April 25, 1961 L. WOLSHIN 2,980,926

FIN SHOE

Filed Sept. 5, 1958

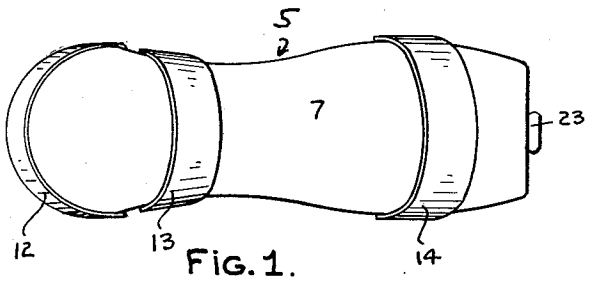

Fig. 1.

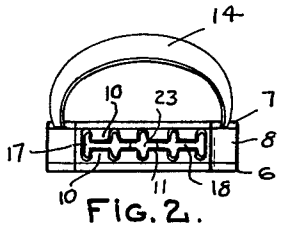

Fig. 2.

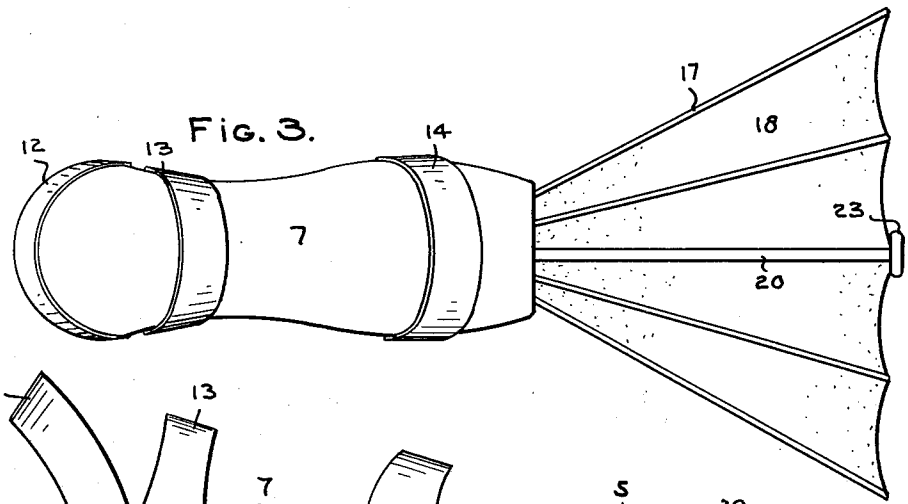

Fig. 3.

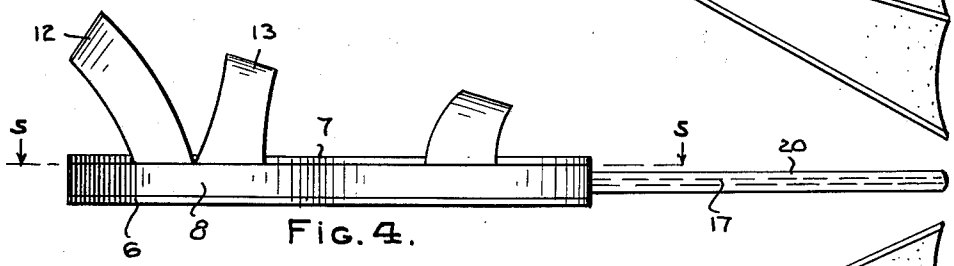

Fig. 4.

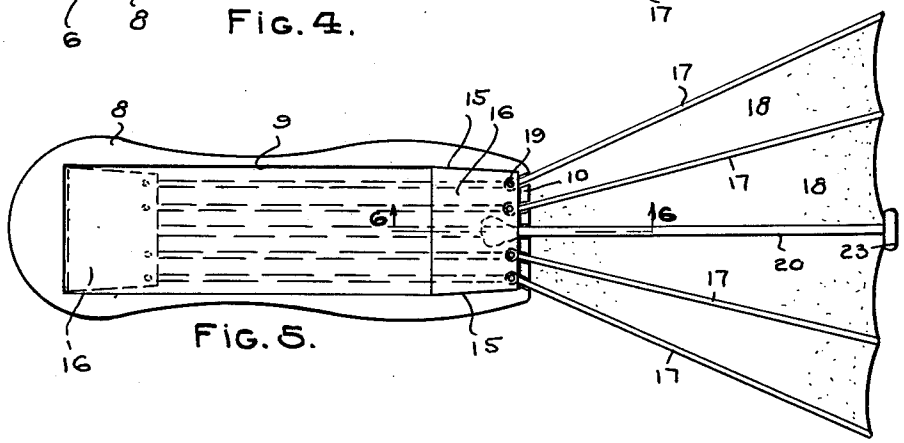

Fig. 5.

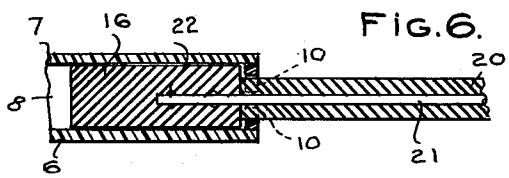

Fig. 6.

INVENTOR.
LOUIS WOLSHIN,
BY James H. Ogden
ATTORNEY

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FIN SHOE

Louis Wolshin, 684 SE. 9th Ave., Hialeah, Fla., assignor of fifty percent to Stanley Axelrod, Miami Beach, Fla.

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4 Claims. (Cl. 9—309)

This invention relates to a swimming appliance that may be referred to as a fin shoe and contemplates a shoe similar to a conventional beach sandal and with the shoe being provided with an extensible fin device through the medium of which a swimmer is able to very effectively propel himself through the water.

The device contemplates an article of footwear having a flat insole and a flat outsole and with the soles being connected together in spaced relation by a filler device that is formed hollow and into which is recessed an expansible fin device that may be manually extended forwardly when the device is to be used as a swimming aid and, when the device is recessed will be disposed entirely within the shoe so as to permit the conventional use of the shoe in walking.

The invention also contemplates a shoe having the above named characteristics and a fin device that is connected with a sliding block within the filler to which the fin is connected and, when the fin is in the extended position, the filler block will have a wedging engagement at the forward end of the opening of the filler thus, holding the fin in extended position against accidental shifting.

The invention further contemplates means carried by the filler and whereby the fin is spread into a fan shape when it is manually extended.

Novel features of construction and operation of the device will be more clearly apparent during the course of the following description, reference being had to the accompanying drawings wherein has been illustrated a preferred form of the device and wherein like characters of reference are employed to denote like parts throughout the several figures.

In the drawings:

Figure 1 is a plan view of a shoe device constructed in accordance with the invention and with a fin device being in a recessed position,

Figure 2 is a front end elevation of the device,

Figure 3 is a view similar to Figure 1 but with the fin in an extended fan shape position,

Figure 4 is a side elevation of the device shown in Figure 3,

Figure 5 is a section taken substantially on line 5—5 of Figure 4 and,

Figure 6 is a slightly enlarged sectional view taken on line 6—6 of Figure 5.

Referring specifically to the drawings, the numeral 5 designates the shoe as a whole embodying an outer sole 6 and an inner sole 7. The soles 6 and 7 are held in spaced apart relation by a filler 8 that is shaped in accordance with the contour of the soles 6 and 7. The filler 8 is provided with a longitudinally extending opening 9. The forward end of the filler 8 is partially closed by a plurality of upper and lower equidistantly spaced teeth 10 and with the upper and lower teeth being spaced from each other to constitute a slot 11. Connected in any desirable manner with the insole 7 is a heel strap 12,

an instep strap 13 and a toe strap 14 that are flexible and yieldable to facilitate the engagement of the device upon the foot of the user. The device, including the soles 6 and 7, the filler 8 and its associated teeth 10 may formed of any desirable material, such as plastic or possibly a rubberized material commonly employed in beach sandals or the like. The filler 8 may also be formed of plastic or relatively stiff rubber or other material capable of permitting a slight flexibility of the article.

The forward inner side walls of the filler 8 are converging, forming a wedging surface 15. Slidable within the opening 9 of the filler 8 is a preferably solid rectangular block 16, formed of hard rubber, plastic or other desirable materials. The block 16 has longitudinal sliding movement within the opening 9 and, when in the forward position, as indicated in Figure 5, the block has a wedging engagement with the surface 15. Connected with the block 16 are a plurality of relatively flexible ribs 17, connected by integral flexible webbing 18. The ribs 17 impart a substantial rigidity to the webbing against undue vertical flexing. Each of the ribs 17 are preferably pivotally connected with the block 16, as at 19 and whereby the ribs and the webbing may be extended laterally into a fan shape when the block is moved to its point of wedging engagement with the walls 15. A central stiffening rib 20 is preferably reenforced by a metallic rod 21 and the rod 21 is preferably permanently molded into the block 16, as shown at 22. As shown in Figure 2, the ribs 17 extend above and below the web 18. The ribs engage within the spaces between the teeth 10, while the web slides through the slot 11. The rib 20 likewise extends above and below the web 18 and engages between adjacent teeth thus forming a definite guide for the several ribs to and from a recessed position. The side walls of the teeth 10 are laterally beveled to provide cam surfaces against which the several ribs 17 engage and that serve to direct the ribs 17 laterally when extended to thereby extend the webbing 18. The ribs 17 obviously must move together when the device is to be recessed and the pivots 19 permit of such shifting movement as the fin is recessed into the shoe. It will of course be understood that the slot 11 is proportioned to permit the webbing 18 to slide therethrough when bunched together when the ribs 17 are progressively shifted together under the camming action of the teeth when the device is recessed into the shoe. The fin 20 at its forward end is provided with a knob or lug 23 that remains outside of the teeth 10 to provide a finger grip that functions to manually pull the device outwardly or to shift the device to recessed position with respect to the shoe. The rib 20 may be formed integral with the block 16 as found desirable and the webbing 18 may likewise be connected to the block, with the ribs 17 having the pivotal engagement with the block in order to shift laterally when forming the fin.

In the use of the device, the sandal or shoe 5 may be engaged with the feet of the operator or swimmer and function in a normal manner for walking. When the device is to be employed as a swimming aid, the operator grasps the knob 23, pulling it forwardly and shifting all of the ribs 17, the webbing 18 and the blocks 16 forwardly to the point where the block wedges against the converging walls 15 of the filler 8 in which position the ribs 17 have shifted outwardly to extend the webbing to a generally fan shape and the device is now ready to function as a means to greatly increase the propulsion of the swimmer in the water. When the device has functioned as a swimming aid and, when the swimmer leaves the water, he grasps the knob 23 and forces the entire assembly of the fin and the block 16 inwardly to the

dotted line position shown in Figure 5. The block 16 in its inner position may also have a wedging engagement at the inner end of the opening 9, if so desired.

It will therefore be apparent that a very novel type of swimming aid has been provided. The structure forms the dual function of a shoe and also as a swimming aid. The device is particularly useful by lifeguards that normally patrol a beach area and must obviously walk about in such service. However, when a person is in distress in the water, it is necessary that the lifeguard reach the victim as quickly as possible and, with the device of this invention, he approaches the water and then with a minimum of effort extends the fin device, greatly increasing his speed in swimming to the point of rescue. The structure is simple, is strong, durable, cheap to manufacture and highly effective as a combined shoe and a swimming aid.

It is to be understood that the invention is not limited to the precise construction shown, but that changes are contemplated as readily fall within the spirit of the invention as shall be determined by the scope of the subjoined claims.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A swimming aid of the character described that is in the form of footwear of the sandal type, the sandal having a flat insole and a flat parallel outsole, the soles being spaced apart by a filler, the filler being recessed for its major length and with the recess opening through the toe portion of the sandal, a block slidable in the recess, wedging means carried by the filler which limit a forward sliding movement of the block, a relatively flexible fin device that is connected to the block and movable therewith, the fin device being movable forwardly through the toe opening of the sandal to be laterally extended to a fan-shape, cam means formed in the toe opening to force the fin to the fan-shape as it is shifted outwardly and means to reinforce the fin.

2. The device according to claim 1, wherein the block is wedge shaped and wherein the wedging means includes the forward side walls of the recess which are converging to effect a wedging engagement of the block and to prevent accidental rearward shifting of the block when the fin centrally thereof is extended.

3. The device according to claim 1, wherein the opening through the toe portion of the sandal is provided with said cam means which includes a plurality of equidistantly spaced teeth, said reinforcing means including reinforcing ribs formed upon the fin, with the ribs being shiftably connected to the block, the ribs projecting above and below a web portion of the fin and with the ribs engaging the side walls of the teeth and guided thereby to and from a recessed position, the side walls of the teeth being bevelled to shift the ribs laterally for extending the web to the fan shape.

4. The structure according to claim 1, wherein said reinforcing means includes an intermediate rib that is connected to the block, the last named rib being provided with a reinforcing rod that is anchored into the block, the last named rib at its forward end being provided with a knob whereby to manually move the block and the fin to and from an extended position, the said sandal being provided with attaching straps that support the device upon the foot of the wearer.

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