

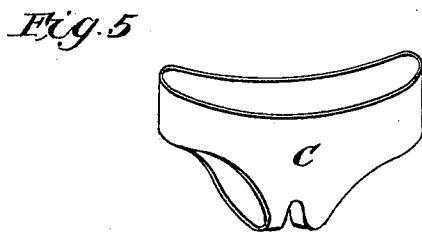
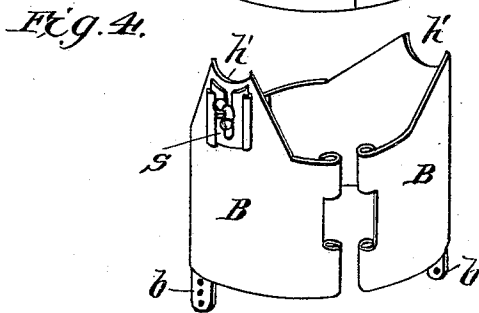
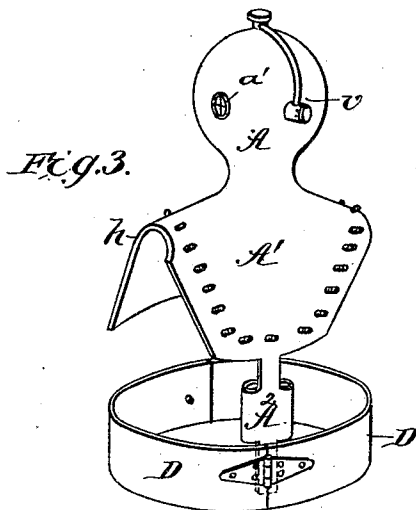
(No Model.)

2 Sheets—Sheet 2.

J. L. BOUCHER, E. H. BRAULT & R. FILTEAU.
DIVING SUIT.

No. 463,477.

Patented Nov. 17, 1891.



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UNITED STATES PATENT OFFICE.

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WEST SUPERIOR, WISCONSIN.

DIVING-SUIT.

SPECIFICATION forming part of Letters Patent No. 463,477, dated November 17, 1891.

Application filed June 27, 1891. Serial No. 397,717. (No model.)

To all whom it may concern:

Be it known that we, JOSEPH L. BOUCHER, EMERY H. BRAULT, and ROMUALD FILTEAU, residing at West Superior, Douglas county, in the State of Wisconsin, have invented a new and Improved Diving-Suit, of which the following is a specification.

The object of our invention is to provide a diving-suit which shall be applicable to working under water at unusual depths. With the ordinary diving-suit the pressure of the water on the body and limbs increases in such a ratio as the diver descends that it is not practical to work at a greater depth than about forty feet. This pressure of water not only encumbers the limbs and body in a mechanical way, but by collapsing the suit so reduces the air-space as to make breathing difficult and produces headache and bleeding at the nose.

Our invention is designed to provide an armor to be worn under the rubber suit, which not only gives greater air-space, but prevents the pressure of the water from interfering with the comfort and use of the limbs and body, thus enabling the diver to work at double the ordinary depth.

Figure 1 is a front view of the diving-armor. Fig. 2 is a side view of the same. Figs. 3, 4, and 5 are rear views of the detached parts of the body of the armor, and Fig. 6 is a detail of the adjustable armhole-slide.

In the drawings, AA' represent the helmet and shoulder-piece, which, as shown, is formed in one piece. In the same piece with the shoulder-section A' is formed a backbone-extension A². To this backbone is hinged the two folding body portions B B, which close together in front like doors and are secured by straps or catches c.

In the shoulder-pieces A' are formed half-round openings h, which, together with the half-round openings h' in the body portion, form the armholes.

S are adjustable slides in the body portion for increasing or diminishing the size of the armholes.

C is the trunk or crotch-piece, which is articulated at the waist-line, being pivoted to lugs b, depending from the body-section. This

crotch-piece has two leg-holes at its bottom, to the sides of which are jointed the longitudinal braces F, which at the knee are articulated to other leg-braces F'. Within these braces and riveted to the same are numerous rims or ribs f, which serve to hold the leg portions of the suit distended against the pressure of the water.

To the bottoms of the leg-braces F' F' are pivoted stirrups f', upon which the feet of the diver rest.

To the shoulder-pieces A' are jointed at the armholes articulated arm-braces E E', with distending rings e, constructed and arranged in a manner similar to the leg-sections.

At the waist-line, in front, the upper edge of the crotch-piece C and the lower edge of the body B do not come together, but are cut away to permit the bending of the body forward. This opening is covered by a metallic belt-section D, made in two parts and hinged at the rear.

Over all the armor except the helmet and shoulder-piece A' is applied a rubber covering K, which is tightly fastened by buttons or clamps p along the edge of the shoulder-piece, so as to make the armor perfectly water-tight.

In the helmet are formed the usual glazed sight-windows a and a', which are provided with protecting-guards.

G is the fresh-air pipe, which connects with the shoulder-piece A' and passes under one of the arms, so as to be out of the way in working.

In the back of the helmet is arranged the escape-valve v for foul air.

To facilitate communication between the diver and his assistants above, we apply a speaking-tube a², which at its lower end connects with and is firmly attached to the helmet. In case the air-tube G becomes broken or obstructed this speaking-tube may be used for supplying the diver with air.

Upon the top of the helmet is mounted an incandescent electric lamp a³, which is surrounded by a protecting-cage of stout wire. This lamp may be illuminated either by circuit-wires from above or by a small storage-battery within the armor. By means of this

lamp the diver is enabled to intelligently work in the intense darkness of the lower depths.

5 In modifying our invention the helmet may be screwed onto the shoulder-piece and the crotch-piece C may be made in two or more parts, if desired.

Any desired metal may be used in constructing the armor.

10 For connecting the body-section B to the crotch-piece C the lugs *b* are made long and are provided with a series of holes, by which provision the armor is adapted to different lengths of men's bodies.

15 Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. A diving-armor having its body portion made in two hinged halves working about a 20 vertical axis, substantially as shown and described.

2. The combination, with the shoulder-piece A', having a backbone-extension A², of two 25 body-sections B B, hinged to the backbone, substantially as shown and described.

3. The combination of the shoulder-piece

A', the body portions B B, hinged about a vertical axis, the crotch-piece C, hinged to the body portion, and the waist-band D, covering the joint between the crotch and body portions. 30

4. A diving-armor having longitudinal articulated limb-braces and circular rings or ribs attached thereto, substantially as shown and described. 35

5. The body-section B, having an adjustable slide for increasing or diminishing the size of the armholes, as described.

6. The combination of the crotch C and the body-section, the two having an articulated 40 connection with a vertical adjustment, substantially as shown and described.

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