

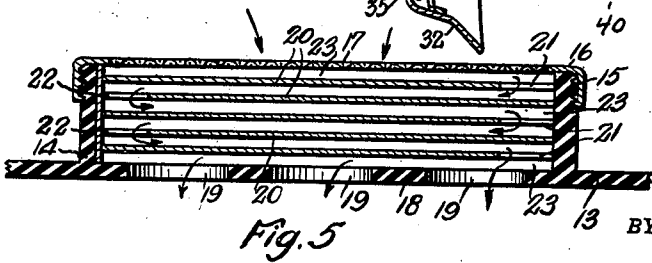
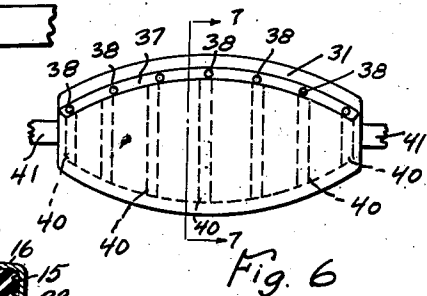
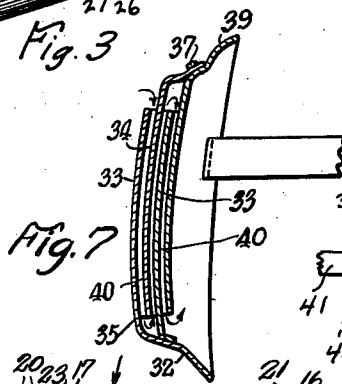
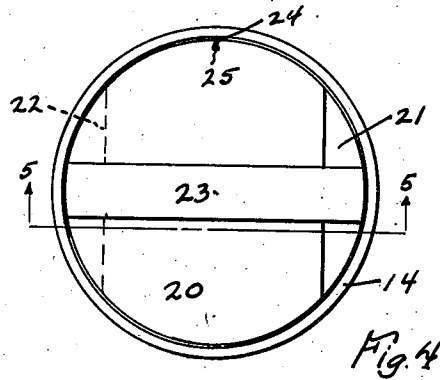
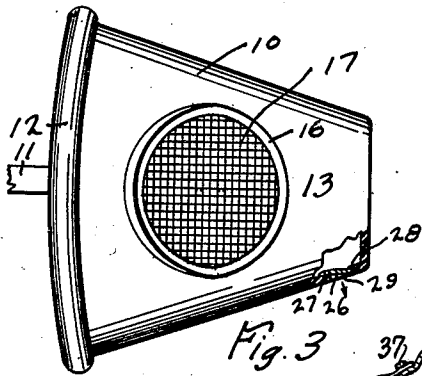
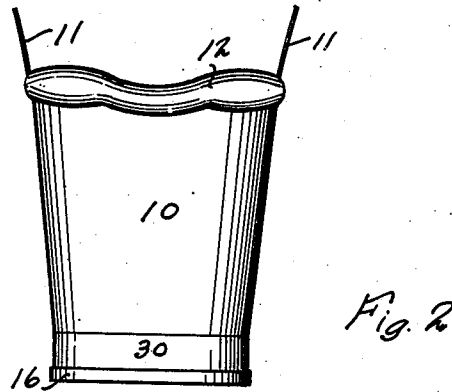
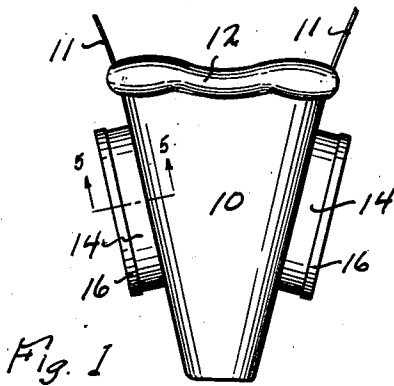
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2,261,362

POLLEN FILTERING MASK

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2,261,362

POLLEN FILTERING MASK

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2 Claims. (Cl. 128—146)

My invention relates to a mask for filtering purposes.

An object of my invention is to provide a mask which can be worn upon the face and which will efficiently filter the foreign particles from the air drawn within the lungs or within the nasal passages of the wearer.

A further object of my invention is to provide a mask especially adapted to filter pollen or similar particles which cause the usual discomforts to hay fever sufferers.

A further object of my invention is to provide a form of mask which can be worn during the day and a further form which can be worn at any time and a special form which can be worn comfortably during sleeping periods.

A further object of my invention is to provide a filter which includes means for positively trapping and retaining such pollen particles.

A further object of my invention is to provide such a mask which can be manufactured at a reasonable cost.

With these and other objects in view, my invention consists in the construction, arrangement and combination of the various parts of my device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawing, in which:

Figure 1 is a plan view of one type of mask,

Figure 2 is a plan view of a slightly modified form,

Figure 3 is a side elevation of Figure 1,

Figure 4 is a plan detail of one of the filtering units with the cover removed,

Figure 5 is a sectional view taken along the lines 5—5 of Figures 1 and 4,

Figure 6 is a modified form of mask, and

Figure 7 is a sectional view taken along the lines 7—7 of Figure 6.

Hay fever or other diseases of this type which attack the respiratory organs are caused by the inhalation of pollen particles along the passages in the respiratory channels. The principal objective of my invention is to provide means for entrapping such pollen before it can enter into these passages. I have found that the mere provision of filtering means is usually not sufficient for this purpose and that such filter arrangements must be cleaned frequently rendering the device more impractical.

I have used the character 10 to designate the mask body which is of any suitable shape and which extends substantially a certain distance beyond the face of the wearer. Straps 11 are

used to hold the mask in place and are fixed about the head of the wearer. A soft sponge rubber or other material member 12 is suitably attached about the perimeter of the mask to act as a gasket against the face and at the same time to provide a comfortable arrangement. The mask portion 10 can be of any suitable material such as rubber, fibre, or any other material which is not too porous in order not to defeat the purposes of the invention.

Attached on either side wall 13 of the mask are the integral cylindrical members 14 which extend outwardly from the same and which are threadably engaged at 15 with a cap member 16. The cap member is attached to a suitable screen 17. The side wall 13 extends into an interior portion 18 (see Figure 5) which includes a series of holes 19 which communicate from the nose and mouth of the wearer to the external portions of the mask. Received within the cylindrical member 14 are a series of thin non-permeable plates 20 which have the alternate cut away portions 21 and 22 (see Figures 4 and 5). Lengthened spacing members 23 are attached to respective plates 20 adjacent thereto to space such plates a slight distance apart. A loop member 24 passes through the openings 25 which openings are provided through the several plates.

The plate members 20 are coated on either side with a suitable grease such as vaseline or other similar greases which have the inherent property of sufficient adhesiveness to retain small particles. A small rubber flap valve 26 is attached at 27 interiorly of the mask and rests against an inner shoulder 28. The valve 26 is positioned within the opening 29. When the mask is worn and during the breathing process, during inhalation the air bearing the pollen is drawn through the screen 17 and through the openings 21 and 22. During such inhalation, the stream of air will necessarily pass through a tortuous passageway along and about the valve plates 20 and as shown by the small arrows in Figure 5.

During such passage, the light pollen particles will be caught and retained on the grease which covers such plates and when the stream reaches the openings 19 ready for inhalation into the nostrils and other passages in the body, the air will be removed of such pollen particles relieving the wearer of the mask. One greasing application will last for a comparatively long period of time and the plate 20 can be removed and still retained in position by means of the loop member 24 and can then be wiped free of grease

and a new application of the same applied. The loop 25 serves to center the arrangement so that the plates can be then placed within the cylinder 14 easily. The valve 26 opens outwardly only and permits more convenient exhalation.

A further modification is shown in Figure 2 wherein one cylinder such as 30 can be employed at the outer end of the mask instead of attaching two of such cylinders. In this type, the cylinder 30 can be made larger and slightly thicker thereby increasing the capacity thereof.

Another modification is shown in Figures 6 and 7. In this type of device, the mask portion 31 is employed, which extends substantially about the entire width of the face besides covering the nose and mouth and is made of a pliable material such as oiled silk and the like which is suitably non-porous. In this type of structure, the lower edge of the mask 32 extends into a pair or more of upwardly extending flaps 33 which flaps extend the entire width of the mask. A series of further flaps 34 extend downwardly and between the flaps 33 and extend downwardly to the point 35 where an opening is left at 36. The flaps 34 extend into an upper edge portion 37 which is suitably attached by means of snaps or other arrangements 38 to the upper portion 39 of the mask. A series of spacer strips 40 are attached to the respective plates 33 and 34 and are spaced apart as shown in Figure 6.

Suitable straps 41 are attached to the mask to hold the same against the face. From the construction of this latter device, it will be seen that the mask can be worn fairly snugly against the face without discomfort and yet provide the functions of a tortuous passageway passing about and around the flaps 33 and 34. Such flaps are greased as in the other structure above described and to clean the same, the snaps 38 are unfastened and the entire group of inner fabric flaps 34 can be pulled out, cleaned, greased, and replaced. Similarly, the flaps 33 can be treated in the same

manner. This type of mask can be worn when the wearer is sleeping without causing unnecessary protuberances which might tend to remove the mask if the wearer were to move from side to side. The strips 40 insure that the greased members are spaced at all times since pressure between the members will still not cause contactation thereof due to the spacing of the members 40.

It will now be seen that I have provided a mask for filtering pollen, which can be worn at any time and which positively entraps such pollen, and which can be manufactured at a reasonable cost.

Some changes may be made in the construction and arrangement of the parts of my invention without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claims any modified forms of structure or use of mechanical equivalents, which may be reasonably included within their scope.

I claim as my invention:

1. A pollen filtering mask comprising a mask body, said body including a plurality of overlapping pliable members adapted to act as baffling means and to provide a tortuous passageway therebetween, said pliable members extending to substantially the entire width of the mask body, and adapted to cover the mouth and nose of the wearer of said mask, said pliable extensions being greased along the surfaces thereof.

2. A pollen filtering mask comprising a mask body, said body including a plurality of overlapping pliable members adapted to act as baffling means and to provide a tortuous passageway therebetween, said pliable members extending to substantially the entire width of the mask body, and adapted to cover the mouth and nose of the wearer of said mask, said pliable extensions being greased along the surfaces thereof, a plurality of broadened vertical spacer members spaced laterally between said pliable extensions to maintain the same in separated condition.

FRANKLIN E. GILL.