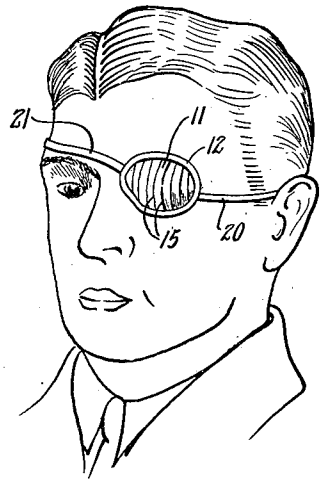
Nov. 20, 1945. M. M. WERNER 2,389,223

EYE-SHIELD

Filed Feb. 20, 1941

Fig. 1



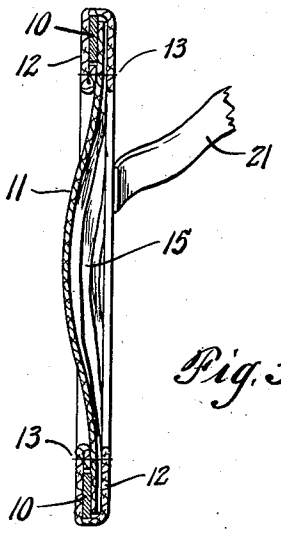


Fig. 3

Fig. 2

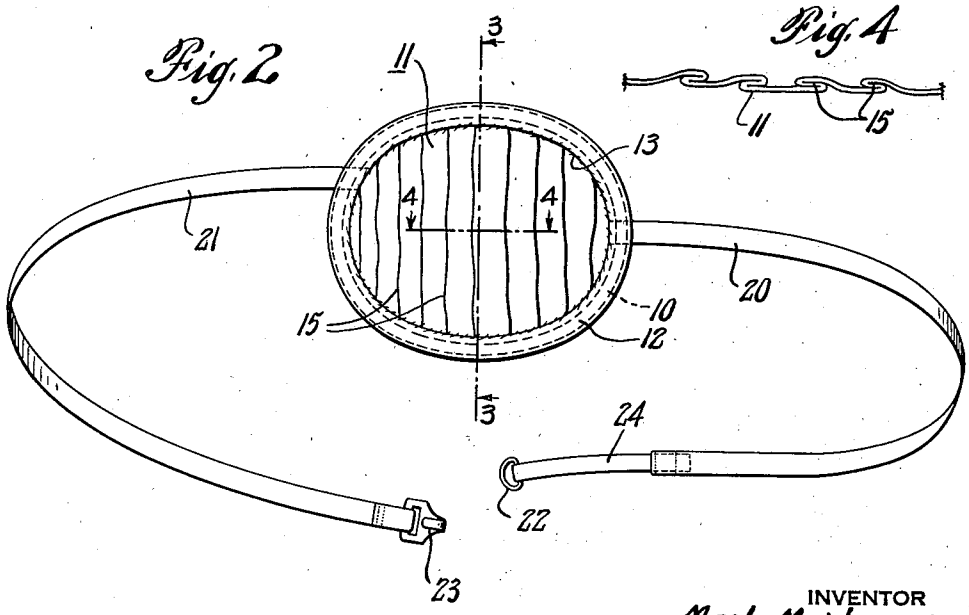


Fig. 4

INVENTOR
Mack M. Werner
BY
Morgan, Finnegan & Durham
ATTORNEY

Patented Nov. 20, 1945 2,389,223

UNITED STATES PATENT OFFICE

2,389,223

EYESHIELD

Mack M. Werner, Brooklyn, N. Y.

Application February 20, 1941, Serial No. 379,759

4 Claims. (Cl. 2—15)

The invention relates to eye-shields or eye-protectors, commonly called eye-patches.

Objects and advantages of the invention will be set forth in part hereinafter and in part will be obvious herefrom, or may be learned by practice with the invention, the same being realized and attained by means of the instrumentalities and combinations pointed out in the appended claims.

The invention consists in the novel parts, constructions, arrangements, combinations and improvements herein shown and described.

The accompanying drawing, referred to herein and constituting a part hereof, illustrates one embodiment of the invention, and together with the description, serves to explain the principles of the invention.

Of the drawing:

Fig. 1 is a perspective view of a person's head wearing an eye-shield embodying the invention;

Fig. 2 is a full-size perspective view from the front of said eye-shield;

Fig. 3 is a vertical section on line 3—3 of Fig. 2; and

Fig. 4 is an enlarged section on line 4—4 of Fig. 2.

The invention is directed to providing a novel and improved eye-shield construction. Objects of the invention are to provide an opaque or light-tight eye-shield or patch which is conformable to the individual configuration and facial structure of the person wearing it. In presently known forms of eye-patches the patch is usually formed of a flat and/or substantially rigid member which is very uncomfortable and indequate because it does not conform to the orbital structure of the individual. Moreover such flat rigid patches are very uncomfortable because they press tangentially against the eye-ball thereby increasing the discomfort of the wearer and frequently irritating the eye. With my invention I provide a shield or patch having a deformable frame or rim which permits the shield to be moulded or shaped to conform exactly to the orbit of the eye of the individual wearer and to retain said shape during the time it is being worn.

Another object of the invention is to provide an improved eye-shield or patch which is adapted to accommodate a substantial quantity of dressing or bandage material between the eye and the adjacent shielding surface of the patch. Moreover my invention is provided with means whereby the amount of material accommodated between the eye and the patch may be varied and the patch will automatically adapt itself to such variations in thickness or quantity of dressing material while at all times performing its required functions of excluding light from the eye as well as dust and other foreign substances.

Another object of the invention is to provide means for attaching an eye-patch or shield to the wearer which holds the shield accurately and securely in position but without discomfort to the wearer. Presently used eye-shields are usually held in position by elastic bands or straps bound across the forehead and around the head of the wearer, but same, because of their position with respect to the shield are frequently found to slip and especially apt to move down across the uncovered eye to the great annoyance of the wearer. My invention provides a novel construction and arrangement of shield-attaching and supporting means on the wearer's head which avoids this and other difficulties.

It will be understood that the foregoing general description and the following detailed description as well are exemplary and explanatory but are not restrictive of the invention.

Referring now in detail to the present preferred embodiment of the invention, illustrated by way of example in the accompanying drawing, the construction of an eye-shield in accordance with the invention is shown in Figs. 2 and 3. As embodied, a generally oval frame 10 is made of deformable material of such nature that any desired bend or curve or shaping may be imparted to the frame and held by it so that it will conform to and fit about and into the ocular orbit of the individual wearer. For this purpose the frame 10 is preferably made of a relatively soft, deformable or non-elastic metal in sheet form, such as a relatively thick lead foil or flat wire or similar soft metal such as tin or or the like. Any other material, such as a plastic which is capable of being easily bent into a shape which it will retain until acted upon by an equal restoring force, may be used but I have found that a thin lead-sheet material such as described is most suitable because of its inherent characteristics and also because of its cheapness. The frame 10 may be made in various sizes although the range of such sizes need not be considerable inasmuch as the deformability of the frame adapts a patch for the average eye orbit to be so modified in shape that it will fit a relatively large range of sizes. It will be understood that the frame may be bent in any direction so as to change the outline of the patch and also to vary its curvature.

The frame 10 is covered with an opaque light-

excluding member comprising the body of the shield or patch itself and said covering material is preferably of a heavy opaque black satin cloth 11. As shown the cloth 11 forms a fairly loose diaphragm or membrane within the frame 10, the peripheral portion or edge of said diaphragm lying against one side of the frame. The diaphragm cloth is suitably attached near its periphery to the frame as by a black silk binding tape 12 which overlies the frame and is sewed with a suitable binding thread 13 so as to attach together the frame, the diaphragm 11 and the binding tape, thereby completely enclosing the frame with cloth in a neat comfortable covering.

In accordance with the invention, diaphragm member 11 of the patch is constructed so as to accommodate different quantities of dressing or bandage material between the eye and the patch. In accordance therewith, the diaphragm 11 is provided with a plurality of vertically-extending pleats or loose folds 15 which permit the space between the patch and the eye to be occupied by either a small or a large amount of dressing material. When no dressing is required, the patch may be flattened out so that the cloth 11 will lie substantially in the plane of the frame, bulging just enough to accommodate the eye ball comfortably. However, due to the expansibility of the pleats 15 a relatively large amount of gauze or other dressing material may be packed between the eye-ball and the patch, the expansion of the pleats permitting same to be done, while the frame remains in close contact with the wearer's face or orbit. The pleats or folds also aid in reducing transmission of light through the patch, both by diffusion and through the multiple thickness at the folds.

It will be understood that the invention is not specifically limited to the particular pleated construction shown and described but that the invention comprises in general any practical means whereby the space between the eye-ball and the patch may be filled with different amounts of materials and wherein the patch itself is expansible to accommodate such different amounts. In this respect any expansible diaphragm may be used, such as an elastic rubber or similar material. I have found, however, that the pleated cloth as shown and described is most suitable from the standpoint of comfort, health and expense. Preferably a cloth having a water-proof coating on one side should be used, said side being the inner or eye-contacting side of the patch, so as to retain moisture on the eye and dressing.

Means are provided for attaching the patch to the head of the wearer and as shown same comprises a band or strip 20 attached at one end of the oval frame 10 and preferably at about the central horizontal axis thereof. The opposite end of the frame 10 has a similar band 21 attached thereto, but the point of attachment is somewhat above the central horizontal axis of the oval. The bands 20 and 21 may be suitably linked for closure at the rear of the head of the wearer as by a ring 22 and hook 23. Both bands may be made of elastic tape or like material or may be non-elastic and provided with a relatively short elastic extension 24 in known manner. As will appear from Fig. 1, the staggering of the two bands at different levels vertically of the patch provides that they will extend along natural lines when they are bound about the wearer's head, thus the upper band 21 will tend to run along the wearer's forehead above his eyebrow from the upper corner of the patch, while the lower band will run along his temple and over his ear. Thus tension on the two bands will cause them to remain in these respective positions and there will be no tendency of the upper band 21 to slip down over the eyebrow as with former constructions.

Although the invention has been shown and described in connection with its application as an eye shield, it will be apparent that it has a vast field of usefulness as a protective covering for other portions of the body. The invention may be utilized as a bandage or a bandage covering or carrying device for injuries on arms, legs, neck, body, etc., and may be made in various sizes as required by the area to receive the covering.

The invention in its broader aspects is not limited to the specific mechanisms shown and described but departures may be made therefrom within the scope of the accompanying claims without departing from the principles of the invention and without sacrificing its chief advantages.

What I claim is:

1. An eye-shield including in combination a diaphragm for overlying the eye of a wearer and a frame for supporting the diaphragm, the frame being moldable and relatively inelastic so as to be conformed easily to the configuration of the wearer.

2. An eye-shield including in combination a diaphragm for overlying the eye of a wearer and a frame for supporting the diaphragm, said diaphragm being expansibly pleated to accommodate dressings between the eye and the shield.

3. An eye-shield including in combination a pliable diaphragm for overlying the eye of a wearer and a frame for supporting the diaphragm, said diaphragm being expansibly pleated to accommodate dressings between the eye and the shield.

4. A protective covering for the body including in combination a moldable and relatively inelastic frame and an expansible diaphragm attached thereto for overlying a portion of the body.

MACK M. WERNER.