

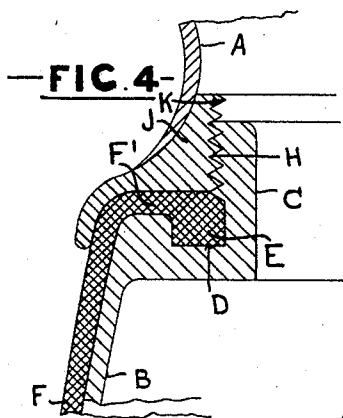
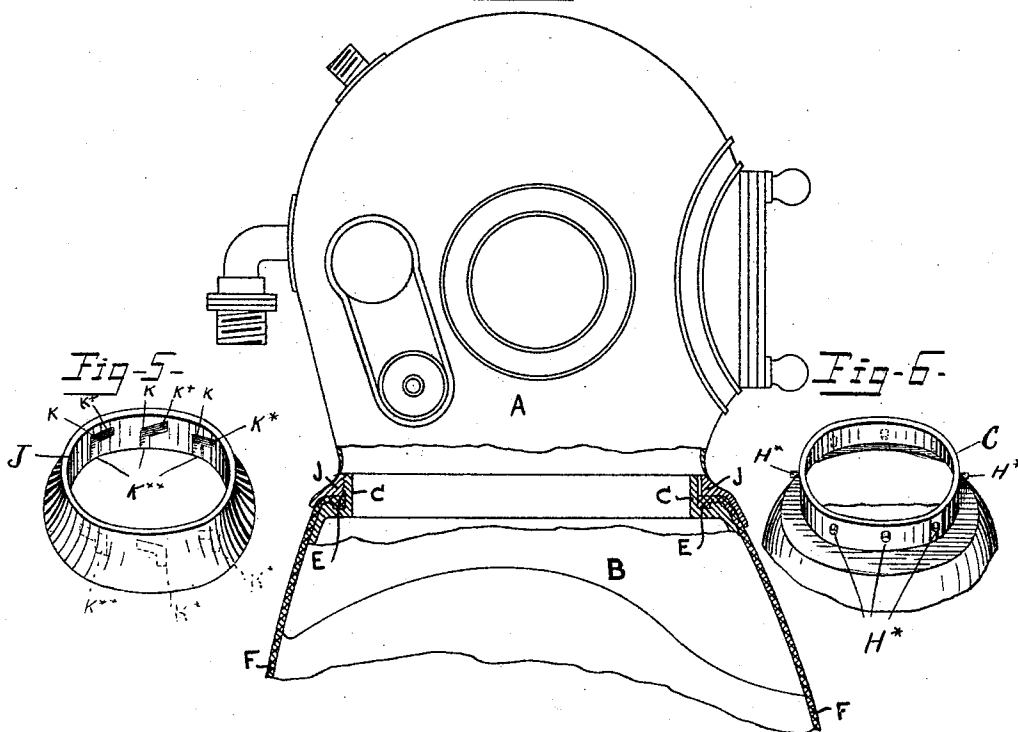
(No Model.)

A. E. STOVE.
DIVING DRESS AND HELMET.

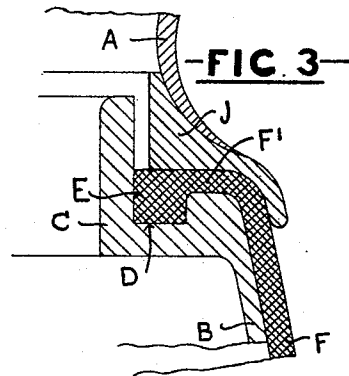
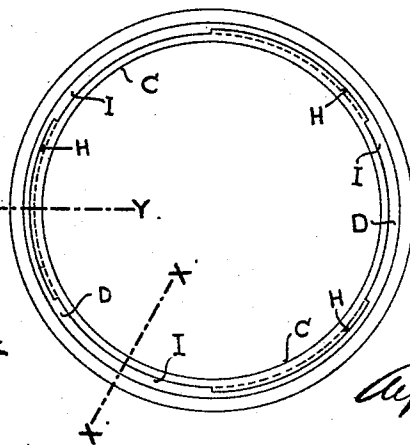
No. 484,885.

Patented Oct. 25, 1892.

—FIG. 1—



—FIG. 2—



Witnesses—
Stephen Edward Gwynon
Joseph Ellis

Inventor—
Alfred Edwin Stove

UNITED STATES PATENT OFFICE.

ALFRED EDWIN STOVE, OF LONDON, ENGLAND.

DIVING DRESS AND HELMET.

SPECIFICATION forming part of Letters Patent No. 484,885, dated October 25, 1892.

Application filed November 28, 1891. Serial No. 413,448. (No model.)

To all whom it may concern:

Be it known that I, ALFRED EDWIN STOVE, submarine engineer, a subject of the Queen of Great Britain, residing at 14 Griffin Street, 5 York Road, Lambeth, London, in the county of Surrey and Kingdom of Great Britain, have invented an Improvement in Diving Dresses and Helmets, of which the following is a specification.

10 This invention relates to an improvement in the means of attaching the helmet and breast-plate to the upper part or collar of a diving-dress, forming the subject of a patent granted to me and dated September 1, 1891, 15 No. 458,750.

In the accompanying drawings, Figure 1 is a side elevation of a diving-helmet and breast-plate and the upper part of a diving-dress with portions of the helmet and breast-plate 20 broken away, so as to show the connecting parts in section. Fig. 2 is a plan of the upper part or collar of the breast-plate with the helmet and dress removed. Figs. 3 and 4 are enlargements of the sections of the joint 25 shown in Fig. 1, and correspond, respectively, to sections taken on the lines X X and Y Y of Fig. 2; and Figs. 5 and 6 are perspective views showing a further modification.

Similar letters relate to like parts in all of 30 the figures.

In the arrangement and construction of diving-dress, helmet, and breast-plate of the kind described in the specification of my aforesaid patent and illustrated in the drawings annexed thereto the upper end of the diving-dress is placed inside of the breast-plate, and it has been found in practice that especially when the apparatus is used at considerable depths below the surface of the water the hydraulic pressure forces the dress against the chest of the diver and impedes respiration whenever the proper pressure of air inside the dress and helmet is not maintained. In order to obviate this inconvenience, I, according to my present invention, place the upper 45 part of the dress outside the breast-plate, so that any excessive external pressure is resisted thereby and prevented from acting on the diver's chest. In carrying out this arrangement I make the upper part or collar of the dress with an india-rubber flange projecting inward, the said flange being preferably

provided with a fillet or lip, which takes into the recess or groove formed in the upper ring or flange of the breast-plate. 55

A is the helmet, and B the breast-plate; C, a circular metallic ring, forming the upper part or collar of the breast-plate and having a groove D formed therein to receive the fillet or lip E, surrounding the india-rubber flanged 60 upper part or collar F' of the dress F. The ring C is rabbeted out, as shown, and has a screw-thread H formed in the vertical side of the said rabbet. This screw-thread is cut away at three or more points equidistant 65 around the circumference of the rabbet, as illustrated at I in Fig. 2.

J is a circular metallic ring formed with or brazed to the lower part of the helmet and having a screw-thread K formed on it corresponding to the screw-thread H in the ring C. The screw-thread K on the ring J is cut away at three or more points equidistant around the periphery corresponding to the parts of the thread H in the ring C which have been 75 cut away.

It will now be understood that when it is desired to effect the connection of the helmet to the dress and breast-plate the upper part or collar F' of the dress F is placed in position in the ring C, so that the fillet E enters the groove D, as shown. The helmet is then placed with its ring J in the rabbet of the ring C by passing the portions of the screw-thread K which remain on the ring J into the spaces I in the screw-thread H of the ring C, the parts of the screw-thread H on the ring C which have not been cut away corresponding with those parts on the ring J where the thread K has been cut away. The helmet is then 90 turned round about a sixth of a revolution in or on the ring C, so that the screw-threads H and K engage with one another, causing the ring J to squeeze the upper flanged part F' of the dress F firmly between itself and the ring C, so as to form a water-tight joint. The fillet E of the dress F, being pressed into the groove D, effectually prevents the collar of the said dress from being drawn out from between the rings C and J; but in some cases the fillet E 100 may be dispensed with, if desired. When it is desired to remove the helmet, it is only necessary to turn it back about a sixth of a revolution until the screw-threads on the ring

J become disengaged from those on the ring C, when the helmet can be lifted out of the latter.

Instead of the screw-threads H and K, as shown and described with reference to Figs. 1 and 4, the arrangement illustrated in Fig. 5 may be employed, in which H* is a pin or projection formed on the external surface of the ring C of the breast-plate B, and K* is a recess formed on the internal periphery of the ring J of the helmet. The joint is made in this case by passing the pin or projection H* of the recess K over the pin or projection H*, by which the latter is allowed to enter the recess K*. The helmet is then turned round, so as to bring the pin or projection H* into the recess K*, and the ring J is caused to compress the india-rubber flange F' by means of the slightly-inclined surface of the recess. It will be understood that instead of the pin or projection H* being formed on the ring C of the breast-plate and the recess K* in the ring J of the helmet the pin or projection may be formed on the ring J of the helmet and the recess in the ring C of the breast-plate. Any convenient number of such bayonet-joints may be employed in connection with one helmet and breast-plate. In the figure the breast-plate is shown inside the dress, as in the other figures of the drawings; but it will be understood that this modification of joint is equally applicable in cases where the breast-plate is outside the dress, as

in my patent of earlier date, hereinbefore referred to. In the figure the joint is shown in section, and in elevation in dotted lines.

I claim—

1. In a diving-suit, the combination, with the helmet, of the breast-plate provided with a groove, inwardly-projecting flange on the collar of the dress, and a lip on said flange, said groove adapted to be engaged by said lip, substantially as set forth.

2. In a diving-suit, the combination, with the helmet, of the breast-plate provided with a groove, inwardly-projecting flange on the collar of the dress, a lip on said flange, said groove adapted to be engaged by said lip, exterior screw-threads on said breast-plate, said screw-threads being divided into sections, and interior screw-threads on said helmet, said screw-threads being divided into sections, and said screw-threads adapted to engage with each other to bind the flanged collar of the dress tightly upon the breast-plate, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

ALFRED EDWIN STOVE.

Witnesses:

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