrying an instrument such as an underwater gun or the like.

Another object of the present invention is to provide arm fins for underwater swimming which are generally in collapsed position when the arm is in straight condition and unfolded to an extended condition when the elbow is bent whereby inward and outward movement of the elbow in relation to the body will cause the fins to operate somewhat in the nature of a fish tail for propelling the swimmer through the water.

Another important feature of the present invention is to provide arm fins which are easy to attach, efficient in operation, simple and long lasting and relatively inexpensive to manufacture.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawing forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view of an arm fin of the present invention attached to the arm with the fin being folded and the arm straight;

Figure 2 is a perspective view of an arm fin showing the arm bent and the fin unfolded into extended position;

Figure 3 is a side elevational view of the arm fin;

Figure 4 is a plan sectional view taken substantially upon a plane passing along section line 4—4 of Figure 3 illustrating the construction of the fin; and

Figure 5 is a vertical sectional view taken substantially upon a plane passing along section line 5—5 of Figure 3.

Referring now specifically to the drawings, the arm fin of the present invention is generally designated by the numeral 10 and while there is a single fin illustrated in the drawings, it will be understood that a pair of fins is provided with each of the fins being attached to the arm 12 at the elbow region 14.

The arm fin 10 includes a tubular flexible sleeve 16 having a notch 18 centrally therein and having a longitudinal slit extending therethrough with the slit or slot-like opening being designated by the numeral 20 and facing the forward surface of the arm 12 when worn. The sleeve 16 is adapted to be worn on the arm 12 to extend above and below the elbow joint of the arm. The notch 18 facilitates folding of the sleeve 16 into a generally arcuate condition into elbow form. Above and below the notch 18 and on opposite sides of the sleeve 16 is attached a strap 22 having a plurality of female snap fastener elements 24 thereon for engagement with a male snap fastener element 26 on the opposite side of the sleeve 16 thereby retaining the sleeve 16 in encircling relation to the arm 12 of the person wearing the device with the notch 18 being aligned with the elbow region so that the notch 18 will facilitate the folding of the sleeve 16 into acute angular relation from the condition shown in Figure 1 to the condition shown in Figure 2.

On the side of the sleeve 16 opposite from the slot-like opening 20 is a plurality of outwardly extending and generally diverging ribs 28 which are interconnected by flexible webs 30 which are integral with the ribs 28. Two of the ribs 28 are disposed at opposite sides of the transverse center of the sleeve 16 and a third intermediate rib 28. The webs 30 fold so that the ribs 28 may be disposed generally in parallel relation to each other when the fin 10 is in retracted or folded condition with the arm 12 being straight. When the arm 12 and sleeve 16 are bent at the elbow region, the sleeve 16 is folded and stretched into elbow form by movement of the forearm to bend the elbow, whereby the ribs 28 are caused to assume a fanwise arrangement, the webs 30 to straighten out and the ribs 28 are disposed in diverging relation as shown in Figures 2 and 3. Also the ribs 28 stiffen the fin and limit the flexure thereof.

In using the fin in underwater swimming, the elbows 14 are bent in the usual manner and by pivoting the arms and elbows 14 outwardly and inwardly in relation to the sides of the wearer, the fins will effectively act as a fish tail for forcing or propelling the wearer through the water. This leaves the hands free for other purposes since they do not have to be used in underwater swimming. In considering the position shown in Figure 2, assume that the person wearing the device is disposed generally horizontally and the elbow 14 is moved outwardly and inwardly while the hands are held generally in the same position and due to the flexibility of the fins, the person wearing the same will be effectively propelled through the water.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. An arm fin for underwater swimming comprising a sleeve of flexible material slit for encircling an arm, strap means on said sleeve for securing the sleeve in encircling relation to an arm above and below the elbow with the transverse center of the sleeve coinciding with the elbow joint for folding movement of the sleeve from a straight position into elbow form by bending the arm at the elbow, a plurality of ribs extending radially outwardly from said sleeve, said ribs being interconnected by flexible webs with the webs and ribs lying in a single longitudinal plane, said ribs being disposed in parallel relation when the sleeve is straight such as when the arm is straightened and being disposed on opposite sides of the transverse center of the sleeve to assume diverging relation to each other in response to folding of the sleeve

into elbow form in conformance with bending of the elbow and thereby extending the webs into a fin so that inward and outward movement of the elbow in relation to the body of the person wearing the fin will cause the fin to act in the nature of a fish tail for propelling the wearer through the water.

2. The structure defined in claim 1 wherein said sleeve is provided with a notch-like recess in the center thereof for registry with the elbow joint region for facilitating folding of the sleeve.

3. The structure as defined in claim 1 wherein said means for securing the sleeve on the arm includes a pair of flexible straps each having one end attached to the sleeve and the other end detachably connected thereto on the opposite sides of the slit in the sleeve.

4. For use in underwater swimming, a flexible sleeve for attachment to an arm of a swimmer at the elbow joint region for folding at the region of its transverse

center into elbow form from a straight condition in response to bending of the elbow of the arm, radial ribs on said sleeve at opposite sides of the transverse center of the sleeve for operation of one rib into diverging relation to another in response to folding of the sleeve on an arm into elbow form, and a web connecting said ribs and pulled taut in response to operation of said one rib into diverging relation to another rib.

5. The structure defined in claim 4, said sleeve having a notch therein to facilitate folding thereof.

6. The structure as defined in claim 4, and a rib on said sleeve at substantially the transverse center of the sleeve and to which said web is also connected.

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