Oct. 6, 1936. E. W. WAGNER 2,056,753

PROTECTIVE MASK

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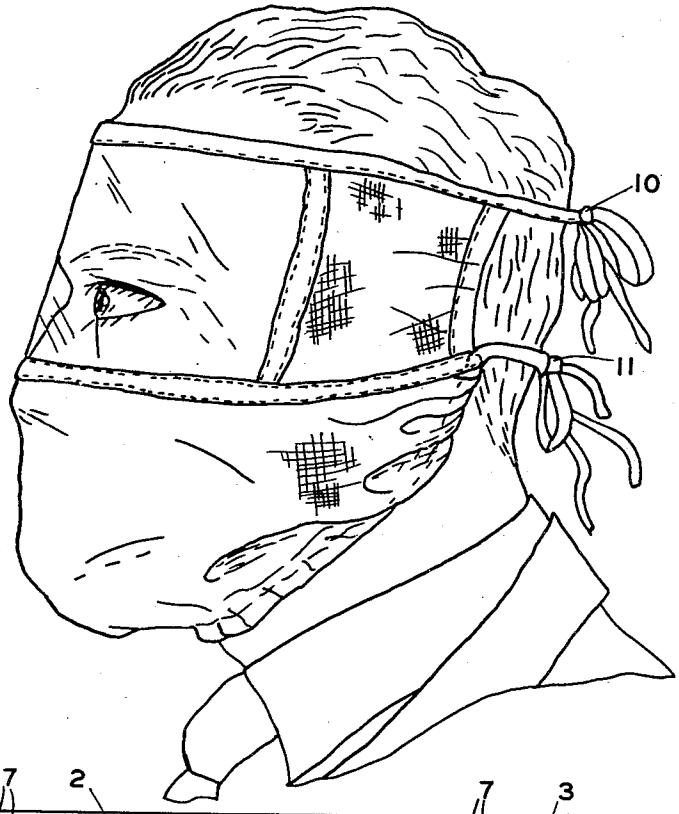

FIG. 1

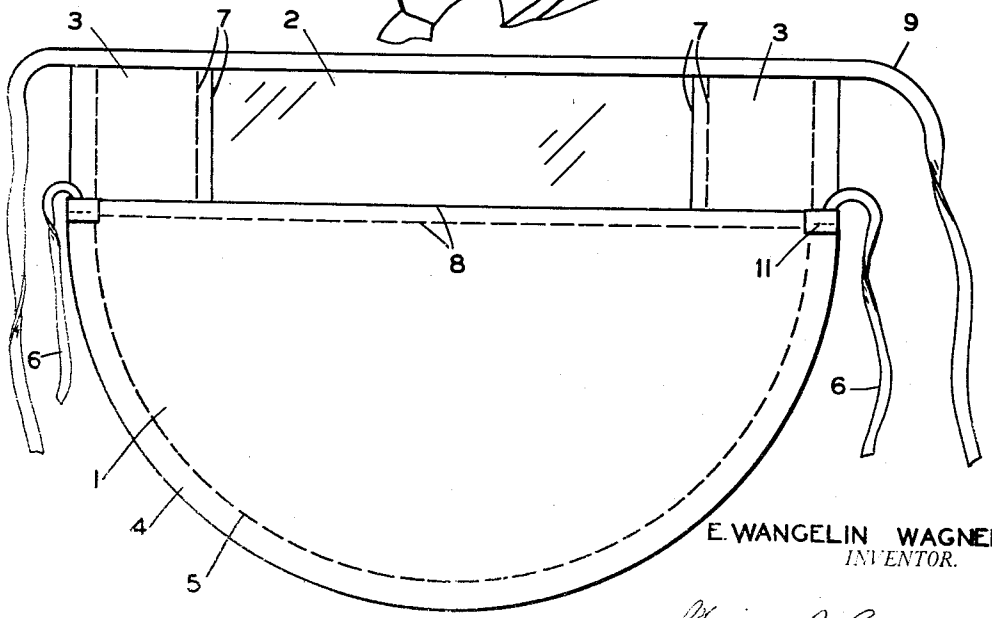

FIG. 2

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PROTECTIVE MASK

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4 Claims. (Cl. 128—141)

It will be understood that the invention is susceptible of many modifications, and, accordingly, I do not wish to be limited in my protection, except as set forth in the accompanying claims.

This invention relates to dust masks, and more particularly to the provision of a simple and inexpensive device capable of protecting the eyes, face and ears of the wearer from dust and other foreign matter without interfering with the breathing, talking or hearing.

Dust storms, heretofore considered to be unusual phenomena have occurred so frequently in certain parts of the country in recent years that they are now beginning to be recognized as regular seasonal conditions affecting areas from Texas to Canada and from the Rocky Mountains to the Mississippi River.

While my invention was primarily designed for use during dust storms, it should be understood that it is also useful for many other purposes. In threshing grain it serves as a protection from flying chaff. Laborers working in foundries and machine shops also require such protection. The device is also very useful under extreme weather conditions, either hot or cold, for protecting the wearer from the wind or sun. When a housekeeper sweeps a dusty room the flying dust contains many disease germs which may be filtered out by means of my improved dust mask, particularly when it has been slightly dampened or impregnated with suitable oils or chemicals.

The transmission of disease germs through the air from person to person may be substantially prevented by the use of the device. Persons suffering from colds and other contagious diseases may prevent transmission of the germs to others by wearing one of these masks.

In addition to protection from dust, a mask constructed according to my invention is also highly useful for protecting the eyes from sparks or flying particles of metal, being much more effective than the conventional glass goggles which are worn by those engaged in certain kinds of work, because the flexible "Plastacell" of which the window is made cannot be shattered by impact. From the above it will be seen that although I have called my device a dust mask, it is nevertheless capable of wide use under a great many different conditions.

It is an object of this invention to provide a new and improved dust mask capable of protecting the eyes, face and ears of the wearer from dust, flying particles and other foreign matter.

It is a further object of my invention to provide a new and improved device of the above described character which may be worn without interfering with the wearing of a hat or cap or spectacles.

Another object of my invention is to provide a new and improved device of the above described character which may be folded into a small compass and carried in the pocket when not in use.

Another object of my invention is to provide a device of the above described character which may repeatedly be washed.

Another object of my invention is to provide a mask of the above described character, and constructed of a new cloth capable of removing the greatest percentage of germs and dust from air passing through it, without restricting the passage of air to such an extent as to interfere with the breathing of the wearer.

Another object of my invention is to provide a mask of the above described character which may be partially removed from access to the nose and mouth without delay or inconvenience.

Another object of my invention is to provide a mask of the above described character, and having a flexible, transparent window portion constructed of a material which will not interfere with the vision of the wearer, and yet will protect the eyes from floating or flying particles of dust, metal chips and the like.

Another object of my invention is to provide a mask of the character described in the preceding paragraph, and in which the transparent window portion is non-shatterable, and cannot readily be set on fire, and which, if it does become ignited, will not explode, or burn any more rapidly than does the cotton cloth itself.

Another object of my invention is to design a mask of the above described character in such a manner that a single size of mask may be fitted to the head of any wearer.

Other objects and advantages of my invention will appear from the following description and accompanying drawing, referring to which;

Figure 1 shows a face protecting mask constructed according to my invention in position on the head of a wearer.

Figure 2 shows a front elevation of the mask.

The mask comprises a lower portion which is generally designated by the reference numeral 1, a window portion 2 and ear protecting sections 3. The lower portion is made of what is known as bleached cotton print cloth, preferably woven about 60 threads per inch warp and 48 threads per inch, weft, unbleached, and of a weight of approximately 6.25 lbs. per square yard. This

portion of the mask is semi-circular in shape and is provided with a draw string passage 4, formed by a folded binding strip of bias-cut material sewed along the line 5.

The bias strip is carried on up to bind the outer edge of the ear piece 3, which is in line with the outer edge of the lower portion. In order to bring the draw string 6 out at the junction of the lower portion, and the ear piece, the bias strip is perforated as indicated by the dotted line 11, and reinforced at this point to prevent tearing at this point.

The draw string 6 is formed of rubber and cotton woven elastic tape. The ear pieces 3 are formed of separate pieces of cloth cut substantially square. For convenience these may be made of the same material as the lower portion of the mask. It will be understood, however, that these pieces may be made of different material if desired, as they are not required to do any substantial amount of filtering.

The window piece 2 is formed from a thin sheet of transparent material, conveniently the flexible, cellulosic substance known as "plastacell". I prefer not to use celluloid on account of its highly inflammable and explosive character. "Plastacell" can be burned but is not considered any more inflammable than the materials used for ordinary clothing. The ends of the window are attached to the inner edges of the ear pieces 3 at the seams 7.

The lower edge of the window is attached to the central part of the upper edge of the lower fabric portion of the mask along the seams 8.

A tie string 9 formed of non-elastic tape is sewed to the upper edges of the ear pieces and the window, which are in line with each other, so as to form a binding or reinforcement therefor. This string is adapted to extend around the head and be tied in a knot as indicated at 10 in Figure 1. The draw string 6 being elastic may be stretched sufficiently to give the wearer access to his nose and mouth, even when the ends of the string 6 are tied in a knot, as indicated at 11 in Figure 1.

The lower part of the mask may be treated with medicated oils capable of catching and killing germs as well as retaining dust. The nature of such oils and medicaments is well known to those skilled in the art.

It will be seen from the foregoing description that this mask need only be made in one size, as it may be fitted to the head of any wearer merely by adjusting the upper tie string and the lower elastic draw string.

It will be understood that the weave and weight of cotton cloth is usually specified before bleaching and that the shrinkage which occurs in the bleaching process changes both the weave and the weight. In the description and claims I have described the weave and weight of the material before bleaching, but it will be understood that the material is intended to be bleached and shrunk before it is made up into masks.

I claim:

1. A dust mask comprising a substantially semi-circular lower portion, the arcuate edge of said portion being turned downwardly and provided with a draw string, a flexible window being attached to the central part of the upper edge of said lower portion, a tape binding for the upper edge of said flexible transparent portion, the ends of said tape binding being extended to form a tie string, and a pair of ear protecting portions attached at the ends of the transparent portion to the upper tie string and to the outer ends of the upper side of the lower portion.

2. A face protecting mask comprising a substantially semi-circular lower portion, a strip of transparent material attached to the upper edge of said lower portion, rectangular ear protecting portions attached at each end of the transparent strip and to the upper edge of the lower portion, the upper edges of the ear protecting portions being in line with the upper edge of the transparent strip, and the outer edges of the ear protecting portions being substantially in line with the outer edges of the lower portion.

3. A face protecting mask comprising a substantially semi-circular lower portion, a strip of transparent material attached to the upper edge of said lower portion, rectangular ear protecting portions attached at each end of the transparent strip and to the upper edge of the lower portion, the upper edges of the ear protecting portions being in line with the upper edge of the transparent strip, and an elastic string in the arcuate edge of the lower portion.

4. A protective mask comprising a lower portion having an arcuate edge provided with a draw string, a flexible window attached to the upper edge of said lower portion, reinforcing means for the upper edge of said flexible transparent portion, said means being extended to form a tie string, and a pair of ear protecting portions attached to the ends of said transparent portion, to said reinforcing means, and to the upper edge of said lower portion.

EDWARD WANGELIN WAGNER.