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3,178,738

CONVERTIBLE SWIM FIN

Filed Nov. 16, 1961

FIG. 1

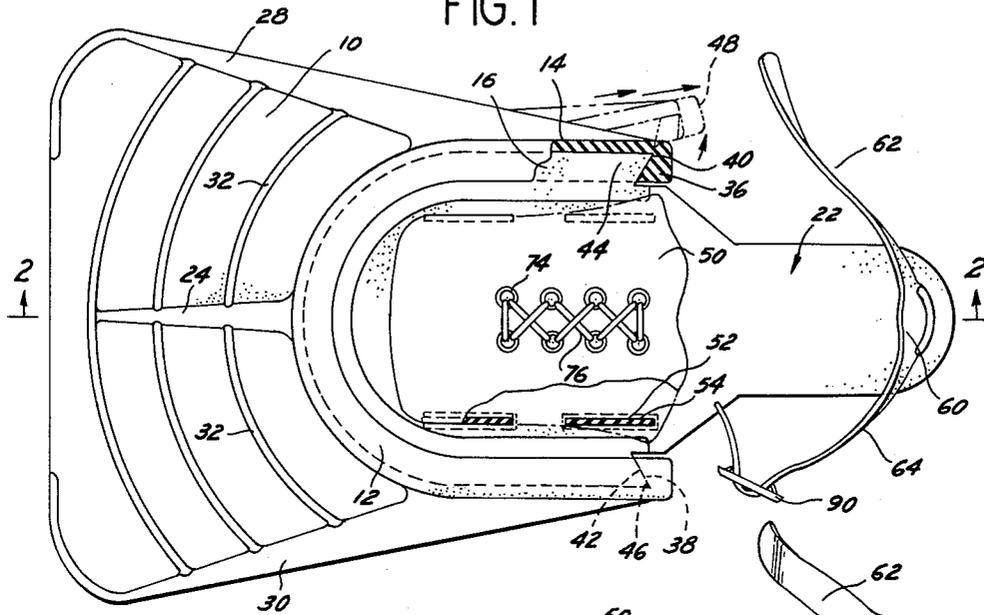


FIG. 2

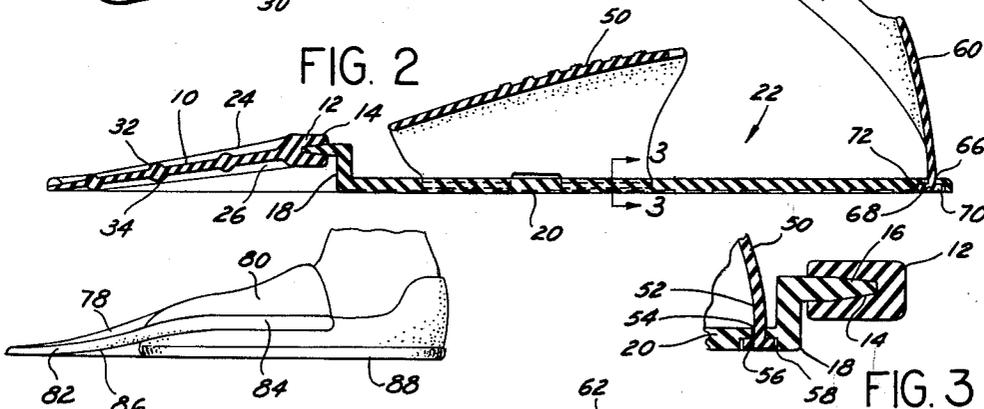


FIG. 5

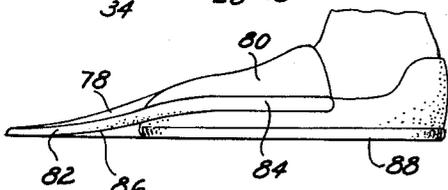


FIG. 3

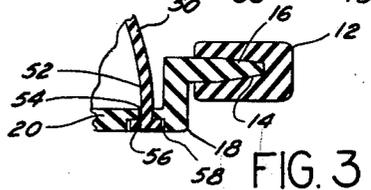
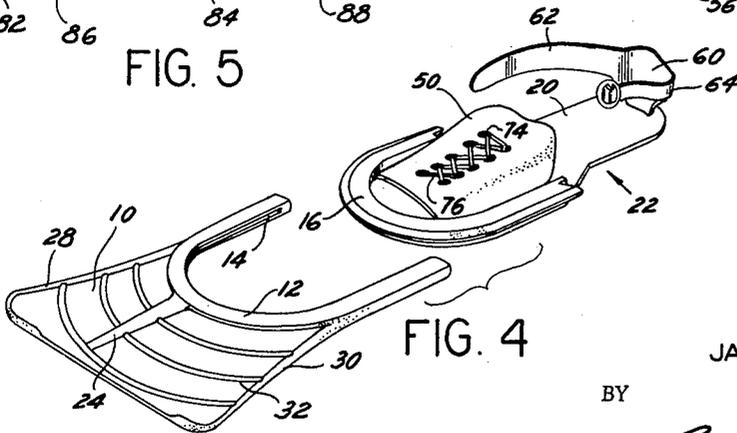


FIG. 4



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CONVERTIBLE SWIM FIN

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4 Claims. (Cl. 9—309)

The present invention relates generally to means for securing removable attachments to footwear; more particularly, the invention relates to a swim fin in the form of a removable attachment which is readily attachable to and removable from a shoe.

Swim fins for providing added propulsion to a swimmer have heretofore been provided in varying designs, in some of which the positions of the fins are adjustable. Such swim fins are integral either with a shoe or a mounting element, and the entire shoe or element is applied to a foot and removed therefrom as a unit. In some situations, particularly when used by skin divers, it is important that swim fins be mounted on and removed from a swimmer's feet in the least possible time. It is desirable that swim fins be readily attachable and removable while the shoes or bases to which they are attached remain on the feet of the swimmer.

The present invention provides means whereby a swim fin is a separate attachment which is readily attachable to and releasable from an article of footwear by means of a tongue-and-groove lock arrangement. The invention is a footwear combination including shoe means from which extends a semi-rigid tongue, and an attachment wherein a groove is defined which is adapted to receive the tongue to provide a tongue-and-groove joint, the tongue and the groove being mutually configured to releasably lock together when assembled. Preferably, the tongue has at least one angular shoulder and the attachment has a complementary angular shoulder for mutual engagement to releasably lock together. It preferably takes the form of a beach shoe from which a tongue extends, and a flexible swim fin with a groove defined therein. The tongue and groove are mutually configured for engagement, the tongue preferably terminating in angular end portions at respective sides of the shoe, and the groove in the swim fin terminating in angular end portions which are complementary to the respective tongue end portions for locking engagement when the tongue is fitted in the groove.

It is therefore an object of the present invention to provide a swim fin wherein the fin is a separate attachment which is readily attachable to and releasable from the foot of a swimmer without removing a shoe or base.

An object of the invention is the provision of a swim fin attachment which is attachable to and removable from a shoe or mounting portion which may remain on the feet of a swimmer to be used as a shoe or sandal.

It is an object of this invention to provide a swim fin arrangement wherein a beach shoe has an extending flange portion which forms a tongue, and wherein a removable swim fin has a tongue-receiving groove, whereby the beach shoe tongue may be received in the fin groove and the fin and shoe may be releasably secured together.

An object of the invention is the provision of a swim fin arrangement according to the foregoing object, wherein means are provided on the tongue and in the groove for releasably locking the tongue and the groove.

An object of the present invention is the provision of a swim fin arrangement according to the foregoing object, wherein the tongue of the shoe is spaced above the bottom of the shoe sole and performs the additional function of providing a buffer or bumper about the front portion of the shoe to protect the foot of the wearer when the fin is not attached.

Other objects, features, and advantages of the present

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invention will become apparent to those versed in the art from a consideration of the following description, the appended claims, and the accompanying drawing, wherein:

FIGURE 1 is a plan view, partially in section, of a combination shoe and swim fin according to the invention, illustrating the attachment of the upper shoe portion to the sole, and illustrating the releasable locking means for securing the swim fin to the shoe;

FIGURE 2 is a sectional view, taken on line 2—2 of FIGURE 1, showing the tongue-and-groove arrangement for providing releasable securement between the swim fin and the shoe;

FIGURE 3 is an enlarged fragmentary sectional view, taken at line 3—3 of FIGURE 2, showing the tongue-and-groove connection between the fin and the shoe, and further showing the connection of the upper shoe portion to the shoe sole;

FIGURE 4 is an exploded perspective view showing a swim fin and shoe means according to the present invention; and

FIGURE 5 is a side elevational view illustrating a modified form of the invention wherein the upper portion of the shoe is molded integrally with the sole.

Referring to the drawing, a preferred embodiment of the present invention is illustrated as including a swim fin wherein a web 10 having a U-shaped boss 12 with a groove 14 defined therein. A semi-rigid tongue 16, preferably fabricated of rubber or similar material, is carried by a flange portion 18 which extends upwardly from the bottom of a sole 20 of a beach shoe 22. The tongue 16 therefore is spaced upwardly from the bottom of the sole 20. The edge of tongue 16 and the groove 14 will be observed to be mutually configured for engagement, whereby the tongue edge may be nested in the groove 14. As shown, the tongue 16 and the groove 14 are complementarily tapered.

The web 10 is reinforced by ribs 24, 26, above and below the web at the center, by ribs 28, 30, at the respective sides of the web, and by arcuate ribs 32, 34, disposed on the upper and lower surfaces of the web and generally transversely thereof.

The groove 14 in the fin terminates in female angular end portions or lugs 36, 38, to form shoulders or inclined inner surfaces 40, 42, respectively. The tongue portion 16 of the shoe terminates in angular end portions or pointed portions 44, 46, the configurations of which are complementary with the configurations of the groove angular portions 36, 38, and which are engageable therewith for releasably locking the fin to the tongue.

The beach shoe includes a band or upper portion 50 which extends upwardly from the sole 20 wherein end portions 52 of the band extend through cooperating slots 54 in the sole and are retained by heads 56 which are positioned in mutually configured recesses 58 in the lower portion of the sole.

A heel guard 60 having integral straps 62, 64, extending from its sides is mounted in a slot 66 at the rear of the sole. The lower end portion of the guard is provided with head portions 68, 70, which are positioned in an appropriate recess 72 in the lower surface of the sole. As shown in FIGURES 1 and 4, the upper surface of the band or upper portion 50 bears simulated eyelets 74 and 76.

FIGURE 5 illustrates a modified embodiment of the invention wherein a swim fin 78 is secured to a beach shoe 80 which is formed with an integral heel portion, upper portion, and sole. The fin reinforcing ribs 82, the fin boss 84 and other features correspond to those of the fin of FIGURES 1 and 2. This form of shoe is adapted for rapid and convenient placement on and removal from the foot of the wearer.

To assemble the swim fin onto the shoe, the tongue

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portion 16 of the shoe is extended into the groove 14 of the fin. The tongue 16 and the boss 12 being formed of resilient semi-rigid material, such as hard rubber or an appropriate plastic, the fin and the tongue are sufficiently deformable that the boss or fin portion defining the groove may be stretched or sprung about the edge of tongue 16 on the shoe, as indicated in phantom outline in FIGURE 1, so that the angular end portions of the tongue may engage the complementary angular portions or shoulders of the swim fin. The complementary angular end portions or lugs 36, 38, of the groove and the complementary angular or pointed end portions 44, 46, of the tongue are thereby engaged to releasably lock or secure the fin and the shoe together. Because of the flexibility of the materials, whereby the fin defining the groove 14 may be stretched or sprung about the shoe tongue portion 16, the fin is readily releasable or removable from the shoe.

When the wearer desires, the fin may be readily and conveniently removed by springing or stretching the fin portion defining the groove about the tongue 16 of the shoe, as indicated in phantom outline in FIGURE 1. The wearer or swimmer may continue to wear the beach shoe or shoe portion. It will be noted that the tongue 16 of the shoe serves as a bumper or buffer in protecting the wearer's foot, as from being stubbed by striking objects.

From the foregoing, those skilled in the art will observe that the invention achieves the object and realizes the advantages hereinbefore mentioned. An extraordinarily effective device is provided. It is relatively simplified and inexpensive to fabricate. A weaver or operator may wear the beach shoe at all times, and may readily and conveniently attach the fin to the shoe when desired. No special skill or services are required for attachment or removal of the fin.

The invention may find application in fields and environments, other than those of the particular embodiment herein described, where it is desirable to secure some form of attachment to an article of footwear. For example, the device of the invention might be utilized for the releasable securement of spurs or other devices to the rear portions of boots. Roller skates or ice skates might be attached to shoes in a comparable manner.

Although a specific embodiment of the present invention has been described and illustrated in detail, it is to be clearly understood that the same is by way of illustration and example only; it is to be understood that the invention is not limited thereto, as many variations will be readily apparent to those versed in the art and the in-

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vention is to be given its broadest possible interpretation within the terms of the appended claims.

The inventor claims:

1. A combination shoe and removable swim fin comprising a fin having rearwardly extending portions to provide a U-shaped opening to fit about a shoe, and a shoe adapted to fit into said U-shaped opening with said rearwardly extending fin portions extending to the mid-portion of the shoe, said fin and shoe having mutually engageable tongue and groove configurations coextensive with the U-shaped opening, one of the configurations being on the fin and the other on the shoe, said tongue and groove having resilient means defining mutually engageable configurations at at least one end of the U-shaped opening, whereby the groove end configuration is stretched or sprung over the tongue end configuration to resiliently and releasably lock the fin on the shoe in such manner that the fin is manually quickly detachable and attachable.

2. A combination shoe and removable fin according to claim 1, wherein the fin has a boss extending along the U-shaped opening and defining said groove, and wherein the tongue is formed on the shoe.

3. A combination shoe and removable fin according to claim 2, wherein the tongue on the shoe is spaced above the sole of the shoe.

4. A combination shoe and removable fin according to claim 1, wherein the end portions of the tongue are configured to define undercut shoulders, and wherein the end portions of the groove are similarly configured to define undercut shoulders engageable with the tongue shoulders, whereby the rearwardly extending portions of the fin can be stretched or sprung to lock the rearwardly extending portions of the fin over the mutually engaging tongue shoulders of the shoe.

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