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W. T. HUDSON

1,983,609

SWIMMING SHOE

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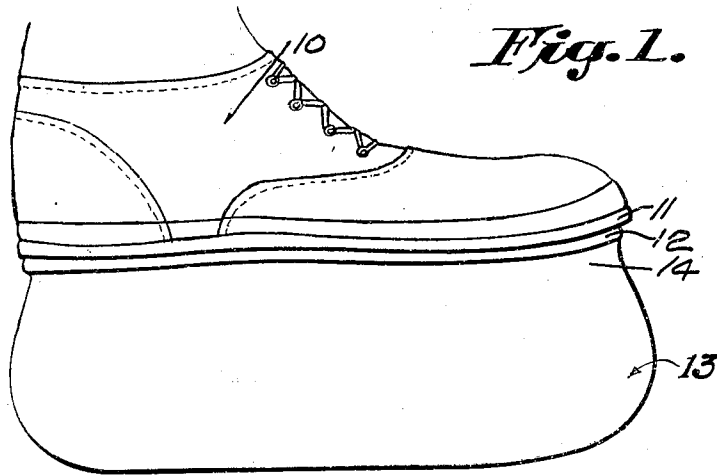


Fig. 2.

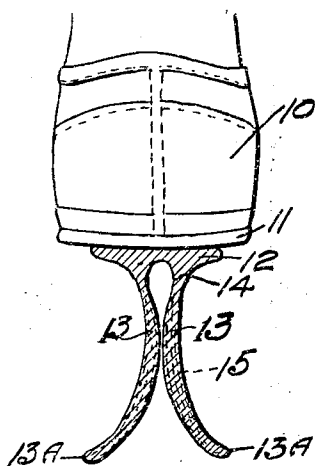
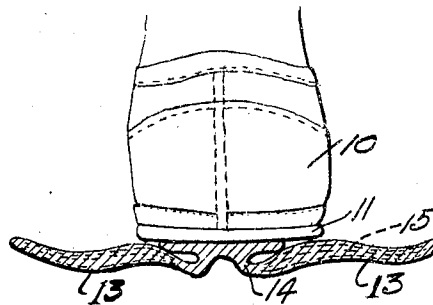


Fig. 3.



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SWIMMING SHOE

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4 Claims. (Cl. 9—21)

This invention relates to improvements in swimming shoes and more particularly to a device which can be attached to the sole of a shoe or sandal and which will open out on the backward thrust of the foot in the water and thereby provide increased propulsive action. It further relates to hinged or movable wings which are attached to the sole of a shoe or the like and preferably to wings of this sort which are sufficiently stiff to resist the thrust but which are sufficiently flexible and are so attached to the sole that they will be sufficiently displaceable as to permit limited use of the shoe on the land.

The objects of the invention are:

To provide wings, by means of which resistance of the foot of a person in its rearward motion through the water will be largely increased, and propulsion thereby be greatly increased, but forward movement of the foot will be unretarded;

To provide wings so shaped as to accelerate their spreading apart to propulsive position on backward movement of the foot in water;

To provide wings and means for attaching them to the sole of a shoe whereby they will be displaceable and permit walking on land; and

To provide a self contained device of the character described adapted for attachment to the sole of a shoe.

The means by which the foregoing and other objects are accomplished and the manner of their accomplishment will readily be understood from the following specification by reference to the accompanying drawing, in which:

Fig. 1 is a side elevation of a shoe with the device attached thereto, the wings being in closed or dormant position;

Fig. 2 is the rear elevation of the shoe with the device, shown in transverse section, applied thereto, the wings being in closed or dormant position; and

Fig. 3 is a similar rear elevation of the shoe and device with the wings in open or propulsive position.

Referring now to the drawing in which the various parts are indicated by numerals, 10 is a shoe having a sole 11 to which the device is secured in any usual or desired manner.

In its preferred form the device is an integral structure of rubber or other resilient material which is preferably of substantially equal length with the sole of the shoe. The device comprises a base portion 12 and a pair of wings 13 each attached to the base by an integral hinge section 14. The wings are preferably reinforced outside these hinge sections with reinforcing material

15 such as canvas or the like, which stiffens such portions of the wings. In transverse section the wings are preferably arcuate and are disposed with their convex surfaces facing. Preferably where they are joined to the base they are slightly spaced apart. From this point they converge together until their back portions substantially touch and thence diverge so that their outer edges 13A are spaced apart.

In use, the wings are in closed position, as shown in Fig. 2, as the foot is drawn forward in the water. On the backward or propulsive stroke, water entering between the diverging edges 13A, spreads the wings apart substantially to the position as shown in Fig. 3. As the wings swing apart, the unreinforced portions 14 serve as hinges, the wings moving until they strike the sole 11, which forms an abutment to hold them in outspread position, and to allow them to function. On forward movement of the foot, the hinge resilience restores the wings to closed position.

In walking, the resilience of the wings themselves, though limited, and their hinge connections to the base, permit the wings to spread, usually in similar manner to that accomplished in swimming and makes possible the use of shoes so equipped, for such purpose.

Having described my invention, what I claim is:

1. In a swimming device for attachment to a shoe or the like, a base portion and a pair of integral wings of resilient material, said base and wings being of elongated form and adapted to be secured to the sole of the shoe, said wings being spaced apart at said base, and laterally extending therefrom, said wings converging together intermediate their width, and therefrom diverging arcuately apart to their outer edges, the major portion of said wings away from said base being stiffened by reinforcement.

2. In a swimming device for attachment to a shoe or the like, a base portion and a pair of integral wings of rubber, said base and wings being of elongated form and adapted to be secured to the sole of the shoe, said wings being spaced apart at said base and laterally extending therefrom, said wings converging together intermediate their width and therefrom diverging arcuately apart to their outer edges, the major portion of said wings away from said base being stiffened by reinforcement.

3. In a swimming device for attachment to a shoe or the like, a base portion and a pair of integral wings of resilient material, said base and wings being of elongated form and adapted to

be secured to the sole of the shoe, said wings laterally extending from said base and diverging arcuately apart to their outer edges, the major portion of said wings away from said base being stiffened by reinforcement.

5 4. A swimming shoe, comprising an upper portion adapted to be secured to the human foot, and a sole, a pair of resilient wings, arcuate in cross

section, disposed therebelow in longitudinal alignment therewith and hinge means securing said wings to said sole, said hinge means including means for urging said wings into positions substantially at right angles to said sole, with their convex surfaces substantially abutting intermediate their width and their outer edges spaced apart.

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