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SWIMMING AND LIFE SAVING EQUIPMENTS

Filed April 27, 1940

Serial No.
332,049

2 Sheets-Sheet 1

Fig. 1

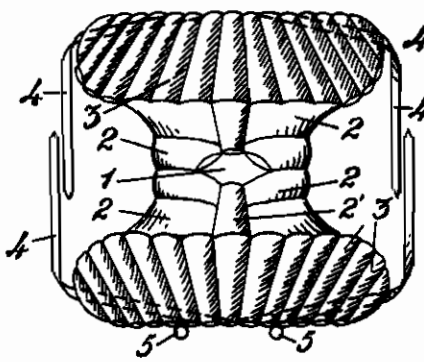

Fig. 2

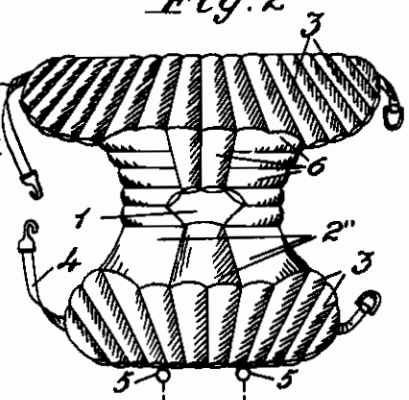

Fig. 5

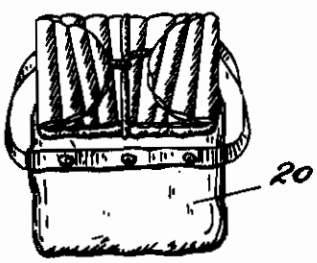

Fig. 8

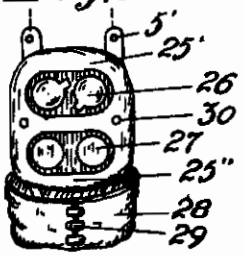

Fig. 9

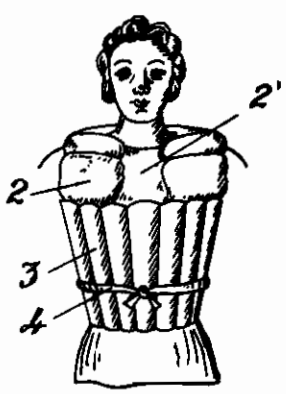

Fig. 10

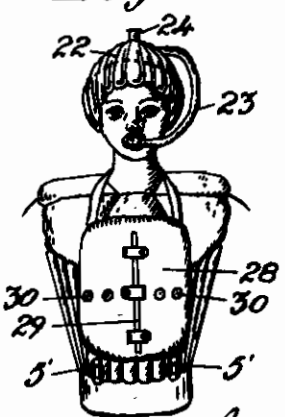

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Fig. 3

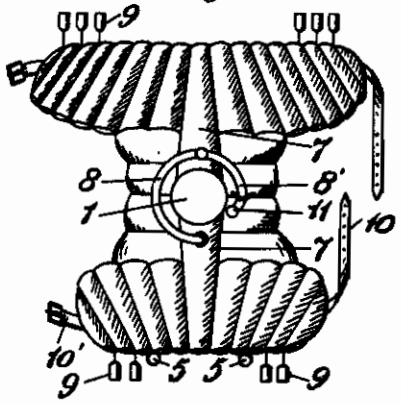


Fig. 4

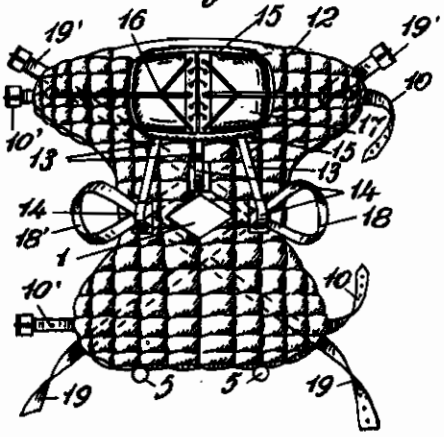


Fig. 7

Fig. 6

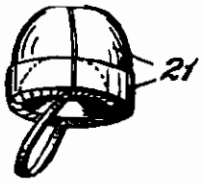


Fig. 11

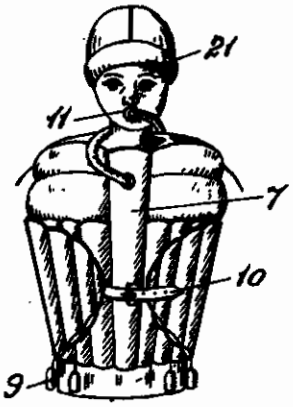
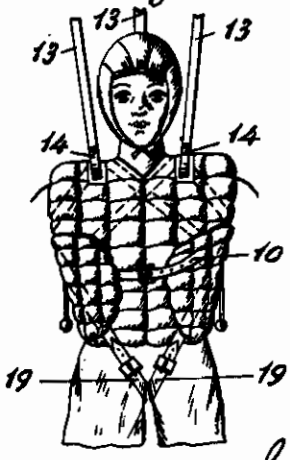


Fig. 12



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ALIEN PROPERTY CUSTODIAN

SWIMMING AND LIFE SAVING EQUIPMENTS

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The subject of the present invention relates to a life saving equipment formed of voluminous, water-resisting material capable of floating which is fitted in the manner of a cushion between two or more strips of water-proof fabric. The equipment is for protecting persons of every age, which make use thereof, not only from drowning but also against shocks, cold or other dangers which occur during distress at sea or when bathing.

It has been proposed to arrange the volume of the life saving appliance, capable of floating, not only in annular or belt form at the neck, around the chest or the body, which leads to an unstable, that is to say defective position of the centre of gravity of the swimming person, but also to distribute the same by means of a vest or jacket-like article of clothing, capable of floating, over the upper part of the body from the waist up to the neck. These known swimming vests, however, have the disadvantage that in order to obtain a satisfactory seating and not to move under the action of the waves, they must be produced according to measurements of the wearer, which is a very serious defect in connection with life saving appliances which are to be used on board ship or for a varying public at baths. A swimming vest which is not firmly connected to the body and does not bear snugly against the same consequently only constitutes, in the same way as a life belt, a defective protection.

In contrast the life saving equipment according to the invention is characterised in that it employs approximately an X-shaped swimming vest which by firmly tying and superimposing the weakly cushioned parts in the neighborhood of the waist can be connected closely to any adult human body and of which the increase of the cushioning which increases towards the neck ensures keeping the head out of the water and in particular ensures a stable position of the body in the water.

A further feature of the life saving equipment resides therein that two tying devices are provided which are attached to diametrically oppositely located points so that with every height of body there is always obtained a symmetrical distribution of the weight or upward driving force. The cushioned swimming vest is divided, in accordance with the invention, into three parts of which the middle part is preferably provided with horizontally extending sections, whilst the two outer parts located opposite one another consist of vertical sections extending conically towards the waist, whilst in all three parts the centre sections are cushioned to the greatest extent, whilst the outermost sections are cushioned to the weakest extent. The swimming vest may, if desired, be provided with stronger cushioning on the chest than on the back, whereby the body assumes in the water a vertical but slightly rearwardly inclined position so that the mouth will be located high above the water level.

The swimming equipment according to the invention is adapted to be combined with different accessories varying according to different applications, as a swimming helmet, a parachute, a breathing device, ballast weights and a food container and these combinations form also part of the invention.

A number of forms of construction of the invention are shown by way of example in the accompanying drawings, wherein:

Fig. 1 shows a simple form of construction of the swimming vest according to the invention with similar chest and back portions.

Fig. 2 shows a form of construction with more strongly cushioned chest part and wherein the side parts, which are tied together at the front, are longer.

Fig. 3 shows a separate form of construction for divers and the crew of submarine with a breathing device and ballast weights.

Fig. 4 shows a separate form of construction for pilots who fly over the sea, with a parachute and securing straps.

Fig. 5 shows a folded swimming vest with the corresponding bag.

Fig. 6 shows a simple cushioned swimming and protecting helmet.

Fig. 7 shows a separate construction of a helmet and an ear protecting and breathing device.

Fig. 8 shows an auxiliary appliance (bag for foodstuffs with a cover).

Fig. 9 shows how the simple swimming vest in Fig. 1 can be worn (side parts of the chest portion are tied over those of the back portion).

Fig. 10 shows the application of the accessory appliance to a swimming equipment with a helmet according to Fig. 7.

Fig. 11 shows a separate equipment for divers according to Fig. 3 with a simple helmet according to Fig. 6.

Fig. 12 shows how the separate construction of the swimming equipment according to Fig. 4 can be worn (side parts of the back are drawn over those of the chest portion, securing straps in the crutch, swimming helmet according to Fig. 7.

In the simple form of construction of the swimming vest shown in Fig. 1, in which the chest and back portions are similarly constructed, so

that it is not possible for it to be worn the wrong way round, 1 indicates the opening through which the head is placed when the equipment is placed in position, 2 indicates the cushioned sections which cover the shoulders, chest and upper portions of the back. These sections, according to the invention, are provided with the maximum cushioning for the reasons set out above, and with the exception of the central part 2', extend parallel to the shoulders which facilitates applying the equipment by a bending from the chest, over the shoulders to the back.

The outer sections are far less cushioned, cushioning being reduced in all directions outwardly. The separate sections 3 are made slightly conical. 4 indicates the securing bands which are sewn to the inside of the conical sections or to their seams and when tied in pairs around the body press the swimming vest firmly against the body. At 5 are indicated two rings for securing a food container on the chest.

In the form of construction shown in Fig. 2 the sections 2'' on the chest are more strongly cushioned than the sections 6 on the back so that the swimming vest has a pronounced front of which the side parts are also shorter than those of the rear part which at the front bear against the body and are finally tied together. As mentioned, an inclined position of the body in the water is thus obtained so that the mouth is at a high level.

The separate construction for divers and for submarine crews, in Fig. 3, corresponds substantially with the form described with reference to Fig. 2 but with the difference that two central sections 7 are provided which are filled with a supply of air or oxygen and are connected together by a tube 8 so that an equal quantity of gas is withdrawn from both sections 7 through the breathing tube 8' and the positions of equilibrium remains undisturbed. The weights 9 are for the purpose of diving and for remaining some time under water, as also for enabling a slow rising in the water to be effected, without separate auxiliary appliances, whilst when the equipment is used for submarine crews they only serve this latter purpose and can be detached separately one after the other. Instead of the securing bands, belts 10 and buckles 10' are preferably used in this and other forms of construction. 11 indicates a mouthpiece with two short rubber tubules for the nose which permit of breathing under water through the mouth and nose.

The separate construction for pilots who fly over the sea, is provided in the back portion 12 with a recess for a parachute which is secured to the swimming vest by means of strong bands 13 and rings 14, but which otherwise is placed freely in the said non-cushioned recess, where it is prevented from falling out by a loose layer of fabric 15 and by two layers of fabric 17, capable of being drawn back in the manner of curtains by means of cords 16. Naturally instead of cords 16 there may also be provided a binding device for the parachute which opens automatically when jumping off. In this construction the pilot jumps off over water with the parachute, wearing the swimming vest secured to the parachute as described, the vest being held in position by strong bands 18 and 18', sewn to the interior of the swimming vest, and which pass through the rings 14 and when put on pass under the armpits, whilst the ends 19 and 19' are passed crosswise under the crutch and are then connected together. The weight of the person thus acts substantially as a pull on the upper limbs. After the pilot, who has jumped off, has reached the surface of the water, he releases himself from the parachute by opening a spring catch hook which connects the parachute to the band system 13. The construction of the cushion is different in this example in so far as it extends throughout and the opposite sides thereof are connected together at spaced intervals.

As shown in Fig. 5 the division of the swimming vest, according to the invention, into three main parts enables it to be folded together easily and tied by means of the extending bands and inserted conveniently into a bag 20.

The simple helmet shown in Fig. 6 has the feature that by a strong cushioning of the rear sections 2', both at the head and neck parts of the helmet, it facilitates remaining a long time in the water in the back position with the head raised out of the water.

The helmet shown in Fig. 7 differs from that shown in Fig. 6 by cheek and ear protectors, as also by the provision of an air supply in the head part 22 of the helmet. This supply serves, on the one hand, for a few moments of submersion and is withdrawn through a tube 23, but this air container 22 serves mainly to withdraw breathing air from a point located at a higher level above the water level, whilst the valve 24 serves to prevent water from entering the container 22 and the mouth.

The food storage container 25 shown in Fig. 8 consists of a cushioned frame into the recesses of which there are fitted flasks 28 and boxes 27, beverages, medicines, signals and food. The button fasteners 5' are connected to the rings 5 of the vest. For adapting the cushioning of the swimming vest, which becomes thicker towards the neck, more effectively, the parts 25 located in the vicinity of the waist are not only made thicker than the parts 25'' located in the vicinity of the neck, but the containers are made to conform with the varying thickness. The cushioning of the frame balances the additional weight of the containers. A sleeve 28 with a slot 29, capable of being buttoned, prevents the containers from falling out of the frame 26. It is itself secured to the frame 26 by buttons 30.

From Figs. 9 to 12, showing the swimming equipment as worn, there is shown particularly clearly how the volume increases conically, from the waist towards the shoulders and Figs. 11 and 12 show how the ballast weights are arranged for convenient detachment and equally distributed around the waist zone.

In its various combinations with a swimming helmet, a parachute, a breathing device, ballast weights and a food container, the life saving equipment according to the invention affords for the first time a complete protecting for the various persons by whom it is worn under different circumstances when remaining in the water for a length of time.

The known arrangements, such as life belts and so forth are in no way suitable for being combined with these additional protecting and life saving appliances, but it is only the construction of the swimming vest according to the invention which firmly embraces and protects the upper part of the body and which ensures a satisfactory location of the centre of gravity of the body in the water whilst ensuring absolute freedom of movement of the limbs, which makes this combination possible.

RAFFAELE CASELLE.