E. C. HOWARD.

SWIMMING DEVICE.

APPLICATION FILED DEC. 26, 1918.

1,298,344.

Patented Mar. 25, 1919.

2 SHEETS—SHEET 1.

Fig. 3.

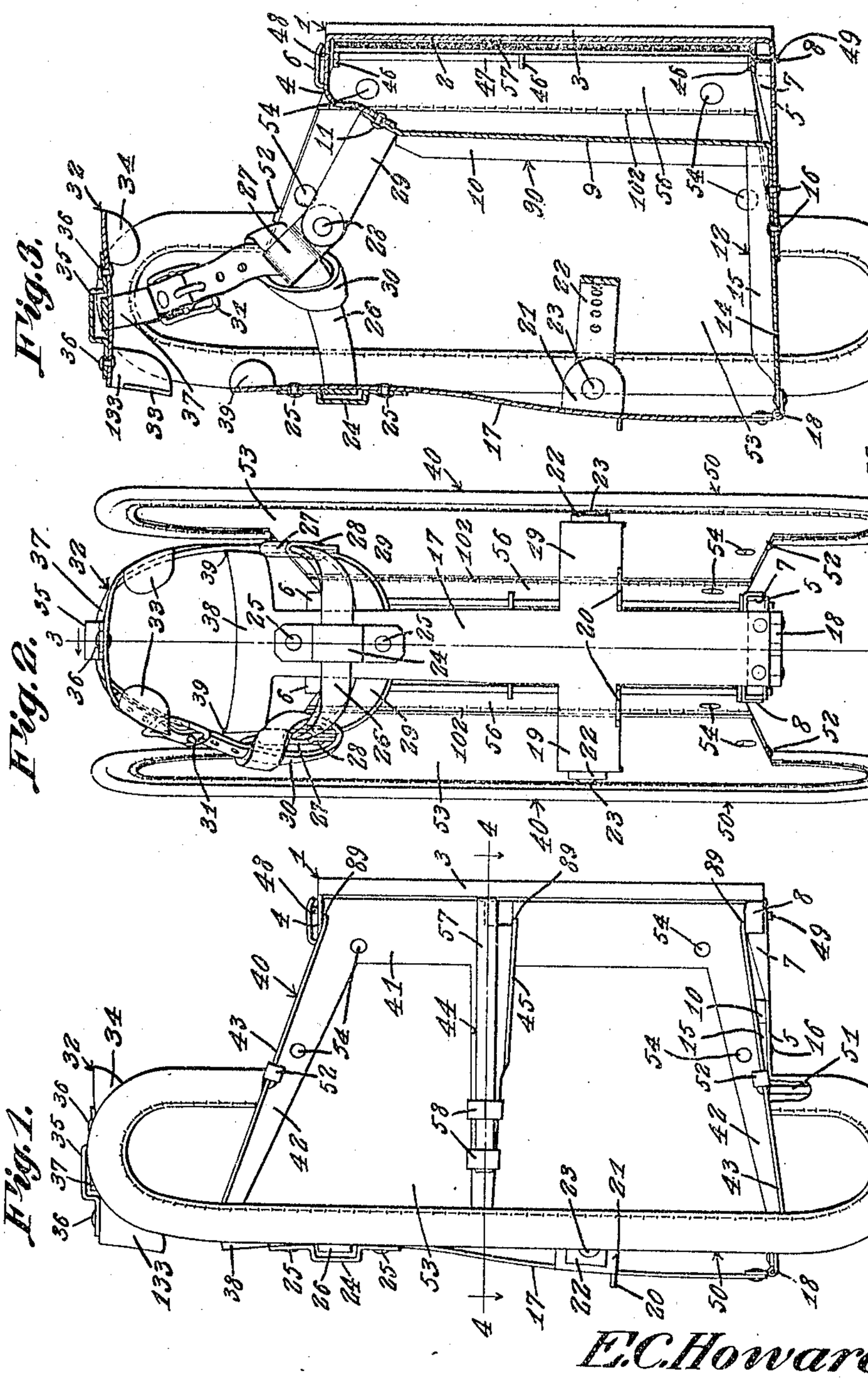

Fig. 2.

Fig. 1.

Witness

J. R. Lamey

E. C. Howard, Inventor

By Cachow & Co.

Attorneys

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2 SHEETS—SHEET 2.

Fig. 4.

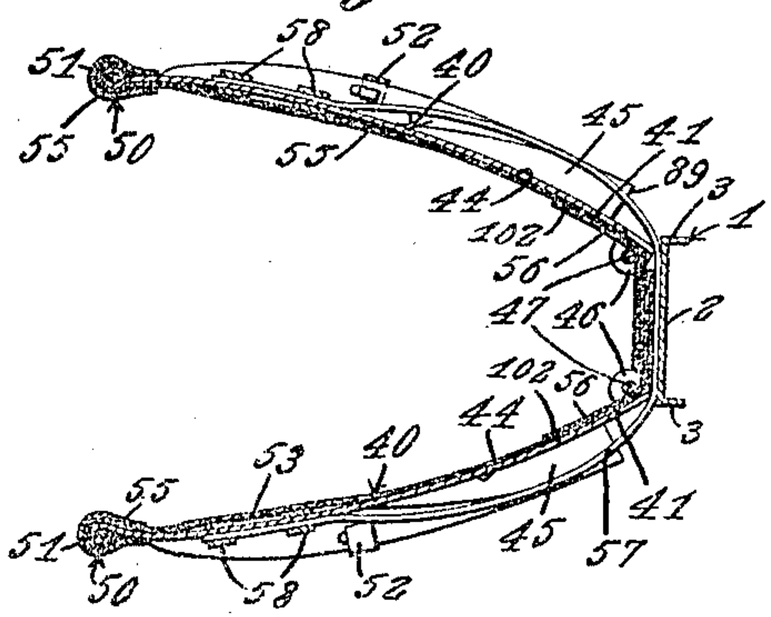


Fig. 5.

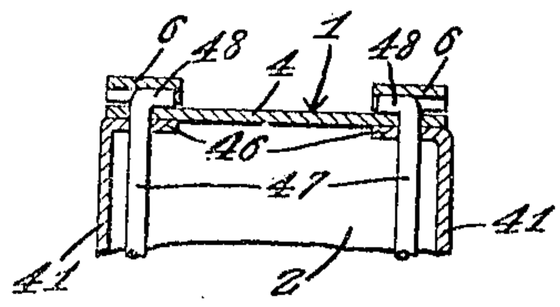
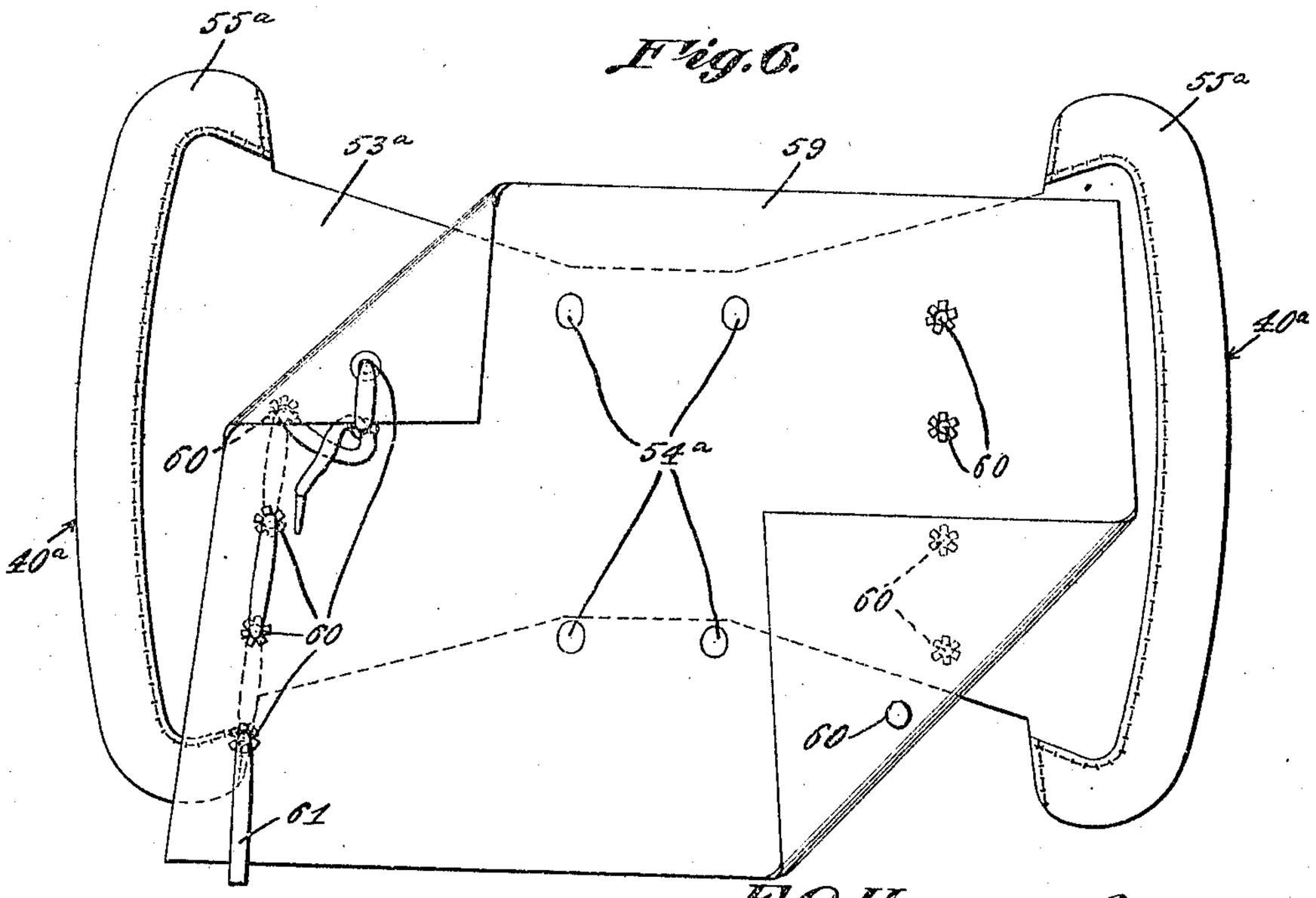


Fig. 6.



Witness

J. R. Lonergan

E. C. Howard, Inventor

By Cushman & Co.

Attorneys

UNITED STATES PATENT OFFICE.

ELDON C. HOWARD, OF THE PLAINS, OHIO.

SWIMMING DEVICE.

1,298,344. Specification of Letters Patent. **Patented Mar. 25, 1919.**

Application filed December 26, 1918. Serial No. 268,246.

To all whom it may concern:

Be it known that I, ELDON C. HOWARD, a citizen of the United States, residing at The Plains, in the county of Athens and State of Ohio, have invented a new and useful Swimming Device, of which the following is a specification.

The device forming the subject matter of this application is adapted to be applied to the hands or feet for the purpose of aiding a person in swimming.

The invention aims to provide a structure of the sort mentioned including foldable wings, novel means being provided for operating the wings. The invention aims, further, to provide novel means for attaching the structure to the hand or the foot.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the invention appertains.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that, within the scope of what is claimed, changes in the precise embodiment of the invention shown can be made without departing from the spirit of the invention.

In the drawings:—

Figure 1 shows in side elevation, a device constructed in accordance with the invention; Fig. 2 is a top plan; Fig. 3 is a section on the line 3—3 of Fig. 2; Fig. 4 is a cross section on the line 4—4 of Fig. 1; Fig. 5 is a fragmental section showing the way in which retaining rods for the wings are mounted; and Fig. 6 is a plan showing a modification.

Referring to Figs. 1 to 5 both inclusive, there is provided a main bar 1 which may be a channel, including a base 2 and flanges 3. The base 2 is prolonged to form end members 4 and 5, the end member 4 overhanging the base 2, and the end member 5 being disposed approximately at right angles to the base, as shown in Fig. 3. The end member 4 is provided with back-bent tongues 6 and there are reinforcing flanges 7 along the edges of the end member 5. A U-shaped bearing strip 8 extends transversely of the bar 1 and the ends of the strip are attached to the flanges 7 of the end member 5.

The numeral 90 denotes an auxiliary bar disposed parallel to the main bar 7 and, preferably, in the form of a channel including a base 9 and flanges 10. A securing element 11 unites one end of the base 9 of the auxiliary bar 90 with the inner end of the member 4 of the main bar 1. The auxiliary bar 90 has a rectangular extension 12, in the form of a channel, including a base 14 and flanges 15, the base of the member 12 being secured to the end of the part 5 of the bar 1 by means of attaching elements 16.

The numeral 17 designates a tread strip located in the same plane with the bars 1 and 90, the tread strip being attached at one end by means of a hinge 18 to the end of the base 14 of the extension 12. The tread strip 17 is supplied with oppositely extended lateral arms 19 terminating in angularly disposed fingers 21 to which straps 22 are attached as shown at 23. The free ends of the straps 22 are adapted to be connected by a buckle (not shown). An eye 24 is secured to the tread strip 17 near to the free end thereof, as indicated at 25, and through the eye, a strap 26 extends, the strap coöperating with bails 27 pivoted at 28 to a U-shaped heel support 29 held by the securing element 11, hereinbefore mentioned, to the end of the part 4. Preferably, the heel support 29 is formed integrally with the base 9 of the auxiliary bar 90. The strap 26 is knotted at 30 in one of the bails 27, the ends of the strap being connected by a buckle 31. The numeral 32 designates a heel member provided adjacent its bottom with flanges 133, from which tread pieces 33 project inwardly. Adjacent its upper end, the heel member 32 is supplied with flanges 34. It will be observed that the strap 26 is formed into a rearwardly projecting loop 37, and this loop is engaged through an eye 35 secured at 36 to the heel member 32 intermediate the ends thereof. The tread strip 17 terminates at its rear end in a cross piece 38 having side flanges 39.

In view of the fact that the attaching means whereby the structure is held on the foot, has been described in considerable detail, the way in which the device is held on the foot will now be set forth and in this connection it is to be understood that the foot of the wearer rests on the tread strip 17, the toe being disposed toward the member 12. The ball of the foot rests on the arms 19 between the fingers 21 and is re-

tained by the strap 22. The bottom of the heel rests on the cross piece 38 between the flanges 39. The loop 37 of the strap 26 extends across the back of the heel and holds the heel member 32 on the heel, the heel being located between the flanges 133, and between the flanges 34, and resting on the tread pieces 33.

The device forming the subject matter of this application includes a pair of wings 40, pivoted to the main bar 1, the wings being adapted to close toward each other, as the foot of the wearer is drawn forwardly, and being adapted to open, as the foot of the wearer is thrust rearwardly, the function and the utility of such a construction being clear.

Each wing 40 includes a frame embodying a base strip 41 having end arms 42 supplied with reinforcing flanges 43 and an intermediate arm 45 having a reinforcing flange 44. The base strip 41 has eyes 46 through which hinge rods 47 extend. Each hinge rod 47, at one end, extends through the end member 4 of the main bar 1 and is bent over or butt-ended on the member 4, as shown clearly at 48 in Fig. 5. The tongues 6 on the end member 4 engage the extremities of the hinge rods 47, and it will be understood readily from the drawing that, owing to the construction alluded to, the hinge rods cannot move endwise out of their mountings. The opposite ends of the hinge rods extend, as indicated at 49 through the end member 5 of the bar 1 and through the U-shaped bearing 8 which is assembled with the flanges 7 of the member 5. Wire frames of loop-shape denoted by the numeral 50, are connected with the outer ends of the arms 42 and 44, the ends 51 of the frames 50 extending through the flanges 43 of the end arms 42 and being bent to engage the same, said ends of the frames being held on the flanges 43 by means of clips 52. Fabric walls 53 are connected by securing devices 54 to the base strips 41 and to the arms 42. Binding strips 55 connect the walls 53 with the wire frames 50 so as to form extensions projecting beyond the arms 43, a construction which will be understood readily when Fig. 1 is examined. Flexible tongues 56 are attached at 102 to the inner edges of the walls 53 and are held, additionally, by those securing devices 54 which are located in the base strips 51, the inner edges of the tongues 56 being overlapped on the main bar 1, as will be understood clearly from Fig. 4. A spring strip 57 of arched form extends between the base strips 41 of the wings on the one hand, and the main bar 1 on the other hand, the ends of the spring strip bearing on the intermediate arm 4 and being secured thereto by means of clips 58.

The manner of attaching the device to the foot of the wearer has been discussed hereinbefore, and it will be understood that, when the foot is drawn forwardly through the water, the wings 40 will close together, being assisted in their movement by the action of the spring strip 57. When, however, the foot of the swimmer is thrust backwardly, the wings 40 will open, and give an increased hold on the water, the wings opening until the ends 89 of the flanges 43 and 44 abut against the flanges 3 of the main bar 1.

In Fig. 6 of the drawings, wherein a modified form of the invention is shown, the structure is adapted to be used on the wrist, instead of on the foot. The device shown in Fig. 6 is made up like the structure hereinbefore described, and, therefore, parts hereinbefore discussed have been designated by numerals previously used with the suffix "*a*". In Fig. 6, a wristlet 59 is held in place by certain of the securing devices 54ª, the wristlet having eyes 60 adapted to receive a lacing cord 61, whereby the part 69 may be held in place around the wrist of the wearer.

The bars 1 and 90, together with attendant parts may be described as a loop-shaped frame or base member comprising inner and outer parts, the outer part being represented by the bar 1, and the inner part being represented by the bar 90.

Having thus described the invention, what is claimed is:—

1. A device of the class described comprising a base bar; oppositely disposed wings pivoted to the base bar; and spring means coacting with the wings to swing the wings normally toward each other.

2. In a device of the class described, a main bar; a pair of oppositely disposed wings pivoted to the main bar; and an arched spring strip extended between the inner edges of the wings and the main bar, the spring strip coacting at its ends with the wings, to swing the wings toward each other.

3. In a device of the class described, a main bar including end members; pivot rods mounted in the end members and having their ends distorted to engage one of the end members, the said end member having tongues overlapped upon the distorted ends of the pivot rods; and wings mounted to swing on the pivot rods.

4. In a device of the class described, a base; a tread hinged at one end to the base; a heel support on the base; and a loop-shaped heel strap engaged with the tread and with the heel support; and side wings pivoted to the base.

5. In a device of the class described; a U-shaped heel support assembled with the base; a tread hinged at one end to the base; a heel member; and a strap of loop form engaged with the tread, with the heel mem-

ber and with the side portions of the heel support.

6. In a device of the class described, a base in the form of a loop-shaped frame comprising inner and outer members of channel form, having oppositely projecting flanges; wings pivoted to the outer of said members; and means assembled with the inner of said members for connecting the device to the limb of the wearer.

7. In a device of the class described, a main bar; frames pivoted to the main bar and provided with terminal arms and with intermediate arms; loop-shaped members projecting terminally beyond the frames and assembled with the arms; walls connected with the frames and with the loop-shaped members; and a U-shaped spring strip disposed between the frames and the main bar, the ends of the strip bearing on the intermediate arms, to swing the frames toward each other.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ELDON C. HOWARD.

Witnesses:
JOHN HAMK,
W. E. PETERS.