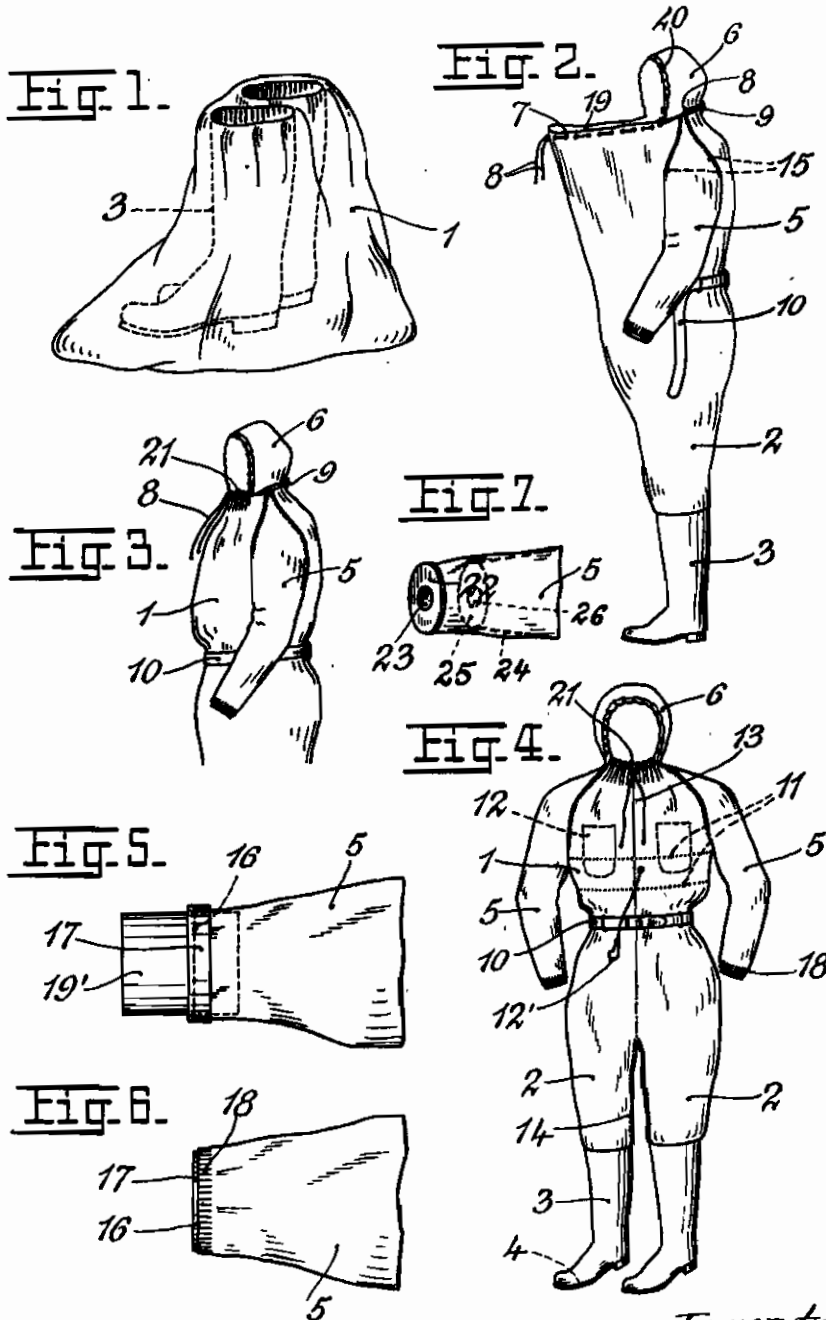


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LIFE-SAVING SUIT
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ALIEN PROPERTY CUSTODIAN

LIFE-SAVING SUIT

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The present invention relates to waterproof life-saving suits, adapted to be drawn on outside the usual clothes, and has mainly for its object to provide a life-saving suit, which is simple and effective and easily can be taken on and off.

The main characteristic feature of the invention is, that the waterproof cloth of the suit, consisting for instance of gutta-percha, caoutchouc tissue, impregnated poplin or the like, is thin and flexible in such a degree, that the suit does not prevent ones movements worth mentioning, for the purpose that the suit also may be used as a working dress as well as a life-saving suit. Further features of the invention will appear from the following description of an embodiment of the device.

In order to describe clearly my invention I will refer to the accompanying diagrammatical drawing, wherein:—

Figure 1 shows the suit rolled down before the drawing on and at a somewhat larger scale than the remaining Figures.

Figure 2 shows a side view of the suit after the drawing on but before the closing of the top opening, and

Figure 3 shows the same after the closing.

Figure 4 shows a front view of the suit after the closing.

Figures 5 and 6 illustrate a manner of making a wristband.

Figure 7 shows another construction of the wristband.

The suit consists of waterproof cloth, which is thin and flexible in such a degree, that the suit does not prevent ones movements worth mentioning. According to the invention the suit therefore is fit for use as a working dress as well as a life-saving suit. When a ship is travelling through a danger zone the crew as well as the passengers may have the suit on all the time, the suit not causing any drawbacks during the work or other occupation. The thin and flexible cloth also has the advantage, that the suit can be drawn on as quickly and easily as ordinary clothes. The cloth may consist of gutta-percha, caoutchouc tissue, impregnated poplin or the like, the thickness of which preferably being below 1 mm. The suit eventually may be impregnated after being sewed together.

The suit consists of a wide, bag-shaped part 1 made in one piece with the trousers 2. The trousers either may be closed at the lower ends and provided with widenings for the feet or they may be tightly attached to rubber-boots 3 or eventually galoches as shown on the drawing. In

order to prevent the feet from floating to the surface when the user of the life-saving suit is lying in the water, the soles 4 of the boots may be heavy, for instance consisting of lead or the like, or leaden insoles may be used. Each side of the bag 1 are provided with raglan sleeves 5 attached by means of the seams 15. These sleeves may be provided with watertight wristbands as described below.

The suit is sewed together in a very simple manner, the suit only being provided with one seam 14 on the adjacent sides of the pair of trousers, one seam 13 on the front side from the fork up to the chin and eventually a seam on the back side from the fork to the top of the suit. The latter, however, may be dispensed with if the cloth has a sufficiently great breadth. The seams may be covered by rubber bands or the like. The parts of the suit eventually also may be pasted together.

Apart from the sleeves the suit is quite closed except at the top of the bag 1, which is provided with a wide opening 19 as shown in Figure 2. Through this opening the user steps in when the suit is to be drawn on. The suit has such a width, that it when not in use may be rolled down and placed on the outside of the boots 3 as shown in Figure 1. In this position the suit quickly and easily may be drawn on, the user putting the feet into the boots and then drawing the suit upwards to the position shown in Figure 2. As shown the suit may be provided with a hood 6 attached to the back part of the edge of the opening 19. The hood may be sewed or pasted to the suit or may also be made in one piece with the suit.

The edge of the front part of the opening 19 situated in front of the hood is provided with holes or eyes 7 placed at suitable distances from each other. A draw-string 8 is provided going through said eyes, the ends of the draw-string hanging down on the front side of the suit, while the middle part 8 of the string is running along the back side of the hood 6 and being guided in one or more loops 9 or the like attached to the hood. The edge 20 of the hood may be provided with a tightening elastic band adapted to press the hood edge watertight against the head. Such an elastic band, however, is not necessary.

When the suit is drawn on as shown in Figure 2 the opening 19 is closed by pulling the ends of the draw-string 8, the opening thereby being contracted round the neck as shown in Figures 3 and 4. The edge of the opening 19 thereby is forming folds or corrugations 21, which owing to the pull in the draw-string is pressed against each

other and against the neck at the same time as the edge 20 of the hood is pressed against the head. Practical tests have proved, that by this device a watertight closing of the suit is obtained. When the suit is closed the draw-string is secured by means of a knot or an automatical locking device attached to the string. If desired, the draw-string may be placed in eyes along the edge 20 of the hood instead of running on the back side of the hood.

The hood if desired may be dispensed with. In this case the eyes and draw-string are placed along the entire length of the edge of the opening 19, which is being contracted by pulling the string.

The suit is made relatively wide, thereby in closed position containing a quantity of air causing a sufficient buoyancy. It is, however, important that the suit may be contracted round the waist and therefore it is provided a waist-belt 10 attached to the suit at one or more points or slidably mounted in loops or the like attached to the suit. The suit also may be provided with a strong belt or reinforcement 11 placed outside or inside the suit just below the sleeves. To this belt, which may have a relative great breadth, is secured a strong strap or the like provided with a suitable hook 12', by means of which it is possible to hook oneself to a life-raft or the like or to other shipwrecked persons. The belt 11 if desired may be provided with more straps or the like or other life-saving devices.

The suit also may be provided with shoulder-straps or the like, but this has proved unnecessary.

If desired, the suit may be provided with one or more floaters for instance filled with kapok, reindeers hair or other suitable material. As floaters also rubber cushions or tubes may be used, which may be filled with air. The floaters may have a relative small thickness and a great area and may be permanently secured to the outer or inner side of the suit. The floaters also may consist for instance of rubber cushions filled with kapok or the like. These cushions are placed in pockets 12 inside or outside the suit when the suit is to be used for life-saving. When the suit is used as a working dress the cushions may be removed.

The pockets 12, which may be placed anywhere on the suit in a suitable number and may have any suitable shapes and dimensions, also may be used for keeping small quantities of food, a knife, an electrical pocket lantern, a whistle, a compass, fire-works and other equipments.

A floater shaped as a tube filled with kapok or air also may be used, said tube being placed round the body. When the user of the suit while at work wants to have the upper part of the body free, the suit may be rolled down about said tube for instance to the waist. The suit in this case so to say looks like rubber trousers or wading trousers, and the suit very quickly can be rolled upwards and used as a life-saving suit when it is necessary to jump in the water. The floater tube, however, is not shown on the drawing.

Instead of the floater being combined with the suit, of course a life belt or a life-saving jacket already at hand may be used outside or inside the suit.

As above mentioned the sleeves of the suit at the wrists may be provided with elastical wrist-

bands fitting water-tightly round the wrists. Such a wristband may consist of an elastical rubber strip of a suitable breadth sewn or pasted to the sleeve wrist. According to Figures 5 and 6 the wristbands may be produced in that manner, that the sleeve is reversed (Figure 5) and the sleeve wrist 16 is drawn over a mould 19', which for instance may be cylindrical. Then the elastic band 17 is pasted to the sleeve after being somewhat stretched, the band being suitably placed in such a position, that the band edge projects somewhat outside the sleeve edge. When the elastic band is attached the mould 19' is removed, whereby the band and consequently also the sleeve opening is being contracted somewhat. Then the sleeve again is reversed (Figure 6), and it will be seen; that the outer side of the sleeve wrist owing to the said contraction in being folded as indicated by 19, the folds making an expansion of the sleeve wrist possible when the hand is forced through the sleeve opening.

As shown in Figure 7 a watertight closing of the sleeve opening also may be obtained by attaching a thin, flexible and elastic caoutchouc tissue 22 to the edge of the sleeve opening. The caoutchouc tissue is provided with a central hole 23, through which the hand is forced when the suit is being drawn on, the diameter of the hole being somewhat smaller than that of the wrist.

In order to obtain an absolute watertight closing of the sleeve an additional inner sleeve 24 may be provided, the opening of which being closed by a flexible and elastic watertight tissue 25 with a central hole 26 for the arm. As shown the tissues 22 and 25 are situated at some distance from each other.

If desired, detachable mittens or gloves provided with an elastic wrist edge may be used in combination with the suit. The mittens or gloves eventually may be permanently secured to the suit.

The different details of the suit, however, may be varied in different manners. If desired, for instance eyes and draw-string may be dispensed with, and in this case the closing of the suit is obtained thereby, that the edge of the upper opening is placed round the head and the neck and is secured by means of hooks, bands or the like. In order to secure a watertight closing the edge of the opening may be provided with an elastic band. If closing of the suit by means of a sliding lock is desired, a tab of elastic or non-elastic material must be provided behind the sliding lock. The tab must have a breadth sufficient to allow the bag 1 to expand to its normal width.

Tests have proved, that it is possible to a person to eat when lying in the water. To obtain this the upper opening must be contracted tightly close behind the nose, so that the mouth is situated below the edge of the opening. When the person is going to eat one or both arms are drawn out of the sleeve or sleeves respectively, the sleeve opening being closed by a plug or a clip. Then it is possible to put the hand and hands respectively in the pockets of the clothes inside the suit or in the inner pockets of the suit.

It is also stated, that when the suit as described is used it is possible to keep the body warm during a long time even if the shipwrecked person is lying in icy-cold water.

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