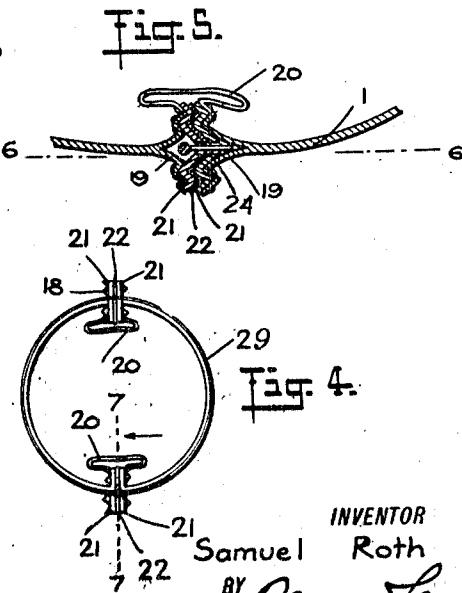
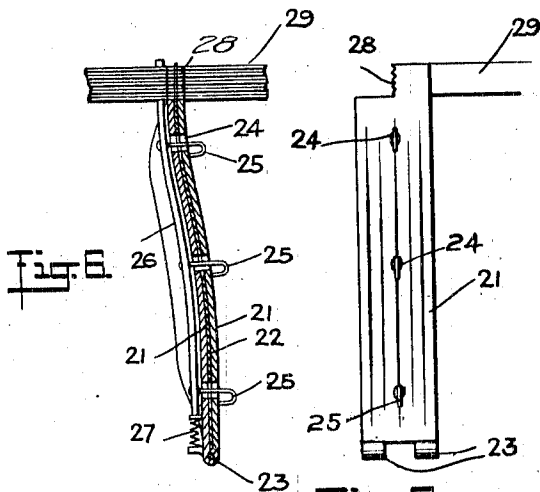
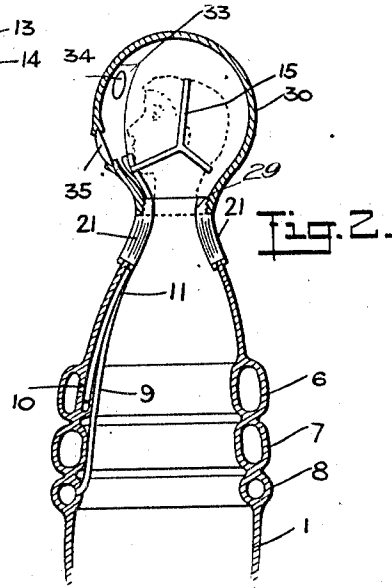
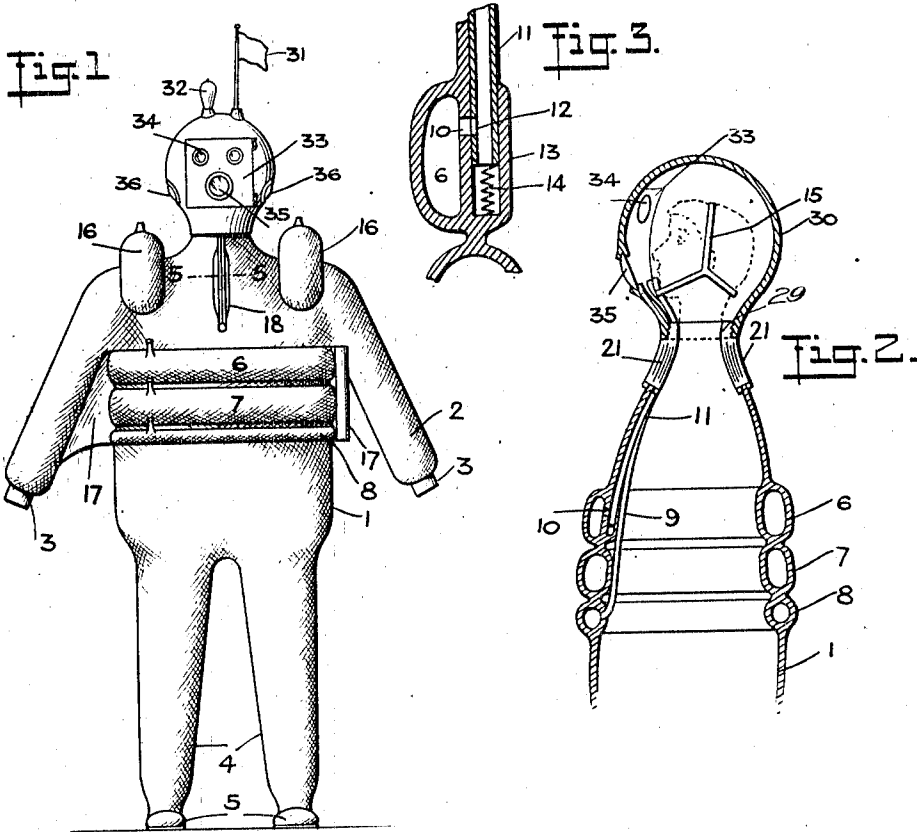


S. ROTH.
SWIMMING SUIT.
APPLICATION FILED APR. 18, 1912.

Patented Apr. 15, 1913.

1,059,215.



WITNESSES

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Fig. 7.

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UNITED STATES PATENT OFFICE.

SAMUEL ROTH, OF NEW YORK, N. Y., ASSIGNOR OF ONE-THIRD TO PIETER TREFFERS,
OF BROOKLYN, NEW YORK.

SWIMMING-SUIT.

1,059,215.

Specification of Letters Patent.

Patented Apr. 15, 1913.

Application filed April 18, 1912. Serial No. 691,669.

To all whom it may concern:

Be it known that I, SAMUEL ROTH, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Swimming-Suit, of which the following is a full, clear, and exact description.

My invention relates to swimming suits, and it comprises certain improvements especially designed to be used in connection with submarines for the purpose of enabling the members of the crew of the submarine vessel to escape therefrom in case of accident and make their way safely to the surface of the water.

In its preferred form my invention comprises a suit not unlike an ordinary diver's suit, but provided with buoyant attachments to enable the wearer to make his way upward in the water and keep on floating when once he reaches the surface.

My invention is also provided with a plurality of chambers which may be used for the purpose of storing water, oxygen and the like, to enable the wearer to sustain himself for a considerable length of time in case he should not be immediately picked up by a passing vessel to complete his rescue from the disabled craft abandoned by him.

Reference is to be had to the accompanying drawings forming a part of this specification, in which the same characters of reference indicate the same parts in all the views.

Figure 1 is a front elevation of my invention; Fig. 2 is a vertical sectional view, taken centrally through the body portion thereof; Fig. 3 is a vertical sectional view of a detail; Fig. 4 is a top plan of the collar which fits around the neck of the wearer; Fig. 5 is a horizontal sectional view on the line 5—5 of Fig. 1; Fig. 6 is a sectional view on the line 6—6 of Fig. 5; and Fig. 7 is an elevational view showing one of the interfitting strips used to line the edge of the suit along the chest and back portion thereof where the same is made to be opened to enable the wearer to don the same.

Referring particularly to the drawings, the suit is indicated as a whole by the numeral 1, and it is provided with arms 2, terminating in wrist bands 3; and is further provided with legs 4, terminating in portions 5, for incasing the wearer's feet. These feet-incasing portions may be pro-

vided with metal soles to serve as ballast to retain the suit and the wearer in upright position. The entire suit is of course made of some flexible waterproof material, such as rubber, and may be lined with cloth to promote the comfort of the wearer. The body of the suit is provided with three circumferential chambers shown at 6, 7 and 8, the chamber 6 being for the reception of oxygen; the chamber 7 for the reception of air, and the chamber 8 for the reception of liquid food. The chamber 8 is provided with a conduit 9 which leads upward along the interior of the suit and terminates adjacent the wearer's mouth; and the chamber 6 is provided with an outlet port 10 and a conduit 11 having a port 12 therein which registers with the port 10. This conduit 11 slides in a socket 13, and between the lower end of the conduit 12 and the bottom of the socket is a spring 14, this spring normally being under tension to draw down the conduit 11 and keep the ports 10 and 12 out of registry. The upper end of the conduit 11 likewise terminates adjacent the mouth of the wearer, and when he desires to obtain oxygen he merely takes the end of the conduit between his teeth and pulls upward upon the same by moving his head until the ports 10 and 12 are brought into registry.

15 is a band by means of which the ends of the conduits 9 and 11 are held against the wearer's chin.

16 are suitable attachments secured to the shoulders of the suit to increase the buoyancy thereof, and may be made hollow or may be of some light material, such as cork; and 17 are webs which are attached to the body portion adjacent the chambers 6, 7 and 8, and provided with fastening devices along their outer edges to enable them to be secured to the insides of the arms 2. These webs may be rolled up as indicated at the right of Fig. 1, or unrolled and fastened to the arms, as indicated at the left of this figure, to enable the swimmer to use these webs to propel himself forward in the water.

The suit is divided from the neck a certain distance downward, as shown at 18, in front and back, to enable the swimmer to readily don the same; and after the suit has been put on in this way the edges of the divided portions are then secured together, being pro-

vided with a particular kind of lining to make a water-tight joint. The cloth forming the upper part of the body 1 is split along the edges of the divisions 18, as shown at 19 in Fig. 5, and the inner edges of these split portions are connected by means of flexible webs 20. To the inner and outer of both of the split portions 19 are secured corrugated strips 21. A packing strip 22 is located between these corrugated strips to prevent the passage of water. The corrugated strips 21 are hinged together at the bottom as shown at 23, and they are provided with perforations 24 which pass through the same and through the strip 22.

25 are pins having down-turned ends in the form of hooks passing through the apertures 24 and secured at their inner ends to a bar 26. This bar is located inside the suit and at its lower end it is engaged by a spring which acts to pull the bar down. When drawn down to its lowermost position the hooked ends of the pins 25 terminate below the edges of the apertures 24, as shown particularly in Fig. 6, and the effect is to hold the corrugated strips with the packing strip 22 between them tightly together, making a watertight formation. This construction is the same at the front and back, as shown in Fig. 4.

The upper end of each of the strips 21 is rabbeted, and one side of each rabbeted portion is screw-threaded as shown at 28. To each of the strips 21 at one side of the front and back is connected one-half of a collar 29, this collar being screw-threaded over its outer curved surface, as shown in Fig. 6, to enable the helmet 30 to be put in place thereon. The helmet may be provided with a signal in the form of a flag 31, to attract attention in the daytime, or an electric lamp 32, which may be lighted up by means of a battery and switch, not shown, and serve instead of the flag 31 at night. The helmet is further provided with a door 33 in front, having eye-holes closed by some transparent medium at 34, and another aperture closed by some transparent medium opposite the wearer's mouth, as shown at 35. 36 are similar apertures closed by pieces of glass adjacent the wearer's ears.

The construction above described is adapted to be used in connection with my improvement in submarine rescuing apparatus shown and described in my co-pending application, Serial No. 633,020, filed June 14, 1911 and allowed March 8, 1912, and many of the above features of my improved swimming suit are disclosed in this aforesaid application.

In practice, the submarine vessel will be provided with a number of my improved swimming suits to enable one to be assigned to each member of the crew. In case of accident each member of the crew will put on

his swimming suit, first detaching the helmet 30 and opening the same at the top by pulling the rod 26 to bring the hooks 25 into registry with the apertures 24, and then swinging the strips 21 apart, withdrawing the hooks 25 from the apertures 24. After putting on the suit the wearer again raises the rod 26 and moves the strips 21 by hand to bring them together. This causes the hooks 25 to pass through the apertures 24, and when the rod 26 is released the spring 27 pulls the same down, causing the lower ends of the hooks to pass over the edges of the apertures 24 in the opposite strip 21, and hold the two strips 21 with the packing strip 22 between them tightly together. He next puts the helmet 30 over his head and screws the same upon the threaded collar 29, and the helmet when in place will hold the halves of the collar 29 together and secure the strips 21 to each other, even though the rod 26 should get temporarily displaced. In this way the suit will always be sealed against the entrance of water and never get opened until the helmet is taken off.

The door 33 is of course provided with a gasket around its edges to pack the same, and any approved form of catch may be used so that the wearer of the suit may swing it open after reaching the surface. After donning the suit the wearer makes his exit from the submarine, and once outside the hull of the disabled vessel the buoyancy of the members 16 and of the air and oxygen in the chambers 6 and 8 cause him to rise to the surface. He can now float around for several days if not picked up sooner, and if not too far off shore he may swim to land, using the web 17 for this purpose. Enough oxygen and liquid food may be stored in the chambers 6 and 8 to sustain him a considerable period in case he is not picked up at once.

My improved swimming suit, while it is not primarily for use in connection with submarine craft, may be also worn by aviators as a precaution against drowning in case of accident to the flying machine when above bodies of water. For this purpose the construction thereof is made as light as consistent with efficiency and durability, and when worn for such purposes the door 33 will of course always be kept open until an accident happens. Then all the aviator has to do is to snap the door 33 shut before he strikes the surface of the water, in order to avoid drowning.

The chambers 6, 7 and 8 can of course be filled by means of nipples having screw-threaded caps thereon, as shown in Fig. 1, as will be readily understood.

If desired, the transparent bodies 34, which form the eye holes, and the parts 35 and 36 as well, may have screw-threaded engagement with the helmet, so that they can

be unscrewed by the wearer to provide openings in the helmet without opening the door 33.

I wish to have it understood that the above description and drawings to which the same refers illustrate but one embodiment of my invention, and that I do not care to be limited to the details thereof, but wish to reserve to myself the right to make such changes in the shape, size and arrangement of the parts as fairly fall within the scope and spirit of my invention.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In a device of the kind described, the combination of a body having a chamber, a socket inside of said body adjacent said chamber, a conduit having one end received in said socket, said conduit and one wall of said chamber having registering apertures, resilient means engaging the lower end of said conduit to hold the same in position to keep said apertures out of registry, and a helmet secured to the said body receiving the other end of said conduit.

2. In a device of the kind described, the combination of a body having separated edges extending downward from the top thereof at the front and back, interfitting means secured along said edges to enable said edges to make a tight joint with each other, collar sections secured to the top of said body and joined to the outer ends of said interfitting means, and a helmet having means for engaging said collar sections.

3. In a device of the kind described, a body having separated edges to enable the same to be opened at the top, said edges being split longitudinally, and a web connecting the inner split portions of said edges.

4. In a device of the kind described, the combination of a body having divided edges to enable the same to be opened at the top thereof, said edges being split longitudinally, said split portions being turned inward and outward, interengaging strips secured to the intumed and out-turned split portions of each of said edges, and means for holding said strips in engagement with each other.

5. In a device of the kind described, the combination of a body having divided edges to enable the same to be opened, said edges being split longitudinally, corrugated strips secured to the split portions of each of said edges, a packing strip located between the said corrugated strips, said strips all having registering apertures, a spring-actuated bar located inside of said body, and hooks carried by said bar to pass through said apertures and hold the strips in engagement with one another, said spring moving said

bar to cause the hooks to engage the edges of the apertures in one of said strips to hold all the strips together.

6. In a device of the kind described, a body having separated edges to enable the same to be opened, said edges being split longitudinally, and interfitting means connected to said split edges to close the body.

7. In a device of the kind described, the combination of a body having separated edges at the front and back, and collar sections secured to the top of the body, the ends of said sections coinciding with said edges, whereby when said sections are held end to end with each other a helmet can be fastened upon the body.

8. In a device of the kind described, the combination of a body having divided edges to enable the same to be opened, a plate having longitudinal corrugations secured to each of said edges, and means carried by said body for engaging said plates and locking the same together in interfitting engagement to close the body.

9. In a device of the kind described, the combination of a body having divided edges to enable the same to be opened, and a corrugated plate secured to each of said edges, said plates being designed to have interfitting engagement with each other to close the body, and each of said plates being rabbeted adjacent the outer end of the edges to enable a helmet to be screwed upon said body.

10. In a device of the kind described, the combination of a body having divided edges to enable the same to be opened, a corrugated plate secured to each of said divided edges, said plates being designed to have interfitting engagement with each other to close the body, said plates having registering openings therethrough, a bar having hooks to project through said openings, and means for moving said bar and said hooks after the said hooks are in projecting position, to cause the hooks to engage the edges of the openings in one of said plates and secure said plates in engagement with each other.

11. The combination of a body having divided edges to enable the same to be opened, and collar sections secured to the top of the body, each section having one end coinciding with one of the edges, whereby when the said sections have their adjacent ends brought together a helmet can be slipped upon the sections and fastened to the body.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SAMUEL ROTH.

Witnesses:

WILLIAM F. NICKEL,
PHILIP D. ROLLHAUS.