

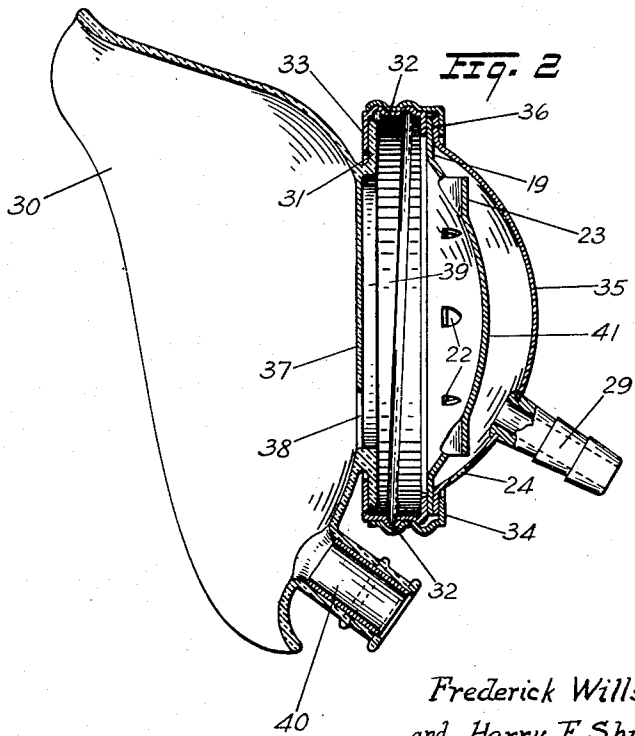
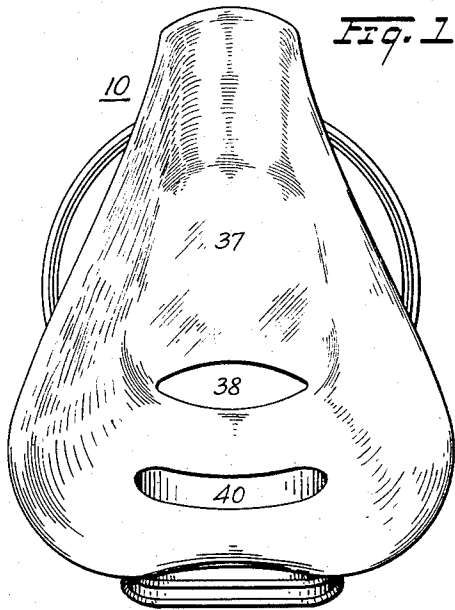
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MASK FOR AIR LINE RESPIRATORS

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MASK FOR AIR LINE RESPIRATORS

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2 Claims. (Cl. 128-145)

This application is a division of our copending application Serial No. 643,630 filed November 21, 1932 and the invention disclosed herein relates to protective equipment and particularly to an improved respirator mask especially adapted for use with air line respirators in which air is supplied under pressure to the respirator.

It is desirable when air is supplied under pressure to a worker's respirator to purify the air as much as possible, for example by means of an air conditioner such as disclosed in said parent application, in order to remove traces of vapor or fluids, such as water and oil, which enter the air line incidentally to the use of a compressor. It is also desirable to reduce possible discomfort and/or physical irritation to a wearer arising from supplying air under pressure to the respirator; such for example as result from air being blown along the sides of a wearer's nose and escaping past the edges of the respirator mask into the corners of the eyes and against the eyelids and lashes.

Therefore, one object of the present invention is to provide a respirator mask adapted to reduce possible discomfort resulting from supplying air under pressure to the respirator.

The foregoing and other objects and advantages of the invention will be apparent upon consideration of the following detailed description and appended claims when read in conjunction with the accompanying drawing in which:

Figure 1 is an end elevation of the improved respirator mask, and

Figure 2 is a longitudinal sectional view of the respirator mask and mounting casing therefor.

Referring to the drawing, the numeral 10 designates a respirator to which air under pressure is supplied through a pressure airline preferably having therein an air conditioner for removing traces of oil, water and the like from the air before the latter reaches the respirator. The respirator 10, as shown in Figs. 1 and 2, comprises a mask 30, of suitable flexible material such as rubber, formed to enclose the nose and mouth of a wearer and shaped to conformingly contact the face about the nose and mouth. At its forward end mask 30 is provided with a semi-rigid flange 31 insertable through an aperture in the end wall of a screw cap 32 so that the annulus-like end wall 33 of the cap fits in the groove between flange 31 and the adjacent portion of the mask proper when the mask is attached to the cap. Screw cap 32 is interengaged with a similar screw cap 34 to constitute a mask ring or casing. The convex portion of a hemispherical

end member 35 extends through the aperture in the cap 34 while the flange 36 of the member is disposed adjacent the annulus-like end wall of the cap. Member 35 is provided with a nipple 29 for connection to air line 11 for supplying the air under pressure to the respirator 10.

At its lower side the inlet member 35 is provided with a small aperture 24 forming a drain for vapors and/or fluids, such as oil or water which may reach the mask and which may be condensed out of the air stream by impingement on a baffle plate 41 where one is provided.

In order to prevent air which enters under pressure forcing its way past the edges of the mask, particularly along the nose and adjacent the eyes at the top portion of the mask, the wall of the mask is continued downwardly providing a web 37 extending across the usual respirator opening 39 opposite inlet 29 in the path of the stream of air entering the mask ring under pressure. An opening 38 through which air enters the interior of the mask is provided in the lower portion of the web substantially in alignment with a wearer's mouth. As shown the opening 38 is located adjacent the outlet 40 of the mask so that air in excess of the amount required for breathing may escape by way of the outlet 40 through which a wearer exhales, air admission through said opening being prevented by a flap valve, not shown, but of any usual construction, as valve 17 in McBride Patent No. 1,730,227, of October 1, 1929. The web 37 thus acts as a baffle to direct the flow of air, preventing it being blown along the wearer's nose so that it will not cause discomfort or physical irritation to a wearer.

If desired, the respirator may also be provided with a baffle plate 41 which is substantially hemispherical and has a flange 19 engaged between the end of cap 32 and the flange 36 of member 35 for securing it in place. The convex surface of baffle plate 41 is opposed to the inlet nipple 29 so that air forced under pressure into the mask impinges against the baffle plate. The baffle plate is provided with a plurality of circularly arranged apertures 22 through which the air is diverted to pass to the web 37 adjacent the outer part thereof. As shown in Fig. 2, portions 23 of the baffle plate adjacent the apertures 22 are formed to extend outwardly at an angle relatively to the hemispherical surface of the plate so that they form secondary baffles about which the air flows to pass through the apertures instead of being blown directly therethrough. Thus, the concentrated stream of air entering the mask under pressure is broken up by impinging against baffle plate 41 and

caused to flow substantially uniformly through the mask ring 32, 34, the baffle plate 41 acting in conjunction with the mask-web 37 to prevent discomfort to a wearer because of the supply of air under pressure.

Although an illustrative embodiment of the invention has been described in detail, there are many changes and variations which may be made without departing from the spirit of the invention and, therefore, it is desired to include all such changes and variations within the scope of the appended claims.

What we claim is:

1. In combination with a pressure air line, an air-tight connecting casing comprising a pair of complementary clamping caps having apertured ends and surrounding rims adapted to clampingly engage a line connecting member in one apertured end and a face mask in its opposite apertured end, of a face conforming mask having a narrowed

nose-enclosing upper end and a widened mouth-enclosing lower end and an annular attaching flange engageable in said end apertured clamping cap, a membrane forming a web within the space surrounded by said attaching flange, said membrane having an aperture therein adapted to direct air flow from said casing into the widened mouth-enclosing lower end of said mask.

2. An integrally formed face-conforming respirator mask of flexible material, comprising a cupped chamber having a face-contacting wall edge, a narrowed nose-enclosing upper portion, and a widened mouth-enclosing lower portion formed with a membrane wall portion having an air-directing inlet to said chamber, and an air supply attaching flange on the outer wall surrounding said membrane portion, substantially as set forth.

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