

G. STOLLE.
SUBMERSION CONTROL FOR DIVERS' ARMOR WITH FLEXED MEMBERS.
APPLICATION FILED MAY 20, 1914.

1,245,058.

Patented Oct. 30, 1917.

Fig. 1.

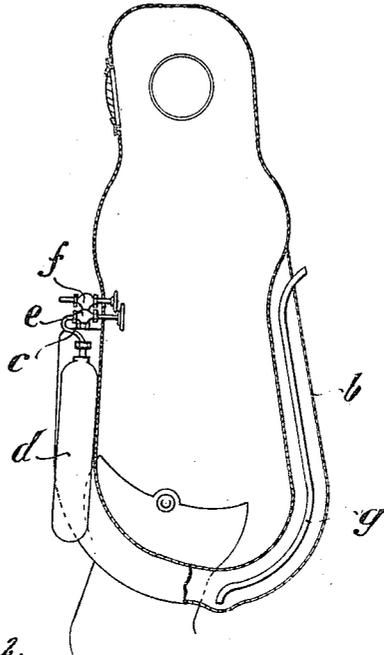
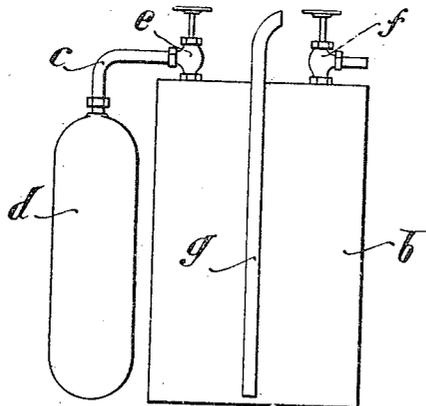


Fig. 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

GEORG STOLLE, OF KIEL, GERMANY.

SUBMERSION CONTROL FOR DIVERS' ARMOR WITH FLEXED MEMBERS.

1,245,058.

Specification of Letters Patent.

Patented Oct. 30, 1917.

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To all whom it may concern:

Be it known that I, GEORG STOLLE, a citizen of the German Empire, residing at Kiel, in the Kingdom of Prussia, Germany, Werk
5 Revensberg am Habsburger Ring, have invented certain new and useful Improvements in Submersion Controls for Divers' Armor with Flexed Members, of which the following is a specification.

10 In divers' suits of flexible materials the ascensional power of the diver may easily be varied by varying the gas charge inside the suit, but this means for producing a
15 variable ascensional power which is so valuable for the diver encounters considerable difficulties when applied to non-elastic metal clothes so-called divers' armor. In such
20 case the diver can indeed retard the ascent by the attachment of weights and accelerate it by releasing the weights, but a regulation of the depth of immersion and a further descent after the weights have been thrown
25 off is not possible. The diver then must necessarily again be raised to the water level.

The present invention therefore relates to an arrangement applicable to armored diving suits by which the ascent can be regulated at will. For this purpose a vessel is
30 provided on the diving device the gas contents of which can be altered at will by the diver so that the volume of the vessel increases or diminishes corresponding to the charge. If the vessel is itself rigid the gas
35 leaving the vessel may be displaced by liquid to increase the descent or vice versa. In the first case the vessel is for instance made out of parts telescoping one within the other or is in the form of an air bellows.
40 The change of volume at constant weight operates the change in the descent, while in the latter case in which the container is rigidly connected with the diving device the variable liquid weight in this container produces the alteration in the ascent conditions. The operation of the valves necessary for the functioning of the device may usually take place from the inside of the diving device, which will for this purpose
45 be made in the usual manner so that the diver can draw his arms into the interior of the diving device and move freely therein.

The invention is more particularly described with reference to the drawing illustrating various forms of construction by
55 way of example.

Figure 1 is a sectional elevation of a diving device according to my invention. Fig. 2 illustrates, diagrammatically, the control arrangement.

60 Referring to the drawings, a container *b* is shown as directly connected with a diving device and extends from the rear side of the device downward between the jointed members along the front side of the device extending upward. At this latter point, preferably on both sides, a compressed gas bottle
65 *d* is arranged each of which is connected with the container *b* by means of a pipe *c*. The container *b* along its complete height 70 has a tube *g* passed through it, which allows liquid to pass into and out of the container. Further, valves *e* are arranged on the container controlling the gas inlet and the valve *f* controlling the gas outlet, both of
75 which can be controlled from the inside of the diving device.

The operation of this device is as follows:—

80 When the diver is sinking the container *b* will be filled with water so that the greatest descending power is obtained. If the diver desires after he has reached a predetermined depth again to rise he will allow compressed gas to flow into the container *b* through the
85 valve *e*, whereupon the water therein will be displaced and compressed gas will take its place so that the descent will be changed into an ascent and consequently the diver will rise. If when the rising movement is
90 completed a sinking is desired then the gas outlet *f* is opened and consequently again water will enter.

By consequent control of both valves it is possible for the diver to adjust himself to
95 any desired depth by controlling the contents of the container *b* correspondingly to the wished for depth of submersion.

I declare that what I claim is:—

1. A diving device comprising a rigid
100 diving dress; a rigid buoyant chamber attached thereto and separated from communication with the interior thereof; a compressed air tank separate from the interior of the diving dress; a discharge pipe connecting the lower part of the interior of the chamber with the exterior; an exhaust
105 pipe in the upper part of the chamber; a connecting pipe connecting the interior of the tank with the interior of the chamber; and valves in the connecting pipe and the exhaust pipe.

2. A diving device comprising a rigid diving dress; a rigid buoyant chamber attached thereto and separated from communication with the interior thereof, said chamber comprising one compartment; a compressed air tank separate from the interior of the diving dress; a discharge pipe connecting the lower part of the interior of the chamber with the exterior; an exhaust pipe in the upper part of the chamber; a connecting pipe connecting the interior of the tank with the interior of the chamber; and valves in the connecting pipe and the exhaust pipe.
3. A diving device comprising a rigid diving dress; a rigid buoyant chamber attached thereto and separated from communication with the interior thereof and passing between the legs thereof; a compressed air tank separate from the interior of the diving dress; a discharge pipe connecting the lower part of the interior of the chamber with the exterior; an exhaust pipe in the upper part of the chamber; a connecting pipe connecting the interior of the tank with the interior of the chamber; and valves in said connecting pipe and said exhaust pipe and operable from the interior of said dress.

In testimony whereof I affix my signature, in presence of two witnesses.

GEORG STOLLE.

Witnesses:

JULIUS RÖPKE,
KARLFRIEDRICH FRUGUT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."