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N. SCHWARTZ

1,946,334

RESPIRATOR

Filed Dec. 15, 1930

Fig. 1.

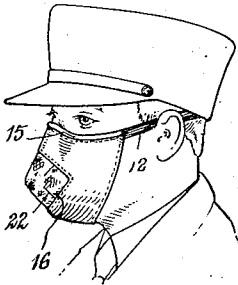


Fig. 2.

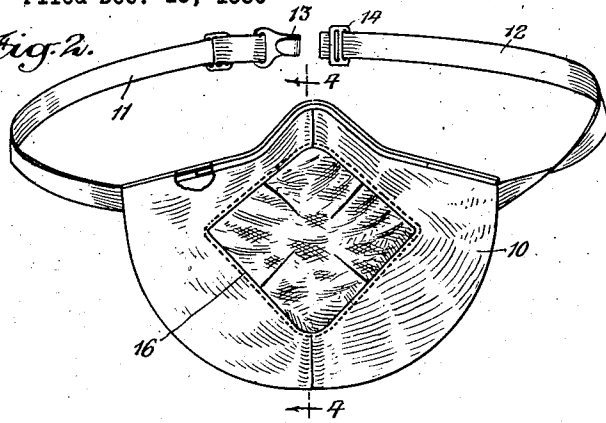


Fig. 3.

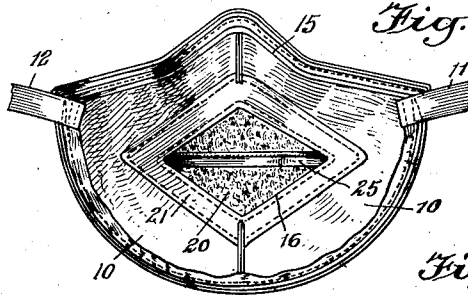


Fig. 4.

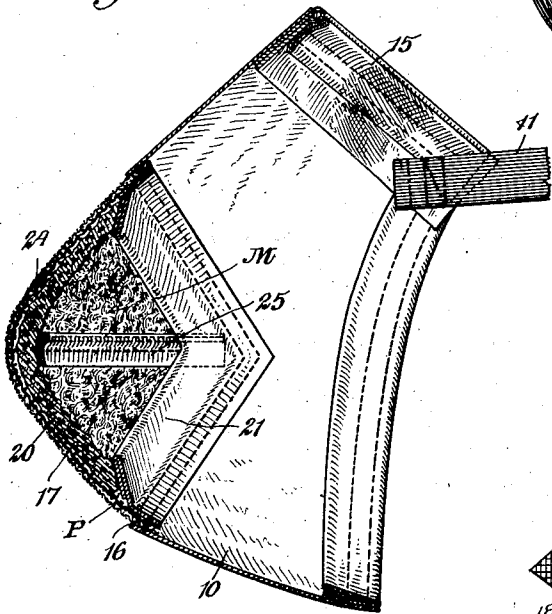


Fig. 6.

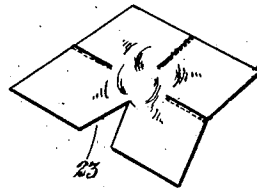
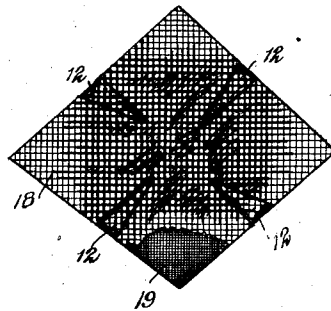


Fig. 5.



WITNESSES

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1,946,334

RESPIRATOR

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Application December 15, 1930
Serial 502,575

1 Claim. (Cl. 128-146)

This invention relates to masks or respirators and of the type such as disclosed in my prior United States Letters Patent Nos. 1,313,745 and 1,292,096, in which the main body portion is constructed of suitable gas impervious material having a substantially centrally disposed opening which is screened by suitable material which admits air but excludes dust or other foreign or injurious solid matter with which the air may be laden and which it is desirable to exclude.

The invention also pertains to respirators of this type which may be formed with a pocket covering the opening to receive and hold a sponge or other absorbent element containing liquid or a substance which functions to counteract noxious or poisonous fumes, gases, bacteria or other injurious foreign matter which is not excluded by the screen.

It is an object of the present invention to generally improve and simplify the construction of respirators or masks of or similar to the type such as disclosed in the prior patents above referred to and to overcome certain objectionable features and disadvantages thereof which have been observed, the most notable of which is the tendency of the sponge or absorbent element to contact with the nose and mouth when the respirator is in applied position, thereby causing irritation and discomfort, which is especially so where the counteracting substance contained thereby is of an acid, alkaline or other irritating nature. This tendency is due to the fact that the screen which forms a wall of the pocket is stretched substantially flat within the opening of the mask or respirator, and the invention, therefore, more specifically contemplates the fashioning or shaping of the pocket wall or screen so that the same inherently bulges or flexes outwardly to dispose the sponge or absorbent element in a position where it does not contact with the nose, mouth or adjacent portion of the wearer's face.

As a further object, the invention comprehends in connection with a mask or respirator of the character set forth having a pocket within the screened opening, a positive means engaging within the pocket and coacting with the absorbent element for positively maintaining the absorbent element in outwardly bulged condition to avoid contact of said element with the nose, mouth or adjacent portions of the wearer's face.

Other objects reside in the provision of an improved respirator or mask which is comparatively simple in its construction and mode of

use, inexpensive to produce and which is highly efficient in its purpose.

With the above recited and other objects in view, reference is had to the following description and accompanying drawing, in which there is exhibited one example or embodiment of the invention, while the claim defines the actual scope of the same.

In the drawing:

Figure 1 is a perspective view of the respirator or mask in applied position.

Figure 2 is a front view thereof on a larger scale.

Figure 3 is a rear or inside view of the same.

Figure 4 is an enlarged vertical sectional view taken approximately on the line indicated at 4-4 in Figure 2.

Figure 5 is a detail rear face view of the screen which constitutes the wall of the pocket, and illustrating the same removed from or prior to its incorporation in the mask or respirator structure.

Figure 6 is a similar view of a slightly modified form of the invention.

Referring to the drawing by characters of reference, 10 designates the body of the mask or respirator which is constructed of a gas impervious material which is suitably shaped to cover the wearer's face and which is provided with band sections 11 and 12 having any suitable engaging means of connection 13 and 14 for holding the respirator body in applied position. The margin of the body 10 is formed with suitable means, such as the strips 15, which cause an intimate marginal contact of the body with the face of the wearer. As is customary in respirators or masks of this type, the body is provided with a substantially central opening or cut-out portion 16 to admit of inhalations and exhalations therethrough, said opening being suitably screened to admit air but exclude dust or other foreign or injurious solid matter with which the air may be laden. As particularly illustrated in the present instance, the screening of the opening 16 is accomplished by inserting therein a suitable screening element designated generally by the reference character 17, which is made up of inner and outer layers of material 18 and 19. In order to provide a pocket located within the opening for receiving a sponge or absorbent element 20 which is designed to contain a liquid or substance to counteract noxious or poisonous fumes, gases, bacteria or other injurious foreign matter which is not excluded by the screen, an inner continuous marginal strip 21 frames the

opening 16 and extends inwardly from the edge of the opening to combine with the screening element 17 to form the pocket P. It is obvious that the continuous strip 21 forms an opening or entrance mouth M, through which the sponge or absorbent element 20 may be introduced to the pocket or removed therefrom.

In order to avoid discomfort or irritation which might result from contact of the sponge or element 20 with the nose, mouth or adjacent portions of the wearer's face, the screen element is shaped or fashioned in such a manner as to produce an inherent outward bulge, as clearly illustrated in Figures 1 and 4 of the drawing. This may be accomplished in various ways, such as by forming the screen element or wall 17 of the pocket with pleats 22 extending radially inward from the marginal edges thereof, which pleats are of tapering formation inwardly. It is also obvious that in lieu of pleats, V-shaped notches or darts 23 may extend radially inward from the margin of the screen element or pocket wall 17 with the edges thereof stitched together to produce the bulge, as clearly illustrated in the modified form shown in Figure 6 of the drawing.

In order to provide means for positively insuring the outward bulge of the sponge or absorbent element 20, means may be employed, such as a bowed wire or leaf spring 24, which will preferably be covered with a covering material 25. In practice, the opposite ends of the bowed spring 24 are engaged within the corners of the pocket and the convex surface of the spring will be dis-

posed in contact with the concave inner face of the sponge or absorbent element.

From the foregoing, it will thus be seen that an improved respirator or mask has been devised which avoids the discomfort or irritation of contact of the sponge or absorbent element with the nose, mouth or adjacent portions of the face of the wearer, especially where said sponge or absorbent element contains a liquid or substance which is of an irritating nature.

What is claimed is:

A respirator having a body of gas impervious material provided with an opening adjacent the nose and mouth of the wearer, said opening being of substantially diamond shape, and a pocket forming structure for holding an absorbent element containing a substance for counteracting injurious matter passing through the opening, said pocket structure being located in and closing the opening and which pocket structure includes as part thereof a flexible screen material constituting a wall of the pocket, said screen material being of substantially rectangular form, the four edges of the screen material being contracted intermediate the ends of each edge so that the central portion of the screen material will bulge outwardly, a continuous marginal strip secured to the inner face of the body and covering the edges of the pocket forming structure, and a bowed element having its ends located in the angles of the marginal strip and bulged outwardly against the pocket forming structure.

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