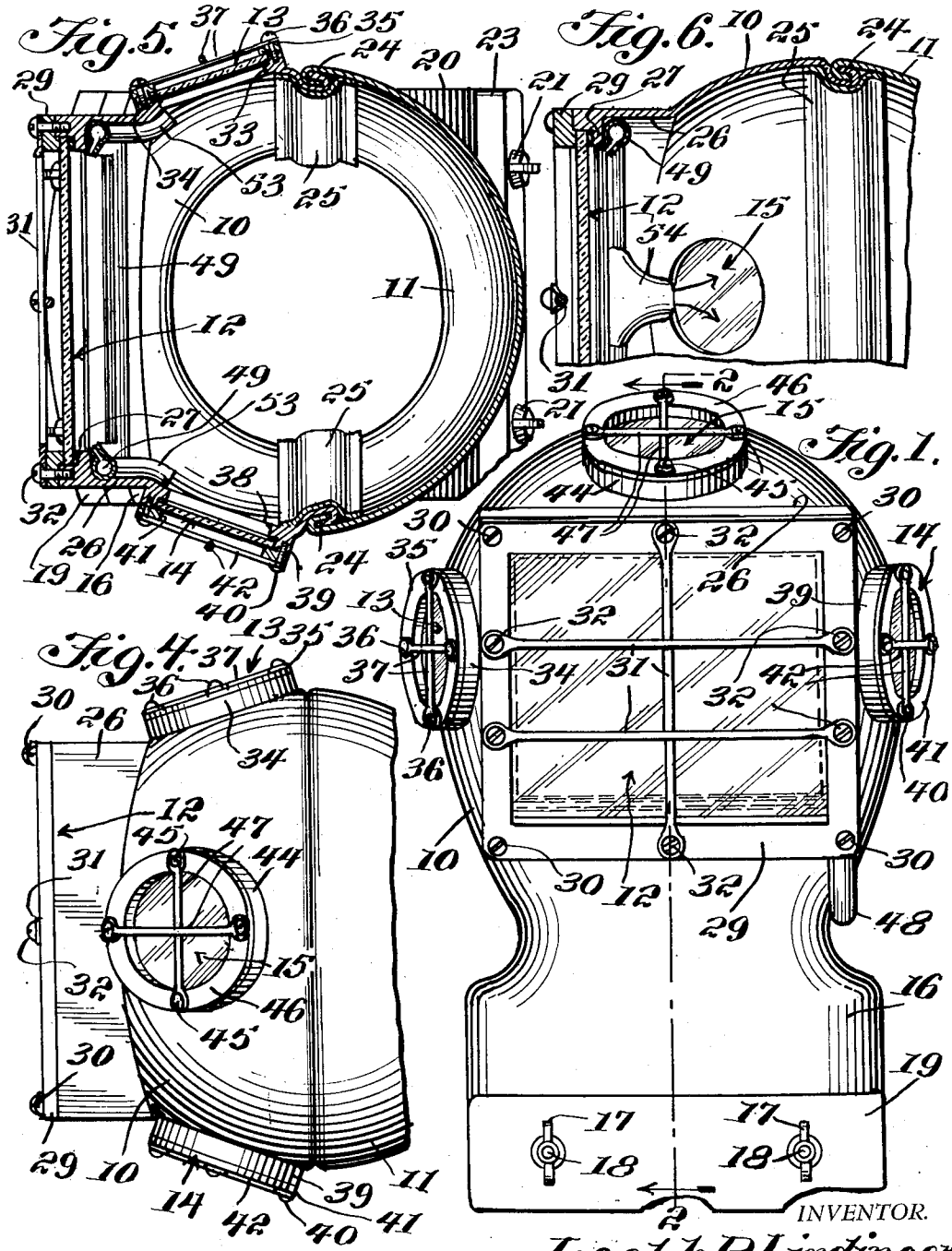
Nov. 18, 1952 J. R. LINDINGER 2,618,262

SHALLOW-WATER DIVING HELMET

Filed July 26, 1951 2 SHEETS—SHEET 1



INVENTOR.
Joseph R. Lindinger,
BY Victor J. Evans & Co.
ATTORNEYS

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SHALLOW-WATER DIVING HELMET

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Fig. 2.

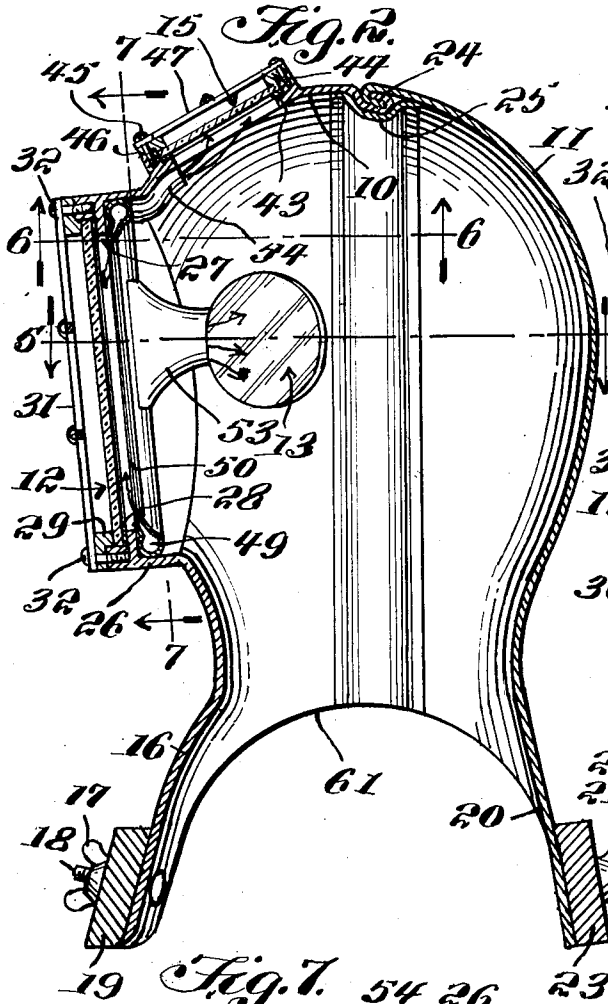


Fig. 3.

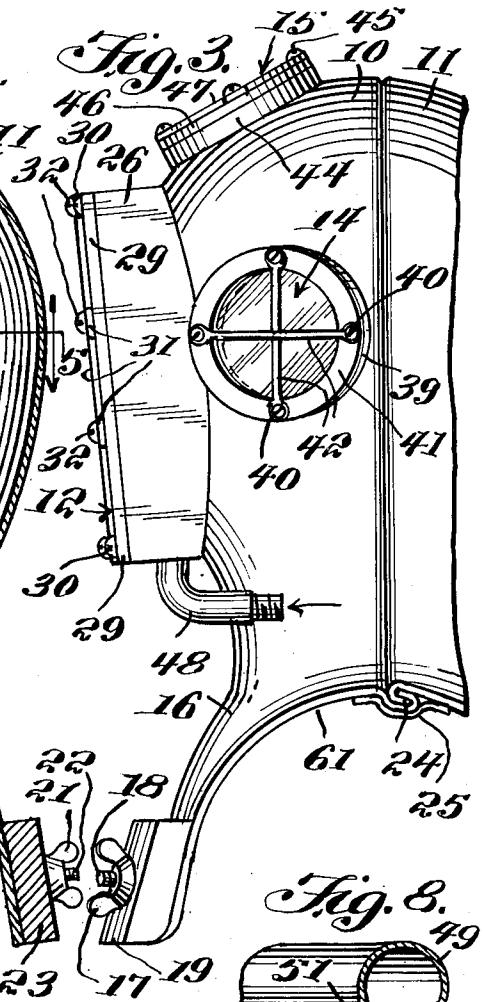


Fig. 7.

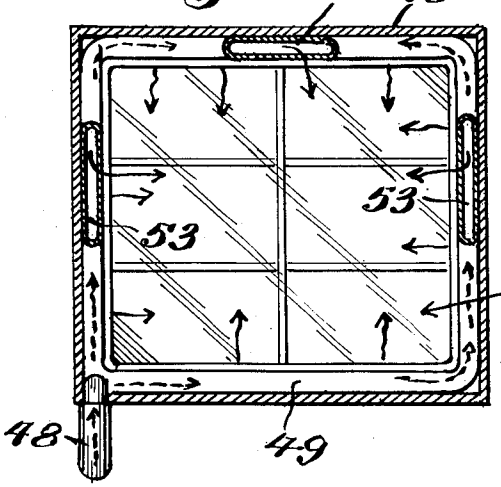


Fig. 8.

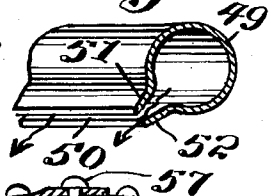
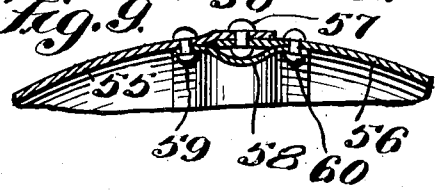


Fig. 9.



INVENTOR.

Joseph R. Lindinger,

BY Victor J. Evans & Co.

ATTORNEYS

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SHALLOW-WATER DIVING HELMET

Joseph R. Lindinger, Miami, Fla.

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5 Claims. (Cl. 128—142)

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This invention relates to diving helmets of the type particularly adapted for use in shallow water, and in particular a diving helmet formed with two substantially semispherical sections and having a substantially rectangular shaped window in the front with additional windows in the sides and top, and in which an air supply connection, which extends to a duct or air channel extended continuously around the window in the front is provided at a comparatively low point so that upon failure of the air an air-cushion is provided in the upper part of the helmet with the water level positioned below the chin of the head of the diver in the helmet.

The purpose of this invention is to provide an improved helmet for divers wherein vision is provided through the sides and top as well as in the front and wherein an air cushion formed in the helmet, as in the result of an accident holds the water line at a comparatively low point.

In the conventional type of divers helmet a blast of air supplied under pressure to the helmet strikes the head of the diver and not only causes discomfort but also causes fogging due to changes of temperature. With this thought in mind this invention contemplates an air connection for divers helmets wherein air is injected through rows of openings on the four sides of a front window and also over side and top windows so that the blast of air is removed from the head of the diver and directed upon the inner surfaces of the windows of the helmet whereby the usual fogging resulting from breathing of the diver is continuously removed from the windows.

The object of this invention is, therefore, to provide an improved method of injecting air under pressure into the helmet of a diver whereby the blast of air is removed from the diver's head and directed against the inner surfaces of windows of the helmet.

Another object of the invention is to provide an improved divers helmet that is so constructed that the diver has comparative freedom of movement of his head so that he may look through front, side, and top windows of the helmet.

A further object of the invention is to provide an improved divers helmet wherein air is injected in small streams over the inner surfaces of windows of the helmet and in which the point of connection of the air hose to the helmet is below the chin of a diver wearing the helmet so that in an emergency an air cushion is provided in the helmet, and in which the helmet is of a comparatively simple and economical construction.

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With these and other objects and advantages in view the invention embodies a divers helmet formed with substantially semi-spherical front and rear sections with sealed and protected windows in the front, side, and top of the front section and with air supplied through a connection in the lower part of the front section and directed over the inner surfaces of the said windows.

Other features and advantages of the invention will appear from the following description taken in connection with the drawings wherein:

Figure 1 is a front elevational view showing the improved divers helmet.

Figure 2 is a vertical longitudinally disposed section taken on line 2—2 in Fig. 1 showing one side of the helmet.

Figure 3 is a side elevational view looking toward one side of the helmet and with the rear section thereof broken away.

Figure 4 is a plan view of the helmet with the rear section thereof broken away.

Figure 5 is a sectional plan through the helmet taken on line 5—5 of Fig. 2.

Figure 6 is a similar section looking upwardly taken on line 6—6 of Fig. 2.

Figure 7 is a vertical section taken on line 7—7 of Fig. 2 looking toward the inner surface of the front window of the helmet.

Figure 8 is a detail illustrating a section of an air duct extending around the inner surface of the front window of the helmet.

Figure 9 is a detail showing a section through meeting edges of the front and rear sections of the helmet illustrating a modification wherein the edges of the sections are riveted together and the joint is protected with an inner lining strip.

Referring now to the drawings wherein like reference characters denote corresponding parts the improved divers helmet of this invention includes a front semi-spherical section 10, a rear section 11, a front window 12, side windows 13 and 14 and an upper window 15.

The front section 10 is provided with a depending section 16 having a weight positioned

on the lower end and held in position with thumb nuts 17 on studs 18 which extend through a section 19.

The rear section 11 is provided with a similar extension 20 and the lower edge of the extension 20 is provided with a weight held with winged nuts 21 positioned on studs and carried by strips 23.

The front and rear sections are connected with an overlapped or Pittsburgh joint 24 and the inner surface of the joint is covered with a protecting lining strip 25.

The front window 12 is formed with a continuous frame 26 having an inwardly extended intermediate flange 27 upon which the glass of the window is mounted and the glass of the window is secured against a continuous sealing strip or gasket 28 by an outer frame 29 which is secured to the frame 26 by screws 30. Bars 31 are mounted on the outer surface of the frame 29 by screws 32 and it will be understood that any suitable number of bars may be used.

The glass of the window 13 is secured against a continuous flange 33 in a rim 34 by a frame 35 and the frame is held by screws 36 which also hold bars 37 over the outer part of the window.

The glass of the window 14 is secured against a flange 38 of a rim 39 with screws 40 which extend through a frame 41 and the screws 40 also hold bars 42 over the outer surface of the window.

The top window is formed in a similar manner with the glass 15 held against the continuous flange 43 of a rim 44 by screws 45 which extend through a frame 46 and the screws also hold bars 47 over the outer surface of the window.

The helmet is supplied with air through a connection 48 that opens into a continuous duct 49 that extends around the inner surface of the window 12 and the duct is provided with a continuous slit 50 formed between edges 51 and 52. By this means a continuous stream of air is supplied from the four sides of the window as illustrated in Fig. 7 and from this duct a connection or nozzle 53 carries air to the window 13, as shown in Fig. 2. A similar nozzle or connection is provided on the opposite side of the helmet for supplying air under pressure to the window 14 and, as illustrated in Figures 2 and 6, a nozzle or connection 54, which also extends from the duct 49, carries a stream of air over the inner surface of the upper window 15.

In the design illustrated in Fig. 9 a front section, similar to the section 10, and indicated by the numeral 55, is connected to a rear section 56 with rivets 57 which extend through overlapping edges of the sections, and this connection is covered with an inner lining strip 58, the edges of which are secured to the sections by rivets 59 and 60.

With the parts arranged in this manner the helmet is positioned over the head of the diver with the parts 16 and 20 which are flared outwardly coacting with the arcuate edges 61 of the side walls of the helmet fitted over the shoulders to comfortably support the weight of the helmet on the diver's shoulders.

With the parts in position and with air supplied to the helmet through the connection 48 a film of air is provided over the inner surfaces of the windows and with the helmet slightly larger than the head of the diver the diver is free to move his head to look through the front, top and side windows, as may be desired. By this means the diver is allowed to move his head in a far greater range in all directions and is, therefore, able to make more advantageous use of all vision ports or windows with greater comfort.

Furthermore, with the helmet formed in this manner a greater volume of air is available to the diver and sufficient space is provided for the installation of communicating devices in the helmet.

A straight glass in the front window provides most efficient vision, and, not being curved, the line of vision is not distorted.

It will be understood that modifications may be made in the design and the arrangements of the parts without departing from the spirit of the invention.

What is claimed is:

1. A diver's helmet comprising a substantially, spherical shell having front, top and side windows therein, an air duct having a discharge slit therein extended around the inner surface of said front window and with the slit therein positioned to discharge air over the inner surface of the window, nozzles positioned to discharge air over the inner surfaces of the said top and side windows and means for supplying air under pressure to the said duct and nozzles.

2. A diver's helmet comprising a substantially, spherical shell having front, top and side windows therein, an air duct having a discharge slit therein extended around the inner surface of said front window and with the slit therein positioned to discharge air over the inner surface of the window, nozzles positioned to discharge air over the inner surfaces of the said top and side windows, and an air supply connection for supplying air under pressure to said ducts and nozzles, said air supply connection connected to the helmet at a point in the lower part of the helmet.

3. A diver's helmet comprising a substantially spherical shell having front, top and side windows therein, an air duct having a discharge slit therein extended around the inner surface of said front window and with the slit therein positioned to discharge air over the inner surface of the window, nozzles positioned to discharge air over the inner surfaces of the said top and side windows, an air supply connection for supplying air under pressure to said ducts and nozzles, said air supply connection connected to the helmet at a point in the lower part of the helmet, said shell having depending extensions at the front and back, and front and back weights on the outer surfaces of the said extensions.

4. In a diver's helmet, the combination which comprises a split spherical shell having front and rear sections the meeting edges of which are connected with an over-lapping joint, said front section having a rectangular shaped window therein and also having windows in the sides and top, a continuous air duct having perforations therein extended around said rectangular-shaped window of the front section, branch ducts connecting the duct around the window of the front section to the windows in the sides and top, and means of supplying air to the interior of the helmet with the air being supplied to the helmet through the duct around said rectangular-shaped window of the front wall and discharged against the inner surfaces of said windows.

5. In a diver's helmet, the combination which comprises a split spherical shell having front and rear sections the meeting edges of which are connected with an over-lapping joint, said front section having a rectangular shaped window therein

and also having windows in the sides and top, a continuous air duct having perforations therein extended around said rectangular-shaped window of the front section, branch ducts connecting the duct around the window of the front section to the windows in the sides and top, means of supplying air to the interior of the helmet with the air being supplied to the helmet through the duct around said rectangular-shaped window of the front wall and discharged against the inner surfaces of said windows, said front and rear sections of the helmet having depending portions adapted to rest against the chest and back, respectively, of a diver with the head of the diver in the helmet, and front and back weights on said depending portions of the sections.

JOSEPH R. LINDINGER.

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