Oct. 17, 1933. S. M. GRISWOLD 1,930,972

EYE PROTECTOR

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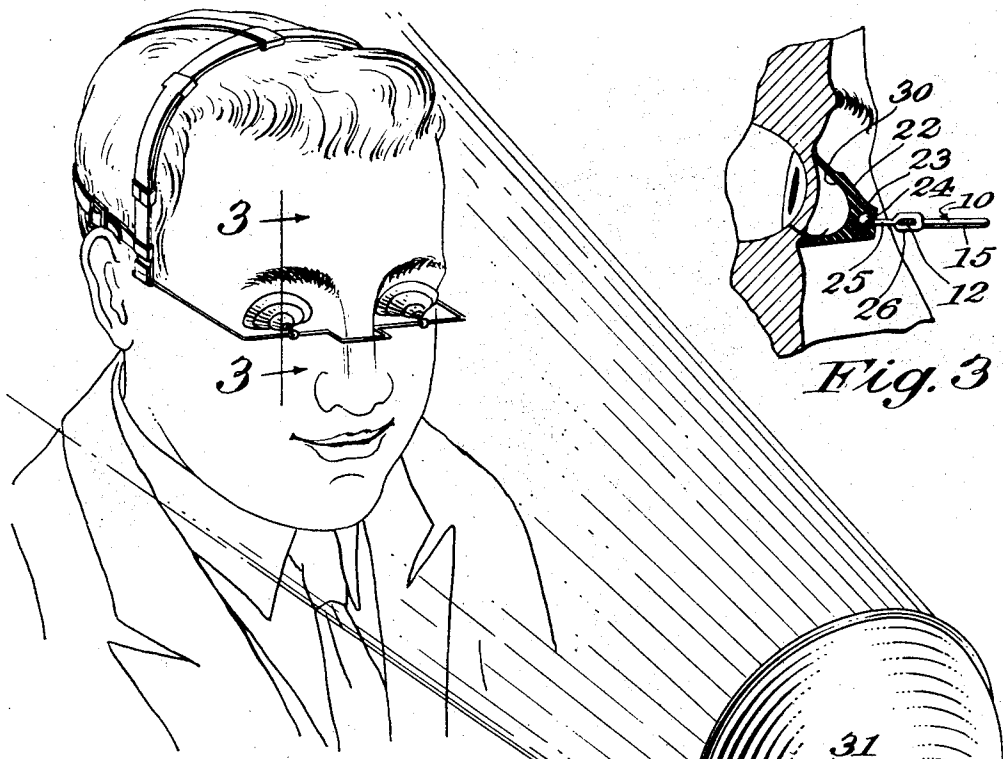


Fig. 2

Fig. 3

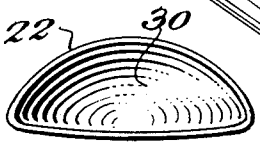


Fig. 5

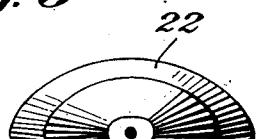


Fig. 4

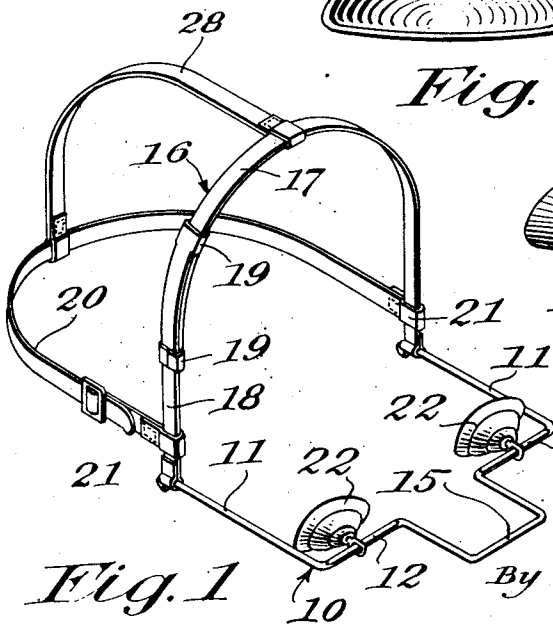


Fig. 1

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EYE PROTECTOR

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8 Claims. (Cl. 2—15)

The use of ultra violet light rays for treating various human ailments has been adopted and approved in general by the medical profession. Such rays affect the skin in such a way as to give it the appearance of having been sunburned. This action has been taken advantage of in recent years by many people to improve their personal appearance. It has become a common practice with many people who have become pale because of a run-down condition or lack of exposure to sunlight or for other reasons, to subject their face periodically to the action of ultra violet rays to burn or tan the same and impart thereto a healthier appearance. This practice has become extremely popular in recent years because of the development of low cost ultra violet ray lamps.

When subjecting the face to the action of ultra violet rays it is necessary to provide adequate protection for the eyes. Goggles are commonly used for this purpose. However, goggles exclude the action of the rays from a portion of the nose and a large area surrounding and adjacent the eyes. Consequently, if one's face is subjected to the action of ultra violet rays while the eyes are protected by goggles, a burn or tan will be obtained which will have an artificial appearance because of the presence of the unburned areas which have been covered by the goggles.

It is an object of the present invention to provide a device which will protect the eyes while the face is being subjected to the action of ultra violet rays but which will permit full action of the rays upon the other parts of the face.

The invention will be more clearly understood from the following description in conjunction with the accompanying drawing: in which,

Fig. 1 is a perspective view of a device embodying the invention;

Fig. 2 is a view showing the device in position upon the head;

Fig. 3 is a sectional view taken upon the line 3—3 of Fig. 2; and

Figs. 4 and 5 are front and rear elevational views respectively of the eye protector.

Before explaining in detail the present invention it is to be understood that the invention is not limited in its application to the details of construction and arrangement of parts illustrated in the accompanying drawing, since the invention is capable of other embodiments and of being practiced or carried out in various ways. Also it is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation, and it is not intended to limit the invention claimed herein beyond the requirements of the prior art.

The embodiment of the invention illustrated comprises a frame 10 of fine but stiff wire or similar material having side portions 11 and front portions 12 extending inwardly therefrom. The frame is preferably formed of material, such as wire, which will provide a self-sustaining or substantially rigid frame as distinguished from limp or non-self-sustaining material, such as elastic or cord. Moreover, the use of a fine wire not only provides a suitable support for the eye cups hereinafter described, but allows all portions of the face to be subjected to the action of the light rays. In order to stiffen the frame, the front portions 12 may be joined, if desired, by an intermediate portion 15 of substantially U-shape. The U-shape portion 15 is preferably so formed that it is spaced from the sides and frontal portion of the nose, whereby not to contact therewith. The frame 10 is carried by a band 16, the ends of which are suitably secured to the rear ends of the side portions 11 of the frame. The side portions 11 of the frame may be connected to the band 16 for support by the band in any suitable manner. As illustrated in the drawing, the side portions extend through sockets formed by bending the ends of the band and, as will be understood, in this manner the frame 10 is supported entirely by the band so that its sides 11 and forward portions 12, 15 may be maintained in position while out of contact with the face and without applying pressure to the eyes through the eye cups hereinafter described. Preferably, the band 16 is adjustable and, as illustrated, is formed of two pieces of sheet metal 17 and 18, the free ends of which overlap and slidably engage. To the free end of each of the pieces 17 and 18 a clip 19 is secured which embraces and slidably and frictionally engages the other piece. An adjustable band 20 of elastic or similar material is provided at its ends with a loop 21 surrounding the band 16. A strap 28 connects intermediate points of the bands 16 and 20.

Eye protectors 22 are adjustably mounted upon the front portions 12 of the frame 10 to extend rearwardly therefrom so that they may be properly positioned over the eyes of any person using the device. Each eye protector 22 is made of a soft pliable material, such as rubber, and is shaped in the form of a cup, the edge of which is curved to engage the eye lids when closed. Preferably, the main portion of the bottom wall of the cup is thicker near its edge than the top wall and the corner portions of the bottom wall and the thickness of the top wall and said corner portions gradually increase from their edges towards the front of the eye protector. The edges of the top and bottom walls are so shaped that when the protector is positioned upon the eye and viewed in elevation, the edge of the top wall will appear curved while the edge of the bottom wall will be substantially horizontal or parallel to the upper edge of the bottom eye lid and barely overlap the same when the lids are closed. When constructed in this manner, the eye protector

adapts itself to fit over eyes of various sizes and shapes. A socket 23 is formed in the forward portion of each eye protector to receive a ball 24 upon one end of an attaching member 25, the other end of which is provided with a hook 26 slidably embracing one of the front portions 12 of the frame. Preferably, the front portions 12 are rectangular in cross section so as to prevent rotation of the eye protectors about the same. The rear face 30 of each eye protector is generally concave with its edge adapted to rest upon the eyeball when the eyelids are closed.

When the face is to be exposed to ultra violet light rays, generated as by a lamp 31 as shown in Fig. 2, the band 16 is fitted upon the head and, preferably, is adjusted so that the rear ends of the side portions 11 of the frame 10 are positioned approximately in a plane through radii of the eye balls passing through the centers of the pupils. The eye protectors 22 are adjusted along the front portions 12 of the frame and are turned, if necessary, about the balls 24 so that the rear faces 30 rest comfortably upon the eyeballs when the lids are closed. The ball and socket mounting for the protectors 22 not only permits universal movement of the cups, whereby the same may accommodate themselves to the individual user, but also, because of the pliability of the material from which the eye cups are formed, the latter may be freely removed for sterilization or replacement. The band 20 and strap 28 are positioned around the head so as to hold the frame 10 and eye protectors 22 in the above described positions. Inasmuch as the frame 10 is fine and spaced from the face, the full action of rays may be obtained upon all parts of the face by moving or nodding the head slightly while the face is being exposed to the rays. The eye protectors 22 are so designed and shaped as to exclude the rays only from those portions of the eyelids which are not prominently visible when the eyes are open. The band 16 together with the straps 20 and 28 support the frame 10 in its operative position without engagement with any part of the face, the eye protectors engage the eyelids merely to prevent access of the light rays to the eyes. It will be understood that the frame 10 is supported entirely from the band 17 and is entirely out of contact with the face. This construction permits the eye cups to be supported for universal movement upon the balls 24 since no supporting strain is transmitted to the eye cups. This is particularly important in the use of eye cups of the character described since these cups conform closely to the curvature of the eye and do not engage the entire eye socket as is customary in many types of goggles. A relatively large eye socket enclosing cup may be readily used for supporting a goggle, but eye protecting cups of the character described, which closely follow the upper edge of the lower eyelid and the curvature of the upper eyelid, I have found should not be utilized as a supporting medium because the resulting pressure is harmful to the eye and tends to urge the lower edge of the cup between the eyelids onto the eye ball itself. By supporting the cups and the frame 10 entirely from the band 17, pressure on the eye through the eye cups is avoided and the eye cups are merely positioned in front of the eyes while the ball and socket support therefor as well as the lateral adjustability of the members 25 permit the cups to move freely in any plane whereby to accommodate themselves to the varying ocular dimensions of different users.

I claim:

1. A device adapted to be supported upon one's head to protect the eyes without causing face marking when the face is subjected to ultra-violet light rays comprising a substantially rigid frame having side portions adapted to extend forwardly from points adjacent opposite sides of the head along and spaced from the sides of the face and front portions extending inwardly from the forward end of the side portions across the eyes and spaced therefrom and out of engagement with the front of the face, eye protectors carried by said front portions of the frame and extending therefrom toward the eyes, said eye protectors comprising cups of relatively soft opaque material having edge portions shaped to follow closely the juncture of the lower and upper eyelids and the contour of the upper eyelid, and means adapted to engage the head and support said frame side pieces and the eye cups entirely from the rearward portions of said frame at the sides of the head whereby to relieve the eyes of pressure.

2. A device adapted to be supported upon one's head to protect the eyes without causing face marking when the face is subjected to ultra-violet light rays comprising a substantially rigid frame having side portions adapted to extend forwardly from points adjacent opposite sides of the head along and spaced from the sides of the face and front portions extending inwardly from the forward end of the side portions across the eyes and spaced therefrom and out of engagement with the front of the face, said front portions having a connecting portion adapted to bridge the nose out of contact therewith, eye protectors carried by said front portions of the frame and extending therefrom toward the eyes, said eye protectors comprising cups of relatively soft opaque material having edge portions shaped to follow closely the juncture of the lower and upper eyelids and the contour of the upper eyelid, and means adapted to engage the head and support said frame side pieces and the eye cups entirely from the rearward portion of said frame at the sides of the head whereby to relieve the eyes of pressure.

3. In a device of the character described, a supporting frame, eye cups on said frame formed of pliable material and each comprising a lower edge shaped to closely follow the line of juncture of the lower and upper lids and to conform closely to the contour of the upper eyelid, and means for mounting said eye cups detachably and adjustably on said frame comprising ball and socket members on the cups and frame respectively.

4. A device adapted to be supported upon one's head to protect the eyes when the face is subjected to ultra-violet light rays comprising a substantially rigid frame having side portions adapted to extend forwardly from points adjacent opposite sides of the head along and spaced from the sides of the face and a front portion extending inwardly from the forward end of each of the side portions and spaced from and out of engagement with the front of the face, a member adjustably carried by each of the front portions of the frame, an eye protector shaped to fit closely against the eyelids carried by each of said members, and means to support said frame side portions on the head at their rearward portions.

5. A device adapted to be supported upon one's head to protect the eyes when the face is subjected to ultra-violet light rays comprising a

substantially rigid frame having side portions adapted to extend forwardly from points adjacent opposite sides of the head along and spaced from the sides of the face and a front portion extending inwardly from the forward end of each of the side portions and spaced from and out of engagement with the front of the face, a member adjustably carried by each of the front portions of the frame, an eye protector adjustably carried by each of said members, and means to support said frame side portions on the head at their rearward portions.

6. A device adapted to be supported upon one's head to protect the eyes when the face is subjected to ultra-violet light rays comprising a substantially rigid frame having side portions adapted to extend forwardly from points adjacent opposite sides of the head along and spaced from the sides of the face and a front portion extending between the forward ends of the side portions across the front of the face and out of engagement therewith, eye protectors carried by said front portion of the frame and extending to engage the eyes, and means to support said frame side portions on the head at their rearward portions.

7. A device adapted to be supported upon one's head to protect the eyes when the face is subjected to ultra-violet light rays comprising a substantially rigid frame having side portions adapted to extend forwardly from points adjacent opposite sides of the head along and spaced from the sides of the face and front portions extending inwardly from the forward end of the side portions and spaced from and out of engagement with the front of the face, eye protectors carried by said front portions of the frame and extending therefrom, each of said eye protectors being arranged and shaped to engage the upper eyelid when closed and having its bottom edge shaped to conform substantially to the curvature of the upper edge of the bottom eyelid, and means to support said frame side portions on the head at their rearward portions.

8. A device adapted to be supported upon one's head to protect the eyes when the face is subjected to ultra-violet light rays comprising a substantially rigid frame having side portions adapted to extend forwardly from points adjacent opposite sides of the head along and spaced from the sides of the face and a front portion extending inwardly between the forward ends of the side portions across the front of the face and out of engagement therewith, a pair of members adjustably carried by said front portion of the frame, an eye protector adjustably carried by each of said members and extending therefrom toward the eyes, each of said eye protectors being arranged and shaped to engage the upper eyelid when closed and having its bottom edge shaped to conform substantially to the curvature of the upper edge of the bottom eyelid, and means to support said frame side portions on the head at their rearward portions.

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