

N. SCHWARTZ.
RESPIRATOR.
APPLICATION FILED APR. 3, 1918.

1,292,096.

Patented Jan. 21, 1919.

Fig-1-



Fig-5-

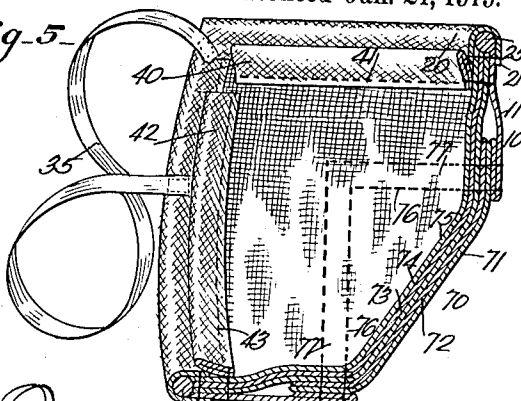


Fig-2-

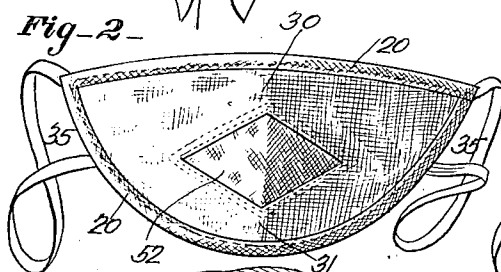


Fig-3-

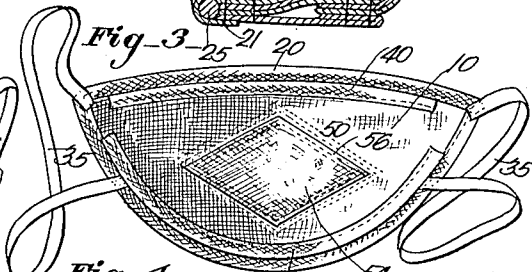
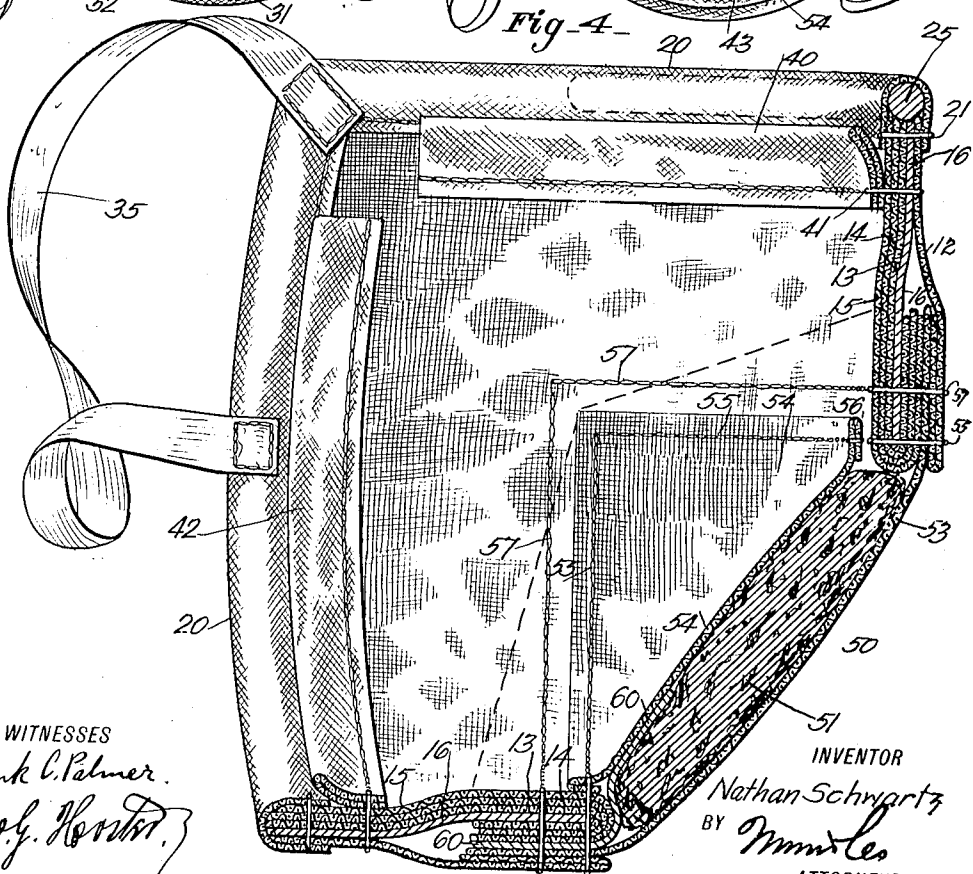


Fig-4-



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NATHAN SCHWARTZ, OF NEW YORK, N. Y.

RESPIRATOR.

1,292,096.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, NATHAN SCHWARTZ, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Respirator, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved respirator more especially designed for the use of persons working in the presence of air laden with or containing dust, noxious and poisonous fumes or gases, bacteria, and other deleterious matter, and arranged to effectively prevent such deleterious matter from being inhaled by the user of the respirator and to insure a proper fitting of the respirator on the face of the user without danger of injuring the skin.

With these and other objects in view, the invention consists of certain novel features of construction as hereinafter shown and described and then specifically pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a reduced perspective view of the respirator as applied;

Fig. 2 is a front elevation of the respirator;

Fig. 3 is a rear elevation of the same;

Fig. 4 is an exaggerated cross section of the same; and

Fig. 5 is a similar view of a modified form of the respirator.

The body 10 of the respirator is formed of a plurality of superimposed layers of textile material 12, 13, 14 and 15, of which the outermost layer 12 is formed of closely woven material such as glossy silk or similar close mesh glossy material, and the innermost layers 13, 14 and 15 are preferably made of gauze, netting or similar open mesh material. Between the outer layer 12 and the inner layers 13, 14 and 15 is arranged an intermediate layer 16 of rubber cloth or a similar impervious material. The several

layers 12, 13, 14, 15 and 16 are fastened together along their margins by a binding 20 of tape or other suitable material, and fastened to the layers by stitches 21. A piece 25 of soft, pliable wire is inserted in the binding 20 at the top edge at the middle of the body, and this piece of wire is bent to conform to the shape of the nose of the wearer so as to snugly fit onto the nose. The middle, top and bottom portions of the body 10 are provided with darts 30 and 31 to give a bowl or cup shape to the body 10 so that a breathing chamber is provided between the middle portion of the body and the face of the wearer. It is understood that the binding 20 provides a tight joint with the face of the wearer. The sides of the body 10 are provided with loops 35 of elastic material and adapted to be engaged with the ears of the wearer to securely hold the respirator in position on the face, it being understood that the loops 35 are stretched and are thus under tension to snugly hold the respirator in position with the binding 20 forming a tight joint with the face, as previously explained. The lower portion of the body 10 is sufficiently enlarged to fit under the chin of the wearer thus preventing slipping up of the respirator by the chin and downward slipping by the nose of the wearer. The inner face of the body 10 is provided adjacent the top edge with a retaining flap 40 of doubled-up material of a nature similar to that of the binding 20, and this retaining flap 40 is attached by stitches 41 to the body 10 a distance downward from the stitches 21, so that the retaining flap 40 extends upward and partly overlies the corresponding portion of the binding 20. A similar retaining flap 42 is fastened by stitches 43 to the body 10 adjacent the lower edge of the body and this retaining flap 42 coacts with the lower portion of the binding 20 to catch any extraneous matter that may work from the outside under the binding and the face of the user of the respirator.

The layers 12, 13, 14, 15 and 16 are cut out at or near the middle to provide space for a pocket 50 adapted to contain a sponge or other suitable absorbent material 51 to be saturated with a suitable chemical capable

of neutralizing or absorbing the noxious or poisonous gases. The pocket 50 is preferably of diamond shape and its outer and inner sides 53, 54 are made of an open mesh fabric preferably silk bolting cloth. The pocket layers are fastened to the body layers by stitches 55, which, however, are omitted along one edge 56 of the inner side 54 of the pocket to provide a pocket opening for the insertion or removal of the sponge 51. A second row of stitches 57 is also provided to fasten the outside layer 53 to the layers of the body 10.

In order to prevent any moisture in the pocket from passing onto the face of the wearer of the respirator, use is made of a strip 60 of rubber or cloth or other impervious material, which extends on the outer face of the inner side 54 at the lower portion thereof and is interposed between the layers of the body 10 at the bottom and fastened in place by the stitches 55 and 57. It will be noticed that by this arrangement any moisture that may reach the bottom of the pocket from the sponge 51 is shed in an outward direction, that is, through the layer, thus preventing such moisture from reaching the face of the user.

In a modified form shown in Fig. 5, the pocket and the absorbent material is omitted, and instead a number of superimposed layers of textile material are employed of which the outermost layer 71 is preferably of silk or silk bolting cloth, and the remaining layers 72, 73, 74 and 75 are of soft open mesh material such as cheesecloth, gauze or the like.

It is understood that the outer layer 11 of the body 10 is cut out at the middle but the several layers of the insert and the body 10 are fastened together by rows of stitches 76 and 77.

By shaping the body 10 as described and shown in the drawing, the undesirable and unsightly muzzle appearance is avoided and the respirator appears with a veil effect or mask effect.

It is understood that by making the outer surface of the respirator of dust shedding material, it is evident that dust and like solid matter, and especially such of a metallic character like lead, arsenic, etc., does not adhere to the respirator but drops off or is deflected and hence does not enter and clog the open mesh inner layers of the body or the pocket.

It will be noticed that by constructing the pocket 50 in the manner described, the sponge or other absorbent material 51 does not come in contact with the body proper and hence the fabrics forming the body are not liable to take up the liquid and become soaked and their meshes closed.

By interposing the layer 16 of imper-

vious material between the outer and inner layers of the body 10, any moisture (especially poisonous liquids) that may pass through the outer layers is kept from reaching the inner layers and the mouth and nose of the user.

In exhaling, the air exerts sufficient pressure against the retaining flap 42 at the sides and the sides of the binding 20 to allow the air to pass out between the skin and the said flap and the binding thus insuring free breathing.

When inhaling, the air is readily drawn in at the pocket and subjected to a purifying action by coming in contact with the liquid with which the absorbent material is saturated.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:—

1. A respirator having a body provided interiorly with a pocket adapted to contain an absorbent material, the body having an outside dust shedding pliable member of textile material.

2. A respirator having a body provided interiorly with a pocket adapted to contain an absorbent material, the body having an outside dust shedding pliable member of textile material, and superimposed open mesh layers of textile material at the inner side.

3. A respirator, comprising a body substantially cup-shaped and provided interiorly at the middle with a pocket, the outer and inner sides of which are formed of pieces of silk bolting cloth, and an absorbent material held in the said pocket.

4. A respirator, comprising a body substantially cup-shaped and provided interiorly at the middle with a pocket, the outer and inner sides of which are formed of pieces of silk bolting cloth, a moisture shedding member of impervious material extending along the lower portion of the said inner pocket side and at the outer face thereof, and an absorbent material held in the said pocket.

5. A respirator, comprising a body formed of a plurality of superimposed layers of textile material, the outer layers being closely woven to shed dust and the other layers being of an open mesh, and a layer of impervious material interposed between the said outer and inner layers except at the middle of the body to prevent moisture from passing through the body.

6. A respirator, comprising a body formed of a plurality of superimposed layers of textile material and an intermediate layer of an impervious material which is omitted at the middle of the body, the body having a pocket on its inner face, the pocket being adapted to contain an absorbent material,

and a layer of impervious material extending into the lower portion of the pocket.

7. A respirator, comprising a body formed of a plurality of superimposed layers of textile material, and an intermediate layer of an impervious material, which is omitted at the middle of the body, the body having a pocket on its inner face, the pocket be-

ing adapted to contain an absorbent material, and a layer of impervious material extending into the lower portion of the pocket and overlying the inner side of the pocket to shed the moisture in an outward direction through the front of the pocket. 10

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