

(No Model.)

R. P. CAFFERTY, Jr. & W. N. CAFFERTY.
SWIMMING ATTACHMENT.

No. 476,000.

Patented May 31, 1892.

Fig. 1,

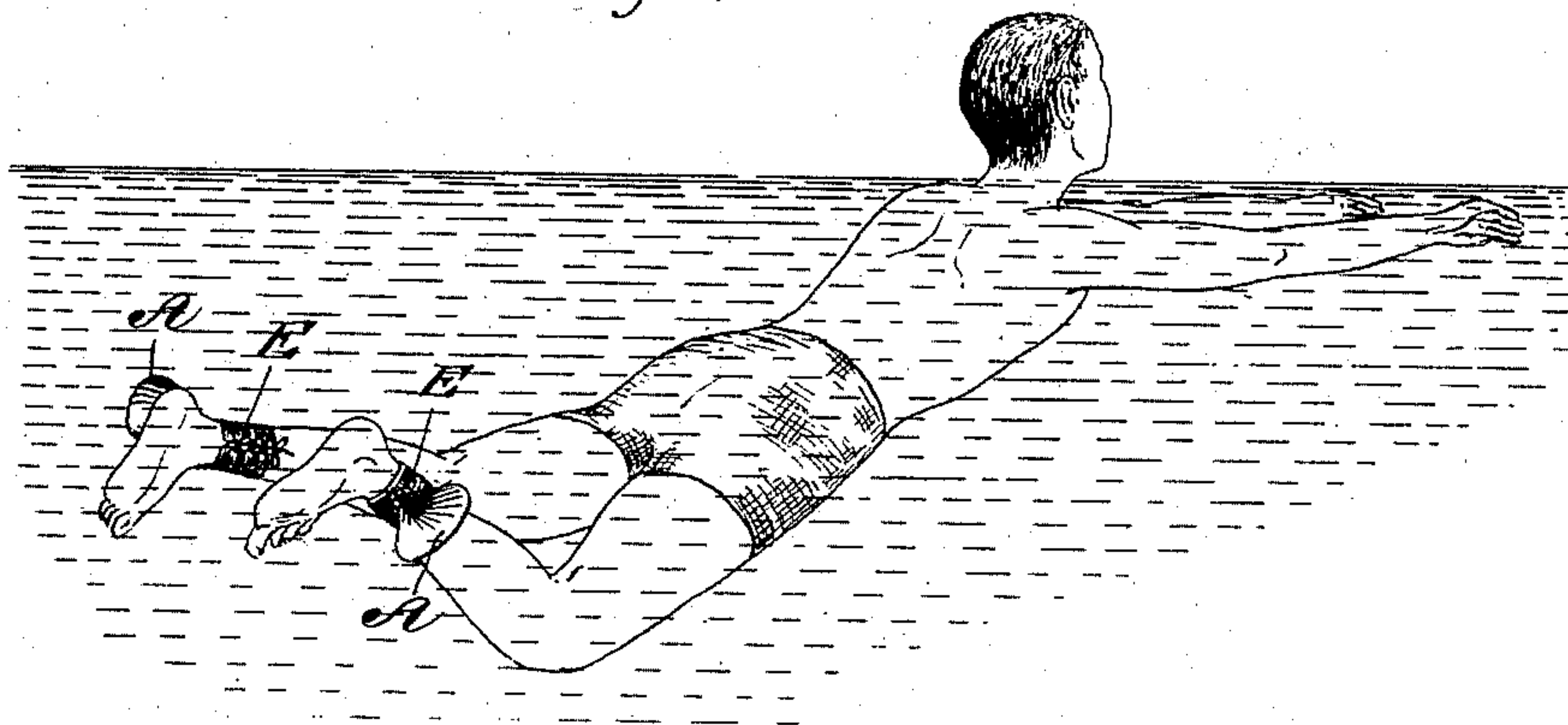


Fig. 2,

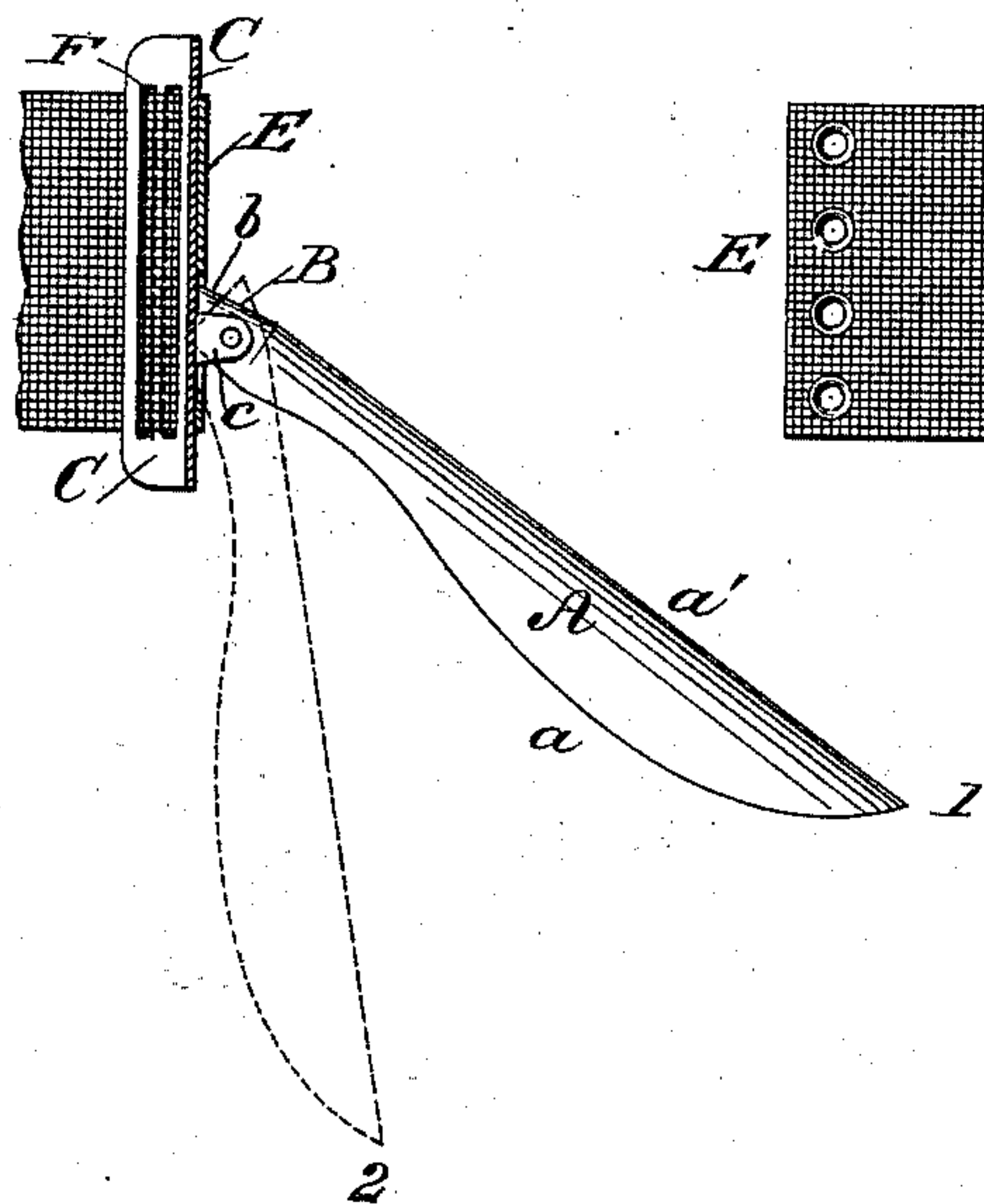
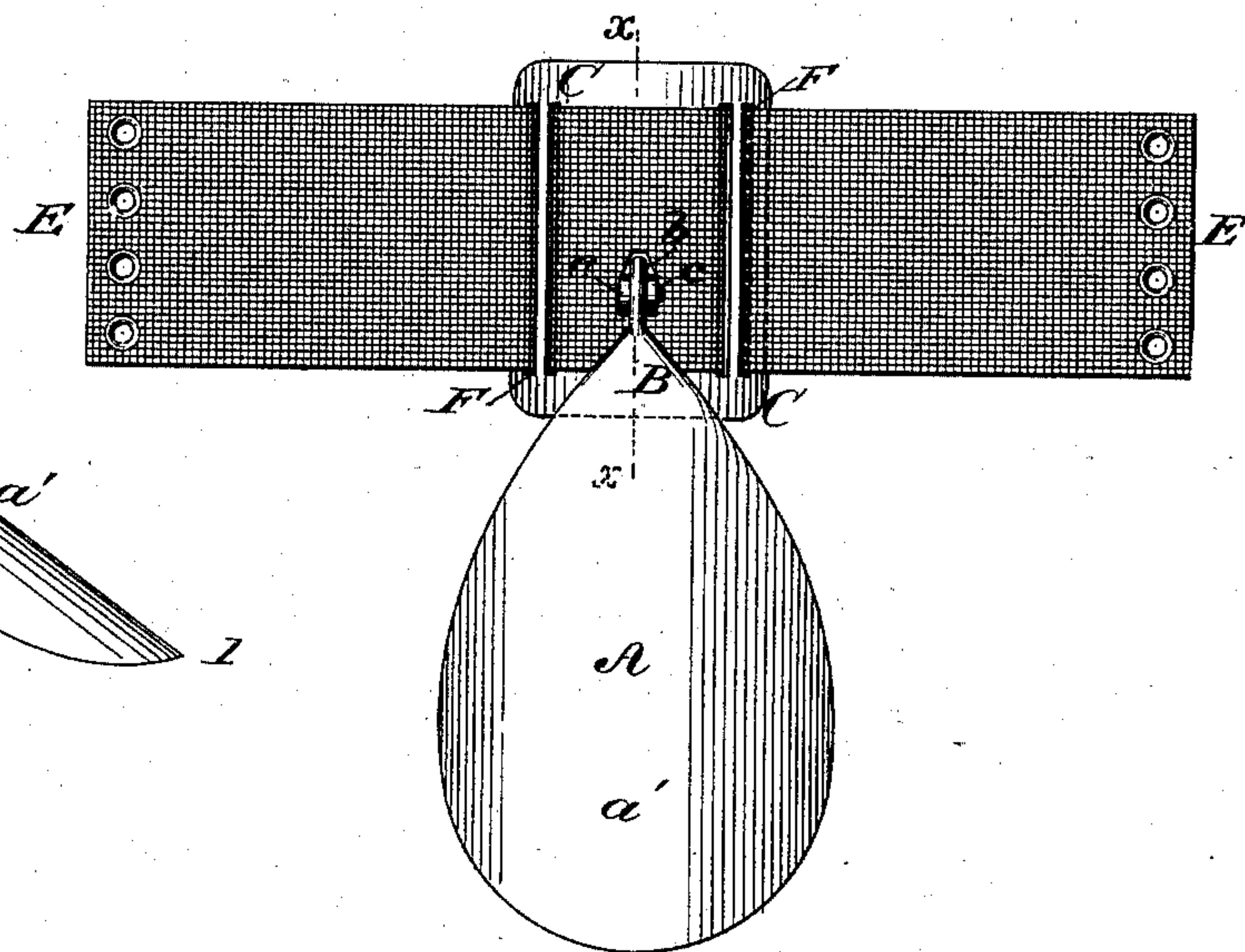


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

RIDNER P. CAFFERTY, JR., AND WILLIAM N. CAFFERTY, OF NEW YORK, N. Y., ASSIGNORS, BY DIRECT AND MESNE ASSIGNMENTS, OF ONE-HALF TO CHARLES GRIMMER, GEORGE H. GILLETTE, AND JOHN W. GRIMMER, ALL OF SAME PLACE.

SWIMMING ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 476,000, dated May 31, 1892.

Application filed February 6, 1892. Serial No. 420,591. (No model.)

To all whom it may concern:

Be it known that we, RIDNER P. CAFFERTY, Jr., and WILLIAM N. CAFFERTY, citizens of the United States, residing in the city, county, and State of New York, have invented a certain new and Improved Swimming Attachment, of which the following is a specification.

The object of our invention is to present a resisting-surface to the water during the act of swimming greater than that presented by the natural limb.

Our invention consists in a propelling-blade moving on a single axis, which is distended automatically during the rearward thrust of the limb and retired during the forward recovering stroke, thus greatly aiding propulsion without retarding the advancement of the body through the water.

Referring to the accompanying drawings, Figure 1 represents the swimmer and the device attached, showing the same in a distended position. Fig. 2 is an enlarged side view, partly in section, on the line $x x$, Fig. 3, of the device, illustrating two positions of the blade; and Fig. 3, a front view of Fig. 2, showing the blade in its lowermost or retired position.

The propeller-blade A may be attached in any suitable manner whereby it is permitted to have a limited angular movement. To provide for this, the shank B of the propeller-blade A is pivoted to a suitable attachment-plate C, which is securely adjusted to the ankle, so that the propeller may be rigidly supported thereby when distended. The shank of the blade A is pivoted between suitable lugs c on the plate C, and there is a stop-shoulder b of the shank B, which acts as a stop on the surface of the plate C to limit the outward angular movement of the blade A, as seen in Fig. 2. The attachment-plate C may be held in position in any suitable manner. I find it expedient to employ a band E of fabric, which is passed through suitable slots F in the plate C, holding the latter in a firm position by lacing or other fastening device, uniting the extremities of the band upon the inner side of the ankle, as

indicated in Fig. 1. Buckles, buttons, hooks, or other equivalent fasteners may obviously be employed. Preferably the inside a of the propeller-blade A is concave and the outside a' is convex, as represented, in order to resist the water more effectually when moved in one direction than it would when moved in the other.

In operation the blade A automatically assumes the distended position 1 in Fig. 2 during the rearward thrust or stroke of the limb, such distended position being limited by the stop-shoulder described. When the limb is retracted, the propeller-blade A assumes the retired position 2, (indicated in dotted lines in Fig. 2,) whereby it lies closely to the ankle or foot and offers as little resistance as possible to its recovery through the water preparatory for the next stroke.

Our invention is not limited to the species of construction shown, inasmuch as the form, contour, or size of the propeller-blade may be varied as found most expedient. The construction of the blade may be modified, for instance, by forming it of a marginal loop of strong wire and filling the center with webbing of suitable fabric or rubber or other material, which may be either distended or left slack and moderately flexible, so as to offer a concave surface when thrust against the water.

The flexible attachment of the blade to the limb may be constructed in various ways. For instance, it may be attained by the use of pliable material in lieu of a hinge or joint. The hinge or joint may be provided with two lugs placed farther apart than shown and the blade connected thereto by two or more independent shanks, forming a plurality of pivots in a common axis. Moreover, we do not limit ourselves to any particular material used in the construction of the blade illustrated. It is desirable to have the blade as light and rigid as possible, and we therefore prefer to employ thin sheet metal for the purpose.

The swimming attachment may also be adapted in like manner to the wrists of the swimmer, if desired.

Having thus fully described our invention, what we claim, and desire to secure by Letters Patent, is—

In a swimming attachment, a non-flexible
5 propeller-blade permanently concaved upon one side and convexed upon the other, for the purpose described, and an attachment-plate, whereon the blade is pivoted at its shank, the

shank of the blade having a stop-shoulder bearing against the plate to limit the angular movement of the blade.

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Witnesses:

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