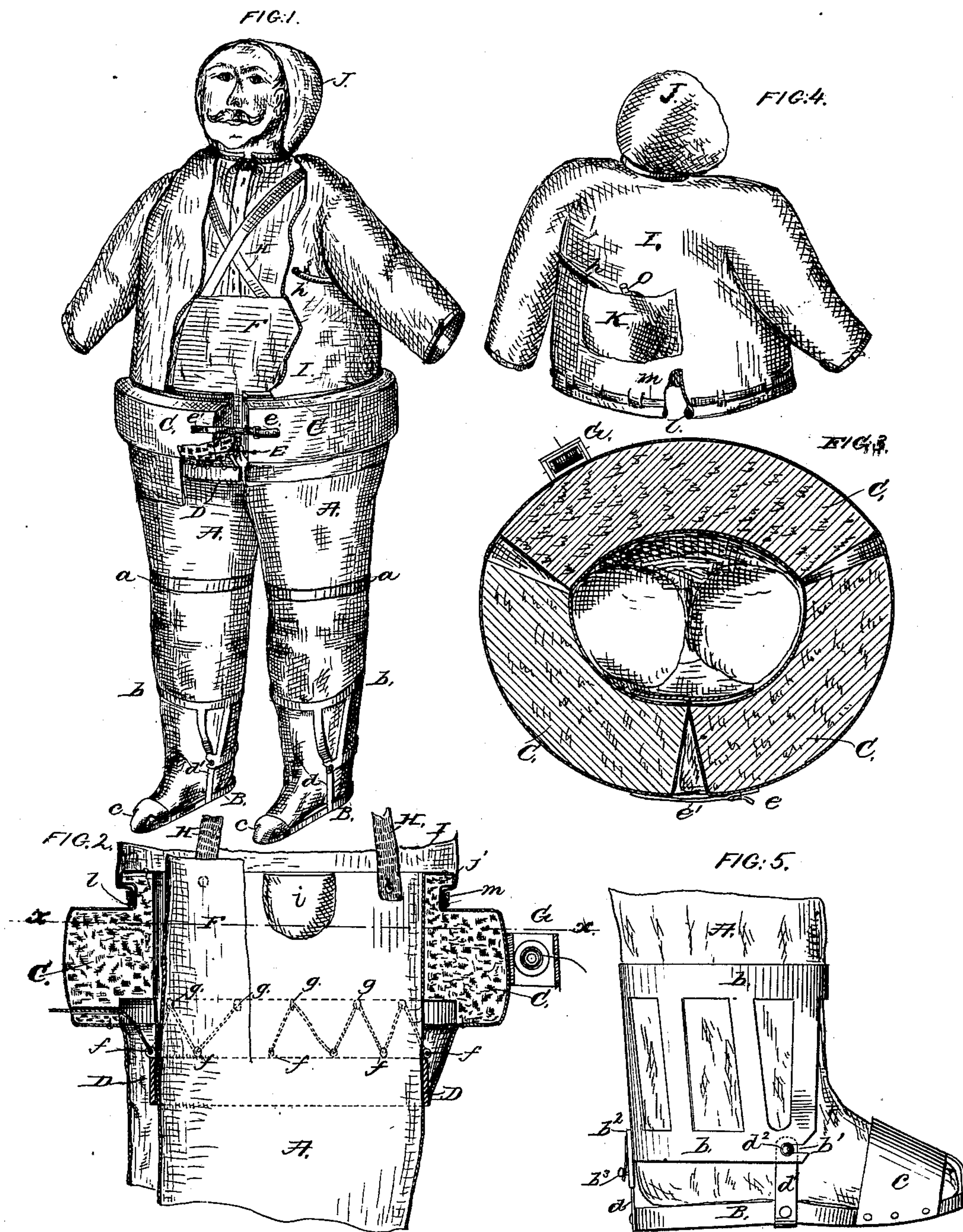


F. VAUGHAN.
Life-Preserver.

No. 218,604.

Patented Aug. 12, 1879.



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UNITED STATES PATENT OFFICE.

FRANK VAUGHAN, OF ELIZABETH CITY, NORTH CAROLINA.

IMPROVEMENT IN LIFE-PRESERVERS.

Specification forming part of Letters Patent No. 218,604, dated August 12, 1879; application filed June 6, 1879.

To all whom it may concern:

Be it known that I, FRANK VAUGHAN, of Elizabeth City, in the county of Pasquotank and State of North Carolina, have invented a new and Improved Life-Preserving Suit; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a front view of the entire suit with the front of the water-proof suit cut away. Fig. 2 is a vertical section taken about the waist of the suit. Fig. 3 is a horizontal section through the line *x x* of Fig. 2. Fig. 4 is a rear view of the shirt. Fig. 5 is a detail of the foot and leg portion of the suit.

My invention relates to an improved life-preserving suit; and it consists in a suit the lower section of which is made in the form of rubber pants, distended and protected by rigid frames and rings, and having a sectional annular float at the waist, in combination with a rubber shirt having a strap and draw-cords to connect it with a flange on the float.

The invention also consists, among other features, in the peculiar construction and arrangement of separable weighted shoes or soles, and in the means for shortening and lengthening the pants, as hereinafter more fully described.

In the drawings, A represents the pants, which are made of rubber cloth, to render them water-tight, and which, just above the knee, are distended by metal or wooden rings *a*, and which, below the knee, are distended by metal frames *b*. These frames form an attachment for the weighted soles B, and also contribute to the weight, so as to hold the body upright in the water. The soles B, to which the upright position is mainly due, are heavily weighted, and are provided with metal toe caps or guards *c*, to protect the stocking portion of the suit. The said soles are detachably connected to the frames *b* in the following manner: The said frames are formed at their lower front edges with slots *b*¹, and at their heel portions have a socket, *b*², into which a locking-stud, *b*³, is projected by means of a spring. To the sole there is connected, at the heel, an

upwardly-projecting perforated tongue, *d*, and upon each side, at the instep, upwardly-projecting bars *d*¹ *d*¹, having at their upper ends laterally-projecting headed studs *d*².

In securing the soles, as thus constructed, to the frame *b*, the headed studs *d*² of the bars *d*¹ *d*¹ are made to enter the slots *b*¹ of the frame, and the tongue *d*, at the heel of the sole, is then forced into the socket *b*², and is secured therein by the locking-stud *b*³, which is forced by its spring through the perforation in said tongue.

The object of making the weighted soles thus easily detachable will be explained farther along.

At the top or waist of the pants is arranged the annular float. This consists of several sections of cork, C C C, covered by rubber cloth, and hinged or flexibly connected, so that said annular float may be expanded or contracted to suit the waist of the wearer. This float is provided with a buckle, *e*, and strap *e*¹, by which it is fastened about the waist, and the rubber cloth inclosing said float is so connected with the rubber cloth of the pants as to make a water-tight joint. Just below the waist of the pants is a rigid, or nearly rigid, band, D, which band has upon its upper surface a series of lacing-eyes, *f*, alternating with a series of lacing-eyes, *g*, on the lower side of the annular float. Through these eyes on the band D and float is laced alternately a cord, E, the ends of which pass to the outside of the float through holes near the disconnected ends of the same. By drawing upon this cord the band D and the whole of the lower portion of the suit are raised and the pants thereby shortened. This, it will be seen, adapts the pants to the length of the legs of the wearer.

Just at the point where the ends of the float fasten in front the material of the pants is extended upwardly in the form of an apron, F, which prevents ingress of water at this point. Around the inner edges of the float also are formed pockets *i*, for the reception of money or valuables.

To the rear of the float is attached a reel-box, G, containing a revolving spool and a line of cord wound about the same. When the wreck occurs near the land, one end of this line is connected to the ship, and allowed to

run out as the wearer approaches the shore. This, it will be seen, furnishes means for taking a life-line to the shore.

The portion of the suit as so far described is fastened about the shoulders by suspenders H H, and may be used as a complete life-preserver by itself. To render the same more complete, however, I form about the upper edge of the sectional float an overhanging lip or flange, *j*, and provide a water-proof shirt, I, for connection therewith. This shirt has at its lower edge an elastic band, *l*, and also a strap, *m*, provided with a buckle. This elastic band fits over the overhanging flange *j* of the float, and the strap *m* serves, when buckled, to tightly secure the suit to said flange. A similar elastic band and strap are also provided at the cuffs and neck of the shirt, together with a hood or cap, J.

K is a water-bag or rubber canteen, which is fixed to the back of the shirt, and is provided with an inlet, *o*, and a rubber pipe, *p*, leading around to position in range of use for drinking. This bag is designed to be filled with fresh water to quench the thirst when the necessities of the case compel the wearer to be in the water for a long while.

In constructing the shirt it is, as before stated, made water-proof; but its outside covering is made of some red material; or the rubber may be dyed or painted red, as this color is most distinguishable at long distances, and, when a wreck occurs in open sea, increases the chances of being seen and picked up by other vessels.

In making use of the invention the pants are put on in the usual manner, and then adjusted as to length by the lacing-cord E. The sectional float is then fastened about the body by the strap and buckle, the shirt put on and fastened to the float as described, and the wearer then launches into the sea.

In explaining the use of the detachable soles, I would say that while these are necessary to keep the body erect while in the waves, they are objectionable when near the land and in the breakers, for the reason that they cause the legs to gravitate into the under-tow.

With my arrangement it will be seen that when the under-tow is reached the wearer withdraws the locking-stud *b*³, and the soles drop off, leaving the body to float upon the surface and easily gain the shore.

Having thus described my invention, what I claim as new is—

1. The water-tight rubber pants A, having at their waist a permanently-attached annular float composed of hinged segmental pieces, having a rigid flange, *j*, in combination with a shirt, I, having a draw-cord or strap adapted to secure said shirt about the flange, substantially as described.

2. The water-tight rubber pants having band D, with lacing-eyes, the flexibly-connected floats C, having corresponding lacing-eyes, and a cord, E, passed through said lacing-eyes, all combined for the purpose of adjusting the length of the pants, as described.

3. The combination, with the rubber pants A, having the permanently-attached frames *b*, with locking-stud *b*³ and slot *b*¹, of the detachable weighted soles B, having toe-guards *c*, perforated tongue *d*, and tongue *d*', with a headed stud, substantially as and for the purpose described.

The above specification of my invention signed by me this 2d day of June, 1879.

FRANK VAUGHAN.

Witnesses:

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