June 27, 1933. C. DI CARA 1,915,818

SUBMARINE RESCUE SUIT

Filed June 4, 1932

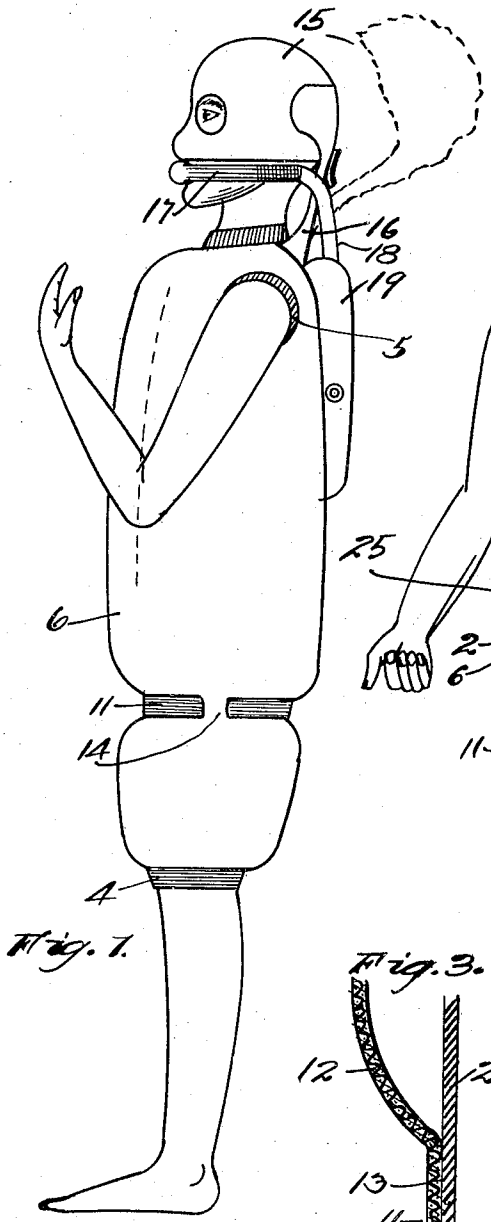


Fig. 1.

Fig. 3.

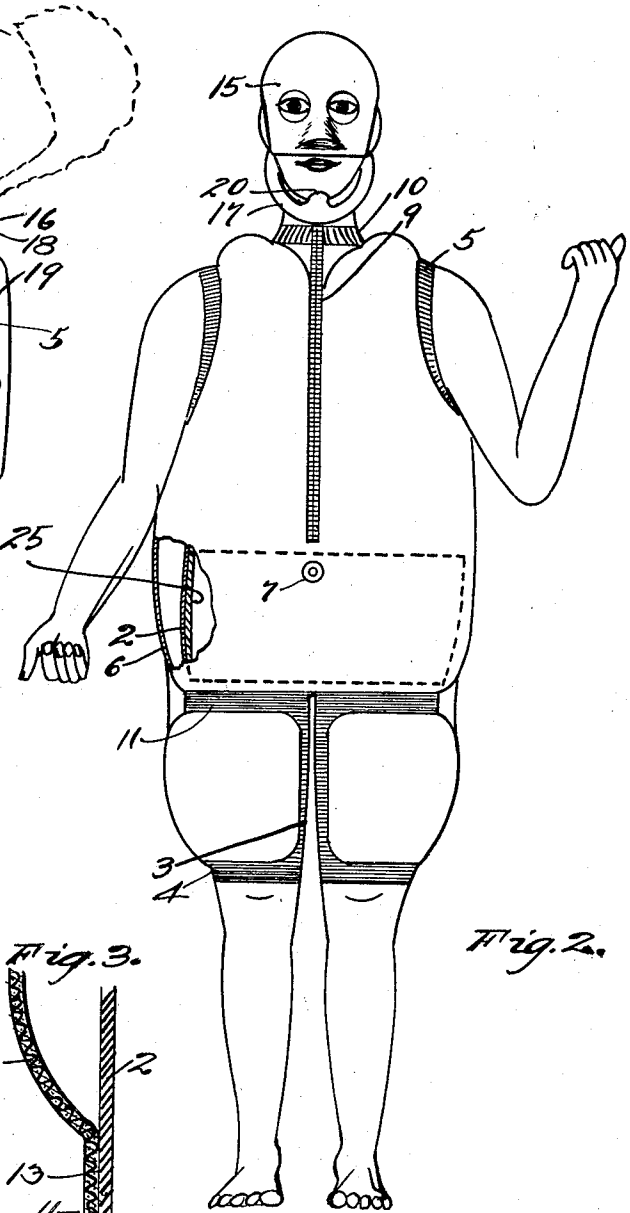


Fig. 2.

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SUBMARINE RESCUE SUIT

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This invention relates to life-saving apparatus and more especially to life-saving apparel for members of crews of submarine vessels, though it is to be understood that the apparel may be used generally by sea-going travelers.

It is an object of the present invention to provide a life-saving apparatus including an apparel to be readily donned by an individual in emergency, either when taking to the water from ships in distress while afloat or in escaping from sunken submarines. A further object is to provide a life-saving apparel including a garment adapted to be readily put on the body and with which is combined a desired head cover which enables free movement of the head and will exclude water from the ears and nostrils, and which garment is preferably of a hollow walled construction so that it may be inflated to render it buoyant.

A further object is to provide a submarine-crew rescue garment provided with means to supply breathing air and having a bridle which can be readily placed over or removed from the mouth of the wearer, and which is adapted to be substantially self-sustaining when in place so that the arms of the wearer are free for use.

An object is to provide an elastic skull cap combined with a garment in a manner enabling the skull cap to be drawn snugly over the head and cover the nose, eyes and ears, and leaving the mouth and chin and neck exposed for the convenient application of a breathing bridle which is connected to a source of breathable air or gas.

A further object is to provide a rescue suit including an inner union suit garment having leg portions and a body portion, both adapted to snugly contract onto the body of the user to exclude, as far as possible, the flow of water directly against the more vital parts of the body; the suit structure including an outer fabric which may be distended from the inner or elastic body fitting part by introduction of air under suitable pressure. And in this connection, an object is to provide the union suit with leg portions so connected to the body proper that the upper portions of the limbs can be freely worked for swimming or other action.

The invention consists in certain advancements in this art as set forth in the ensuing disclosure and having, with the above, additional objects and advantages, and whose construction, combination and details of means, and the manner of operation will be made manifest in the description of the herewith illustrative embodiment; it being understood that modifications, variations and adaptations may be resorted to within the scope, principle and spirit of the invention as it is more directly claimed hereinafter.

Figure 1 is a side elevation of the suit as donned for use; the cap being shown as applied, in full lines, and in dotted lines shown as thrown off the head.

Figure 2 is a front elevation of the apparel, a part of the suit being broken away to show the inner elastic body fitting garment and to show the hollow wall adapted for inflation.

Figure 3 is a detail sectional view showing the method of joining the upper body with a leg by a band portion.

The apparel as shown consists of an inner suit 2 which may be of rubber or other quite elastic material designed to snugly contract onto the body of the user to exclude water therefrom. This union suit includes an upper body part and lower separate leg parts 3 whose lower ends have contractive bands 4 to tightly close about the knees of the user and the inner suit 2 has arm holes which also have contractive bands 5 to close snugly over the shoulder and under the arms.

In order to obtain ample buoyancy so that the garment will quickly bring a submerged person, as one escaping from a sunken submarine, to the surface an outer stout fabric wall 6 is secured to the inner union suit garment 2, this wall being provided with an inflating valve 7 which may be located conveniently at the front of the garment; this being provided with an opening upwardly over the chest to permit access into the garment, this opening being closable preferably by a suitable form of interlocking lacing or

hook system 9 which extends up to elastic collar band 10 which is adapted to be closed snugly around the neck of the wearer when the fastening 9 is closed to the top of the collar band.

The inflatable outer cover 6 extends around the legs from front to rear but not between the contiguous inner portions so as to allow the free working movement of the limbs as desired. To further secure freedom of action of the limbs, the lower inflatable leg portions 6 are separated from the upper inflatable portion of the suit by narrow bands 11 in which the outer material 12, Fig. 3, is drawn into contact with the inner elastic garment set 2 and suitably secured along zone 13.

Communication, for inflating purposes, being provided by narrow conduits or passage-ways 14 located at the extreme sides of the thighs, Fig. 1. Thus when the garment is put on the user and is inflated it will serve as a buoyant life-preserver, and when not in use can be compactly folded or rolled up for storage purposes in convenient places about ship or in the equipment of its authorized user or owner, as the case may be.

A feature of the invention consists of an elastic skull cap 15 attached by a flexible strap or connecting part 16 to the back of the neck of the garment. The skull cap is adapted to be pulled down over the eyes, nose and ears of the wearer and serve to snugly keep out the water, but expose the mouth and chin and neck for free access and use. While the skull cap is in such position and prevents breathing in or out of the nose, the user is supplied with fresh air by means of a bridle loop 17 formed of strong, elastic hose connected at the back to a conduit 18 leading from an oxygen or air tank 19, which is securely fastened to the back of the suit. The bridle 17 is provided with an inwardly projecting mouth piece 20, Fig. 2, which can be readily inserted by the user when an escape is to be made from a sunken submarine or other emergency in which apparatus of this class may be used. The bridle can be applied and removed independently of the skull cap 15, and this can be applied and removed at will as would be desirable when the user is afloat in the water.

It is understood that the inner suit 2 may be of any suitable material as rubber or a rubber and fabric combination.

It is desirable to provide a stomach protecting belt 25 preferably of soft leather within the inner suit 2.

What is claimed is:

A submarine rescue suit having an inflatable, double-wall body provided with a head cover including a face mask to cover the eyes and nose, and provided with a breathing bridle having a supply source attached to the suit body, and an interior stomach covering band affixed to the inner wall of the body and a frontal lock seam means extending from above the band up to and securing the neck of the suit body.

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