No. 719,583. PATENTED FEB. 3, 1903.

P. J. GRIFFIN.

FOOT GEAR FOR USE IN SWIMMING.

APPLICATION FILED APR. 11, 1901.

NO MODEL. 2 SHEETS—SHEET 1.

FIG. 1.

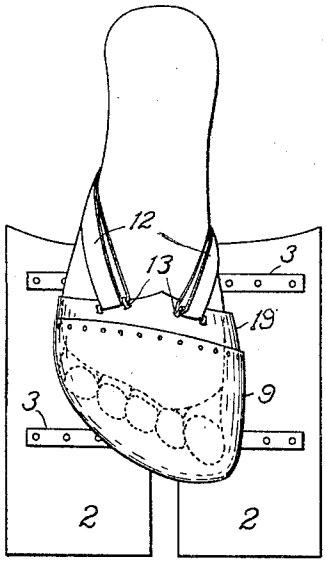


FIG. 2.

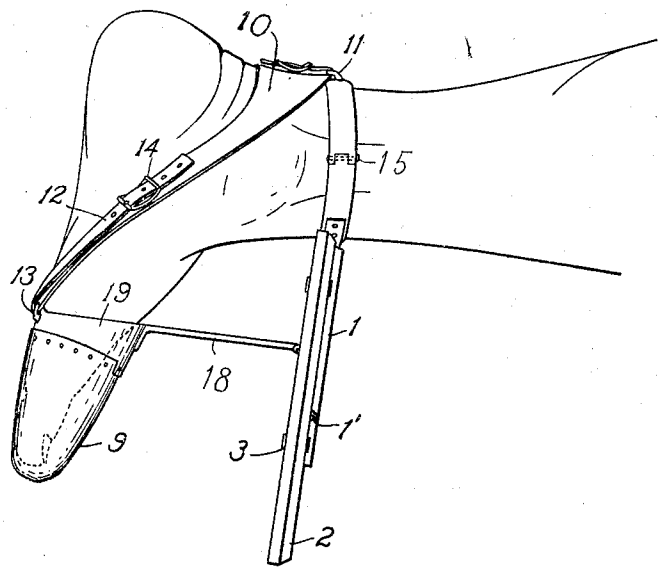
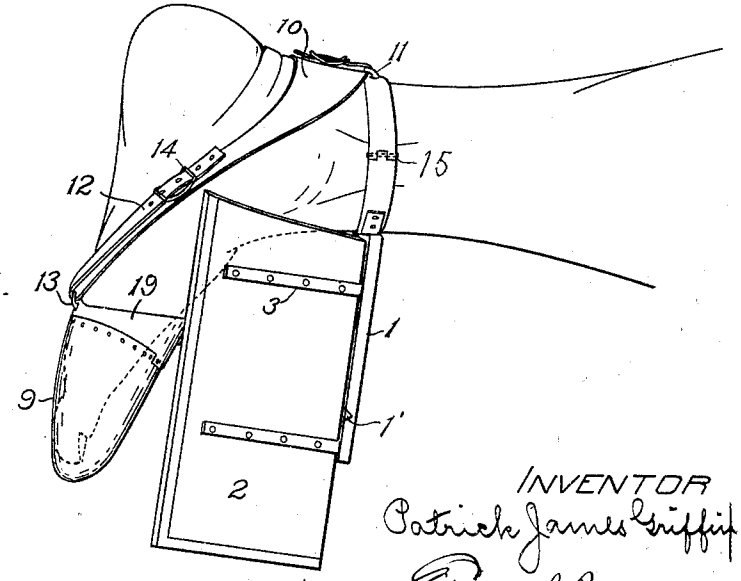


FIG. 3.



WITNESSES

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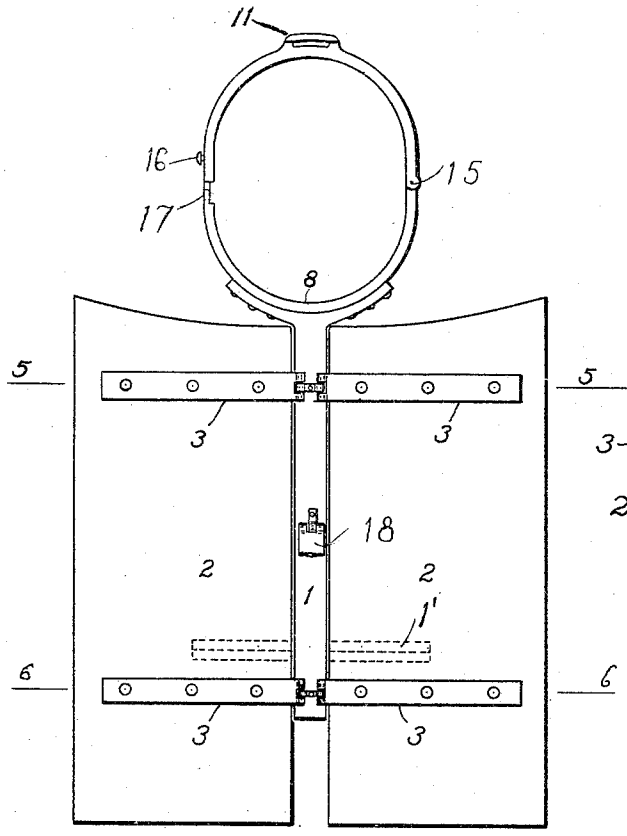


FIG. 4.

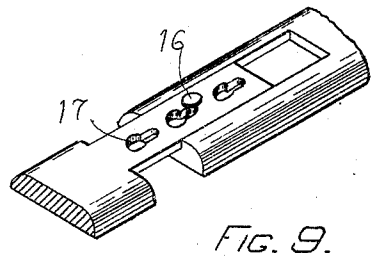


FIG. 9.

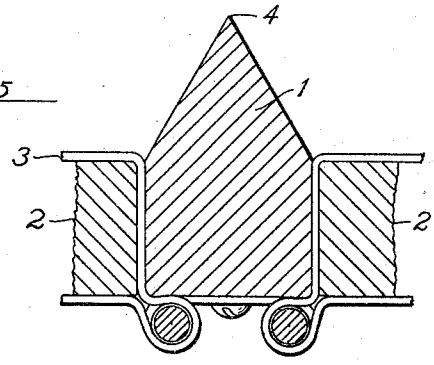


FIG. 6.

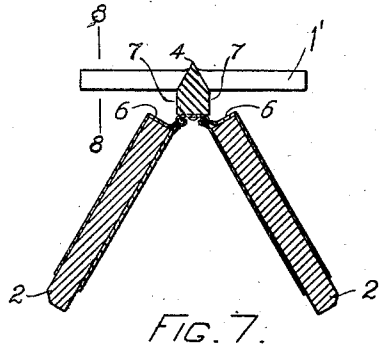


FIG. 7.

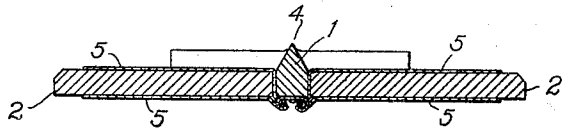


FIG. 5.

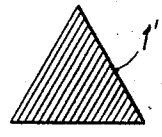


FIG. 8.

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UNITED STATES PATENT OFFICE.

PATRICK JAMES GRIFFIN, OF DORCHESTER, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO ADOLPH ROSENTHAL, OF BOSTON, MASSACHUSETTS.

FOOT-GEAR FOR USE IN SWIMMING.

SPECIFICATION forming part of Letters Patent No. 719,583, dated February 3, 1903.

Application filed April 11, 1901. Serial No. 55,321. (No model.)

To all whom it may concern:

Be it known that I, PATRICK JAMES GRIFFIN, a citizen of the United States, residing at Dorchester, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Foot-Gear for Use in Swimming, of which the following is a specification, reference being had therein to the accompanying drawings.

Figure 1 is a rear elevation of my foot-gear for use in swimming and in place on the user's foot and ankle, the hinged wings of the foot-gear being in line one with the other and ready to be pushed back by the leg action of the user, so as to increase the rapidity of his forward movement in the water. Fig. 2 is an edge view of the foot-gear when in the position shown in Fig. 1 and shows a means of attaching the foot-gear to the user's foot and ankle. Fig. 3 shows the foot-gear in place as in Fig. 2, with its wings swung toward the sole of the user's foot as he draws his leg forward in swimming. Fig. 4 is a rear elevation of the foot-gear, showing the wings extended, the anklet-holding straps and toe-socket being removed for greater clearness. Fig. 5 is a sectional detail on line 5 5 of Fig. 4. Fig. 6 is an enlarged sectional detail at line 6 6 of Fig. 4, showing the preferred mode of hinging the wings to the intermediate beam, engagement of which with the hinge edges of the wings holds the wings in alinement when the leg is pushed back to impel the swimmer forward. Fig. 7 is a top edge view of the foot-gear with the wings swung back, the anklet and holding straps being removed for greater clearness. Fig. 8 is an enlarged section of cross-bar integral with beam on line 8 8 of Fig. 7, and Fig. 9 is an enlarged detail of the locking device of anklet.

The principal object of my invention is to provide foot-gear for use in swimming, whereby the physical exertion usually required is greatly reduced, the speed very much increased, and buoyancy insured to the human body in an upright position in the water.

A further object is to embody my invention in a construction which is simple, durable, and cheap.

In the drawings illustrating the principle of my invention and the best mode now known to me of applying that principle, 1 is a beam on which the wings 2 2 are each hinged by any suitable hinges 3. The foot-gear is to be attached to the ankle and ball of the foot by any suitable holding devices, and in use it projects downwardly from the ankle above the foot if the wearer be considered as swimming on his stomach. The front side of beam 1 is preferably wedge-shaped in cross-section, as at 4, in order that it may present minimum resistance to the water when the foot-gear is pulled forward by the drawing forward of the swimmer's feet previous to the back push thereof. Hinges 3 are located at the rear of beam 1 and comprise the parallel straps 5 5, between which the wings are confined, thus giving increased strength to the wings. The hinge edges 6 of the wings contact with the adjacent sides 7 of the intermediate beam 1 when the foot-gear is pushed back against the water in the swimming movement, thus giving for each foot a rigid water-engaging surface comprising the outer or rear surfaces of both wings and the intermediate beam. To give additional strength to the wings and partially relieve the strain on the hinges, the beam has a cross-bar 1′ integral therewith and against which the wings bear when forced open. The cross-bar, like the beam, is wedge-shaped in cross-section. The hinges are so located that when the foot-gear is pulled forward by the swimmer the resistance of the water will push the wings rearwardly and allow the foot-gear to be drawn through the water toward the body of the swimmer without undue resistance.

In practice all the foot-gear except the wings is preferably made of aluminium, the wings, however, being of wood. The wings and beam of each foot-gear are considerably larger in surface area than the sole of (ordinary) human feet, so that the swimmer is provided with artificial water-pushing surfaces having areas much increased over the area of sole of the foot.

My new devices are made in pairs of various sizes. They may be attached to the feet and ankles by any suitable holding devices. The best form of holding devices now known to me comprises an anklet 8, rigidly secured to the upper end of the beam, and a toe-socket

9, which is connected with both said beams by a strut 18 and with the anklet by any suitable means—such, for example, as the strap 10, which is fastened to the eye 11 on the back of the anklet 8 and passes from the rear side of the leg, which is above the heel in two branches 12 12, to the foot side of the toe-socket 9, where the branches are reeved through the ears 13 13 and return to the ankle-buckles 14 14. The anklet 8, which is preferably of aluminium, is made up of two pieces that are hinged at 15 and may be locked together about the ankle of the swimmer by any suitable fastening device, as by the engagement of a headed pin 16, fast in one of said pieces, and any one of a number of eyes 17 in the other. A strut 18 is pivotally secured to the beam 1 and rigidly secured to an upper metallic (preferably aluminium) portion 19 of the toe-socket 9, said portion 19 having attached thereto a leather socket surrounding the toes of the foot. This strut 18 insures a practically fixed position for the beam 1 relatively to the foot of the swimmer and holds the wings in the same plane when the foot-gear is pushed backwardly in the water.

It will be plain to all mechanics that my invention can be embodied in many different forms without departing from the spirit thereof, and I wish to claim my invention in the broadest manner legally possible.

What I claim is—

1. A foot-gear for use in swimming, comprising, in combination, a pair of movable wings; an intermediate support therefor on which the wings are hinged, said support being wedge-shaped in cross-section; means for securing the foot-gear to the leg and above the foot; and means for holding the wings in the same plane when the foot-gear is pushed backwardly in the water; said wings moving toward each other when the foot-gear is pulled forwardly in the water.

2. In a foot-gear for use in swimming, comprising, in combination, a pair of movable wings, an intermediate support therefor on which the wings are hinged; an anklet made up of two hinged pieces, one of which is fast to the intermediate support; means for locking and unlocking said hinged pieces forming the anklet; and means for holding the wings in the same plane when the foot-gear is pushed backwardly in the water; said wings moving toward each other when the foot-gear is pulled forwardly in the water.

3. In a foot-gear for use in swimming, comprising, in combination, a pair of movable wings; an intermediate support therefor, on which the wings are hinged; means for securing the foot-gear to the leg; a toe-socket; a strap connecting the toe-socket and said means to secure the foot-gear to the leg; and a strut secured to said toe-socket and said intermediate support whereby said wings are held in the same plane when the foot-gear is pushed backwardly in the water; said wings moving toward each other when the foot-gear is pulled forwardly in the water.

4. In a foot-gear for use in swimming, comprising, in combination, a pair of movable wings; an intermediate support therefor on which the wings are hinged, said support being wedge-shaped in cross-section; and the hinges for said wings having parallel straps between which are confined said wings; means for securing the foot-gear to the leg; and means for holding the wings in the same plane when the foot-gear is pushed backwardly in the water, said wings moving toward each other when the foot-gear is pulled forwardly in the water.

5. A swimming attachment comprising a rib, wings hinged to the rib, means to limit the outward movement of the wings, and means to support the rib and wings over the foot, and in front of the leg.

In testimony whereof I affix my signature in presence of two witnesses.

PATRICK JAMES GRIFFIN.

Witnesses:

CHARLES F. RICHARDSON,

E. A. ALLEN.