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MASK FOR THE PREVENTION AND RELIEF OF ALLERGIC RESPIRATORY COMPLAINTS

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Fig 1

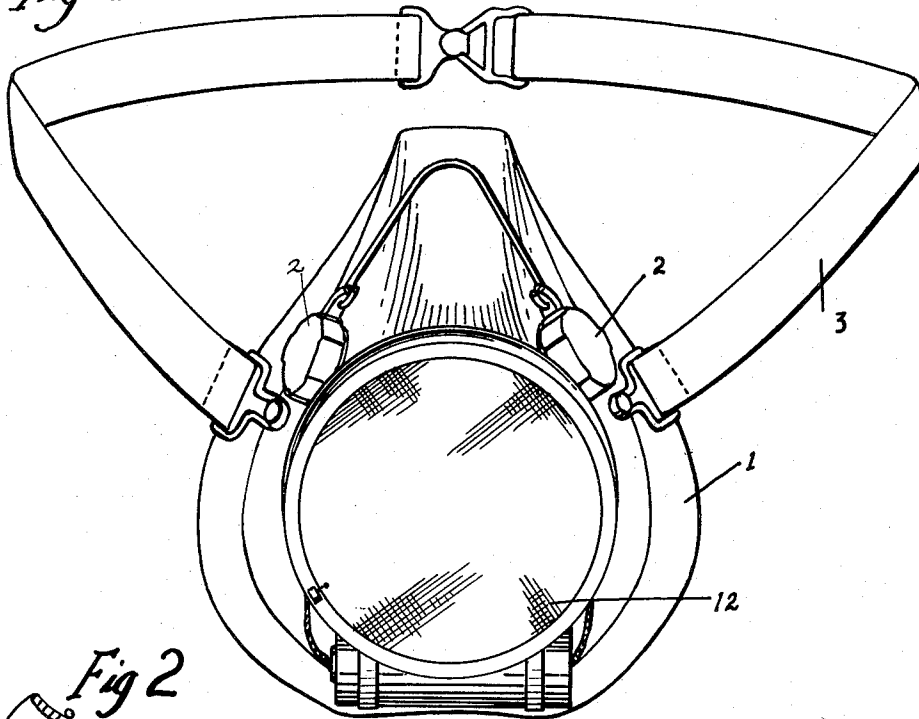


Fig 2

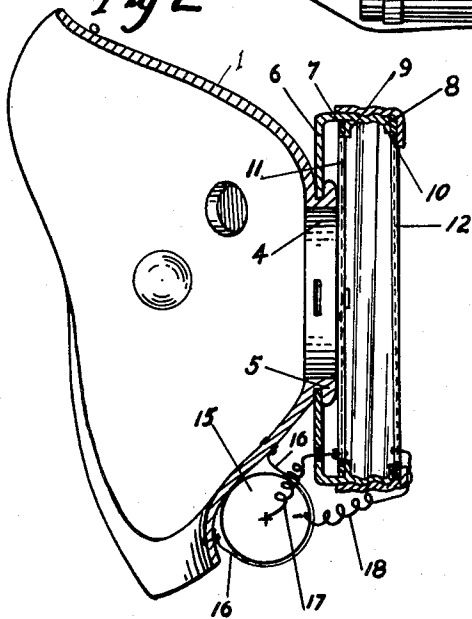


Fig 3

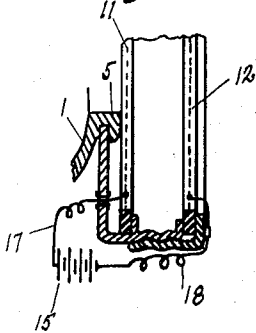
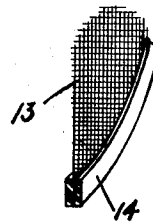


Fig 4



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MASK FOR THE PREVENTION AND RELIEF OF ALLERGIC RESPIRATORY COMPLAINTS

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4 Claims. (Cl. 128—146)

My invention relates to a device adapted to be used for the prevention and relief of allergic complaints such as asthma and hayfever.

Allergic complaints such as those mentioned are usually caused by pollens and other similar substances in the atmosphere which enter the respiratory passages of a person subject to the complaint and set up characteristic disturbances from which the patient suffers. The principal object of the present invention is to provide a device for removing such pollens and similar substances from the air before they are permitted to enter the respiratory passages of the subject.

Similar devices or masks have been used in various industrial fields for the removal of dust and foreign substances incident to the particular employment. Such masks, however, operate by mechanical filtration, and are not effective for asthma and hayfever sufferers. In the treatment of allergic complaints such as those to which applicant's invention is directed, such industrial masks are found wholly ineffective for the reason that they do not remove to a sufficient degree the microscopic pollens which are the immediate cause of the disease. The present invention proposes to remove dusts and pollens which when suspended in air assume positive or negative electrical charges by bringing the same into proximity or contact with positively and/or negatively charged screens or filters. Thus the positively charged particles will be neutralized by a negatively charged screen and retained upon the surface of the discharging screen. Similarly, the negatively charged particles will be retained upon the surface of a positively charged screen. The polarization of the screen or screens may be effected either electrically or by the application of a discharging substance, either negative or positive.

With the foregoing and other objects in view, a preferred adaptation of my invention comprises the following details of construction.

In the drawing:

Figure 1 is a front elevation of a mask constructed in accordance with this invention.

Figure 2 is a section of said mask.

Figure 3 is an enlarged section of a portion of the mask.

Figure 4 is a view of a portion of one of the polarized screens.

The numeral 1 indicates a mask adapted to fit over the respiratory organs of a person, that is, over the nose and mouth. The mask 1 is preferably constructed of resilient rubber or

similar material, and is provided with outlet valves 2 which may be of any well known form. A strap 3 is provided for securing the mask to the face of the wearer. The front portion of the mask is provided with a large opening 4 having a grooved flange 5 in which the fixed portion 6 of the filter housing is secured. The flange 7 of the housing is threaded to receive a flanged ring 8. The inside of the flange 7 is provided with shoulders 9 and 10. Filtration screens 11 and 12 are provided, the screen 11 being secured between ring 9 and the front of the mask, and screen 12 being secured between the rings 10 and 8, all of which is clearly shown in Figure 2 of the drawing.

In Figure 4 I have shown a portion of one of the filtration screens in a preferred form. It consists of a screen 13 of extremely fine metal mesh secured in a ring 14.

The screens 11 and 12 may be effectively polarized by means of a small dry cell battery which is secured in the structure by clamps 16—16 at any convenient portion of the mask. The positive lead 17 is connected with the screen 11, and the negative lead 18 with the screen 12. The screens are, of course, insulated from each other.

The screens 11 and 12, as above indicated, may also be electrically polarized by the use of electrically discharging substances of negative and/or positive polarization. Examples of negatively polarized substances are aluminum hydroxide and iron hydroxide. An example of a positively polarized substance is iron sulphide. When the mask elements 13 are polarized by the application of such substances it will be understood, of course, that the same need not be of metallic construction but may be of fabric gauze or similar material.

While I have shown in the drawing a mask in which two oppositely polarized screens are provided, it will be understood that it may not under all circumstances be necessary to provide a plurality of screens, one screen either negatively or positively polarized being satisfactory where the pollens or other substances to be removed are all of a polarization opposite to that of the screen. In the main, however, a plurality of oppositely polarized screens will be found to be more effective as adapted to remove all polarized pollens or other deleterious or floating substances. In some cases a greater number of screens than two, of alternate polarization, or both electrically and chemically polarized may be found effective. It is obvious too that the principle of my invention

may be readily adapted to the removal of deleterious and floating substances from the air entering buildings or rooms. I do not wish, therefore, to be limited to the details of construction as described and shown in the drawing, but consider as of my invention all such modifications and changes of details as come within the purview of the appended claims.

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

1. A device of the type specified comprising a mask adapted to cover the respiratory organs of the face of a person, said mask having an intake opening, a screen in said opening, and means for electrically polarizing said screen.

2. A device of the type specified comprising a mask adapted to cover the respiratory organs of the face of a person, said mask having an intake opening, a plurality of screens in said opening, and means for oppositely polarizing said screens electrically.

3. A device of the type specified comprising a mask adapted to cover the respiratory organs of the face of a person, said mask having an intake opening, a pair of screens in said opening, said screens being electrically insulated from each other, a source of electrical energy, a lead from the positive pole of said source to one of said screens, and a lead from the negative pole to the other screen.

4. A device of the type specified comprising a mask adapted to cover the respiratory organs of the face of a person, said mask having an intake opening, a pair of screens in said opening, said screens being electrically insulated from each other, a dry cell battery, means for securing said dry cell battery to said mask, a lead from the positive pole of said battery to one of said screens, and a lead from the negative pole to the other screen.

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