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SHALLOW WATER DIVING FACE PLATE

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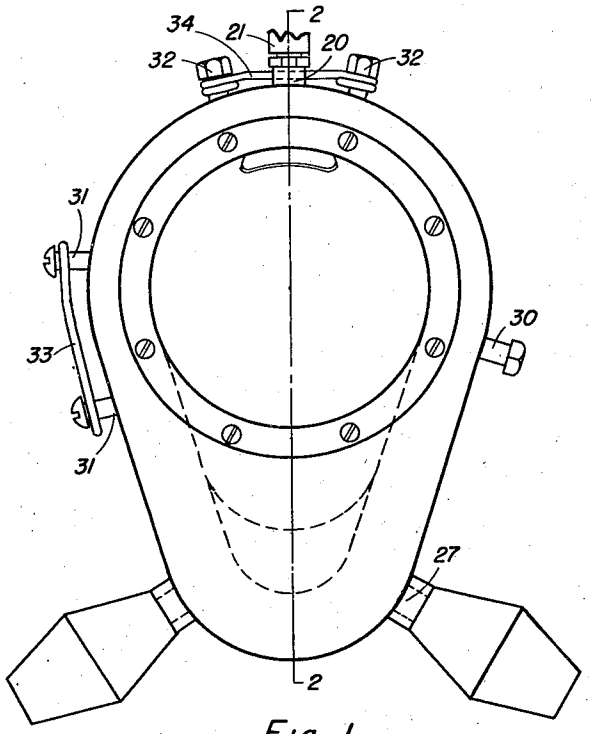


Fig. 1

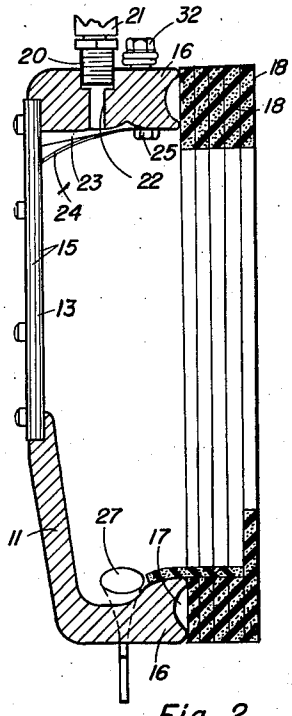


Fig. 2

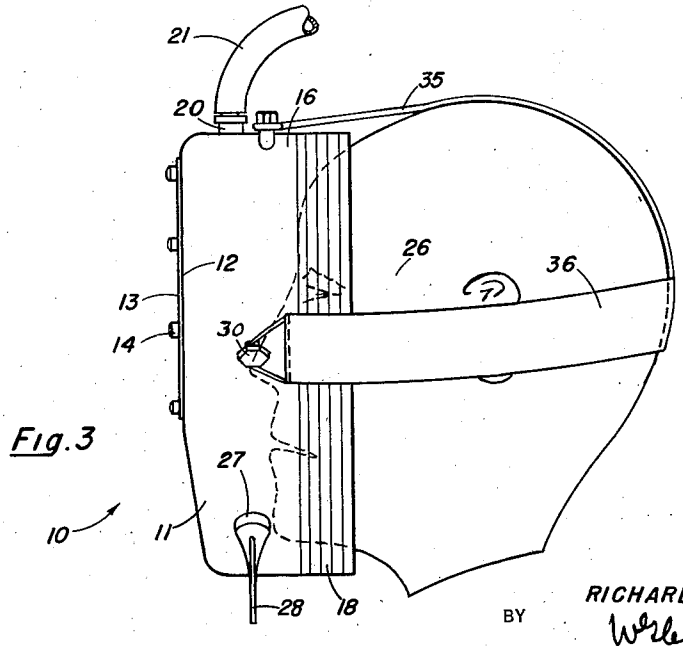


Fig. 3

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SHALLOW WATER DIVING FACEPLATE

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Application October 8, 1940, Serial No. 360,301

3 Claims. (Cl. 128—142)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

This invention relates to a diver's mask, and has for an object to provide a diving helmet or hood in the form of a mask adapted to be placed against the face of the wearer and have water-tight connection therewith, the mask being held in position by suitable means and having an inlet or hose connection for fresh air, preferably at the top thereof, and having an outlet for foul air, preferably at the bottom thereof, so that it may also dispose of any leakage or condensation, thus doing away with the necessity of using the ordinary diver's helmet which entirely enclosed the head and has to be attached to a suit, and further permitting the diver to turn his head readily in every direction without inconvenience.

A further object of this invention is to provide a diver's mask especially intended for shallow under-water work as well as for use in spaces or mediums devoid of respirable air, which is very simple in construction and may be readily applied or removed and which is extremely light in weight.

A further object of this invention is to provide a diver's mask wherein the foul air escape is so located at the bottom that any leakage will automatically dispose itself through the foul air escape, thereby avoiding any reduction in the volume of fresh air available to the diver.

With the foregoing and other objects in view, the invention consists in the construction, combination and arrangement of parts hereinafter described and illustrated in the drawing, in which:

Fig. 1 is a front elevational view of the diver's mask of this invention;

Fig. 2 is a sectional view on line 2—2 of Fig. 1; and

Fig. 3 is a side elevational view showing the mask mounted in operative position on the face of a diver.

There is shown at 10 the mask of this invention, including a plate 11, preferably of cast aluminum or of a suitable molded plastic material, shaped as shown, so as to more or less conform to the contour of the face, and provided in its upper portion with an opening 12 closed by a pane 13 of transparent material secured thereto as by stud screws 14 and provided with gaskets 15 so as to make the same substantially leakproof. The transparent pane 13 may be of glass, but would preferably be of transparent plastic waterproof material, which will not easily break as glass breaks.

The aluminum plate 11 is provided with a rearwardly extending flange 16 having a recessed groove 17 extending thereabout. Secured to this flange 16 about the groove 17 are half a dozen, more or less, layers of sponge rubber 18. Extending through the top of the flange 16 is a nipple 20 to which may be secured a flexible hose 21, the other end of which may be connected to a compressed air tank, or other suitable source of supply of fresh air. This nipple 20 is connected to a passage 22 leading to an air chute 23 which, as shown, consists of a one-way valve formed by a flexible flap 24 held in position against the upper inside of the flange 16 by a stud screw 25, thus permitting fresh air from the hose 21 to enter into the space between the inside of the mask 10 and the wearer's face 26, but preventing foul air from escaping therethough. The foul air instead makes its exit through either or both of the foul air outlets 27 provided on opposite sides of the bottom of flange 16 to which are connected conventional rubber flutter valves 28. These valves 28 permit foul air from the outlets 27 to pass therethrough but do not permit any water to enter in an opposite direction.

Also secured in the flange 16 but not penetrating therethrough are a plurality of studs 30, 31 and 32, providing head strap attachments, the studs 31 being connected by a band 33 and the studs 32 being similarly connected by a band 34 for securing the webbing 35 and 36 of a head strap harness thereto.

In operation, the mask 10 is placed against the face 26 of a diver with the layers of sponge rubber 18 compressing more or less, as necessary, so as to make a water-tight connection between the diver's face and the mask, the head strap harness 36 being fastened to the stud 30 so as to firmly hold the mask in position. With a suitable source of fresh air connected to the other end of the hose 21, the diver may descend into shallow water a limited distance, such as for cleaning the bottoms and drains of swimming pools or making inspection and repairs to the bottom of a ship or vessel, the hose 21 being of a suitable length, possibly fifty feet or more, to allow the diver a suitable amount of freedom in his motion under water, even though he may not travel vertically downward a great distance.

Other modifications and changes in the number and arrangement of the parts may be made by those skilled in the art without departing from the nature of the invention, within the scope of what is hereinafter claimed.

The invention described herein may be manufactured and/or used by or for the Government of the United States of America for governmental

purposes without the payment of any royalties thereon or therefor.

What is claimed is:

1. A diver's mask formed of a sheet of substantially rigid material, said sheet having an inwardly extending flange around its perimeter, a groove recessed into the edge of said inwardly extending flange, and a sponge rubber gasket bridging said groove and attached along the outer edges only of said groove and bearing against the face of the wearer, means extending from said flange engaging over the head of the wearer for holding the mask pressed against the face of the wearer, one-way means for supplying air to the space enclosed within the mask and one-way means for removing the foul air and any leakage and condensation therefrom, said foul air and condensation removing means including a trough formed in the bottom of the flange, an outlet through said flange to said trough, and a one-way flutter valve connected to said outlet.

2. A diver's mask formed of a sheet of substantially rigid material, said sheet having an inwardly extending flange around its perimeter, a groove formed in the edge of said inwardly extending flange, and a sponge rubber gasket bridging said groove and attached along the outer edges only of said groove and bearing against the face of the wearer, means extending from said flange engaging over the head of the wearer for holding the mask pressed against the face of the wearer, one-way means for supplying air to the space enclosed within the mask, one-way means for removing the foul air and any leakage and condensation therefrom, said foul air and condensation removing means including a trough formed in the bottom of the flange, an outlet through said flange to said trough, and a one-way flutter valve connected to said outlet, said one-way means for supplying air to the enclosed space comprising a fresh air hose, a nipple attached to said mask through the top of said flange, and a one-way valve attached to the inside of said flange adjacent said nipple permitting air to travel only from said nipple to the enclosed space.

3. A diver's mask formed of a sheet of substantially rigid material, said sheet having an inwardly extending flange around its perimeter, a groove formed in the edge of said inwardly extending flange, and a sponge rubber gasket bridging said groove and attached along the outer edges only of said groove and bearing against the face of the wearer, means extending from said flange engaging over the head of the wearer for holding the mask pressed against the face of the wearer, one-way means for supplying air to the space enclosed within the mask, one-way means for removing the foul air and any leakage and condensation therefrom, said foul air leakage and condensation one-way means comprising a trough formed at the bottom of said flange, an outlet extending through said flange to said trough, and a one-way flutter valve connected to said outlet.

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