Feb. 22, 1944. R. D. SMALL 2,342,377

EYE SHIELD

Filed May 27, 1940

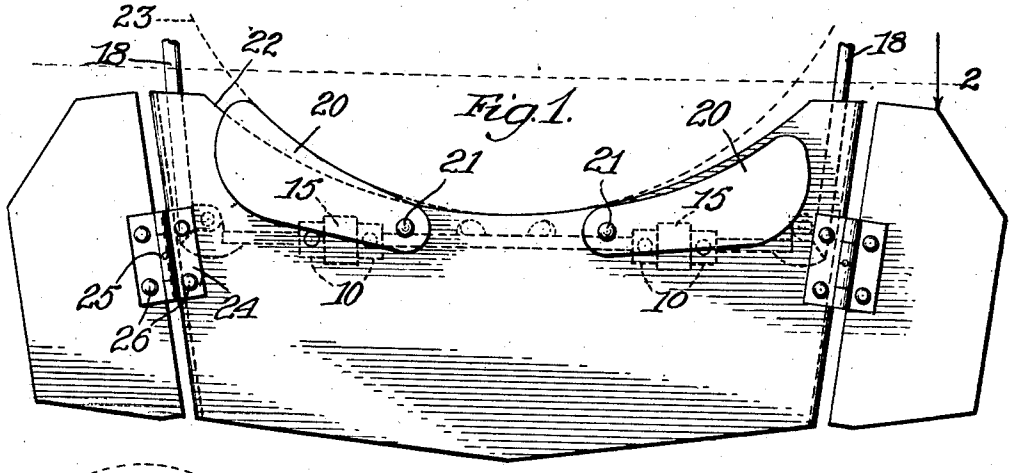


Fig. 1.

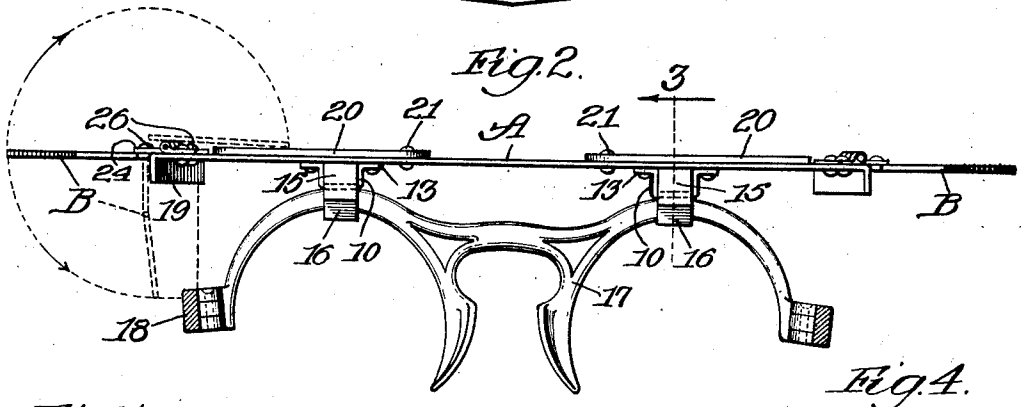


Fig. 2.

Fig. 7.

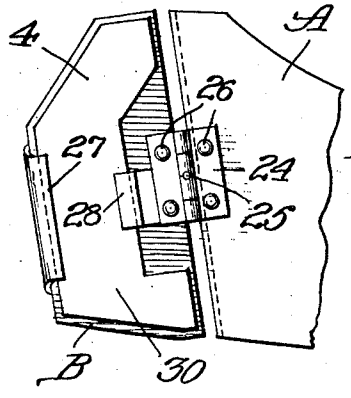


Fig. 3.

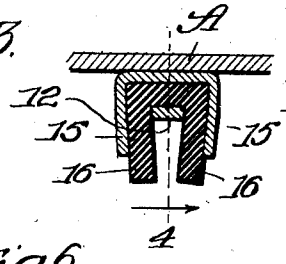


Fig. 4.

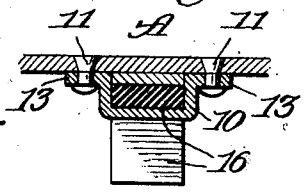


Fig. 6.

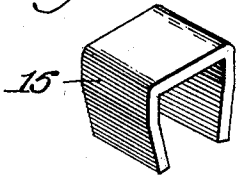
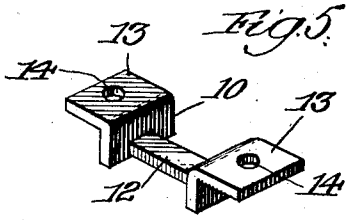


Fig. 5.



Inventor:
Ralph D. Small,
By Chritton, Wiles, Davies, Kirschbaum & Dawson,
Attys.

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EYE SHIELD

Ralph D. Small, Chicago, Ill.

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6 Claims. (Cl. 2—12)

This invention relates to a vision-protecting and improving device, and more particularly to an adjustable eye shield.

An object of the invention is to produce a protective device of simple and effective construction for protecting vision by deflecting or occluding interfering light, dust, rain, and other impedimenta. A further object is to provide such a device which is adjustable and tiltable to enhance vision, eliminate glare, and provide a contour fitting the device to the particular curvature of the forehead and other features of the wearer. A still further object is to provide a protecting shield device which may be readily supported upon eye glasses of various types or other members to permit swinging the shield into different angular positions while at the same time gripping the glasses in such a manner as to eliminate undesirable vibrations, etc. A still further object is to provide a shade and nose frame support therefor in collapsible or foldable relationship. Other specific objects and advantages will appear as the specification proceeds.

The invention is illustrated, in a preferred embodiment, by the accompanying drawing, in which—

Figure 1 is a plan view of apparatus embodying my invention; Fig. 2, a front view in elevation; Fig. 3, an enlarged transverse sectional view, the section being taken as indicated at line 3 of Fig. 2; Fig. 4, a detail sectional view, the section being taken as indicated at line 4 of Fig. 3; Fig. 5, a bracket support or anchor which may be employed in the structure; Fig. 6, a perspective view of a clamp member employed with the anchor shown in Fig. 5; and Fig. 7, a broken plan view illustrating a modified form of structure embodying my invention.

In the illustration given, A designates the main shield body; and B, side shields adjustably secured to the main shield A.

The main shield A consists of a thin strip of material formed of light shielding material of a suitable type. I have found that opaque cellulose acetate or other plastic material, in sheet or molded form, and other like materials may be used, and because of their light weight, are quite desirable. The material may be extremely light and thin, say, from .090 to .015 inch thick, and the weight need not exceed one ounce. Preferably, the outside of the article is polished, but the inside is dulled to prevent glare.

The shield A is shown provided with a pair of anchor members 10 secured by rivets 11 to the shield. It will be noted that the anchor member 10 is provided with a central cross bar 12 and with wing flanges 13, each of the wing flanges being provided with a perforation 14 adapted to receive the rivet 11. As shown more clearly in Fig. 4, a clamping member 15 of brass or other suitable malleable metal extends above and about the bar 12, and clamps between it and the bar 12 a resilient rubber grip or bushing 16.

The rubber grip or bushing 16 is adapted to grip the lens of a pair of glasses or the rim thereof, a spectacle support, or a nose frame support for the shade, such as illustrated in the drawing and designated by the numeral 17. The member 17 is provided with the usual rearwardly-extending temples 18. As far as the present invention is concerned, it makes no difference whether the member 17 is in the form illustrated, carrying no lenses but serving merely to support the shade, or whether it is in the form of glasses provided with a supporting nose-piece or glasses equipped with a rim. The grip member 16 is adapted to engage either the glass itself or the rim or the support frame, providing a yielding but firm hold thereon. The grip member may be as shown, or may be of any suitable shape, but is preferably provided with elastic material which will prevent injury to the glasses or rim while at the same time firmly gripping the same and enabling the shade to be tilted in an upward or downward position thereon and hold its position, at the point to which it is tilted. The long fingers of the grip contribute toward preventing the device from tilting too far forward. The elastic grip structure provides greater precision in adjustability than is even found with a window-shade and with only a slight touch of the finger.

The main shield A is provided at each end with a downwardly-extending eave or flange 19 which prevents light from entering the hinged gap. The flanges 19 may be in the angular position shown, or they may be tilted slightly outwardly.

In order to adapt the shield A to the particular curvature of the forehead, I provide auxiliary shields 20 which are hinged upon the top portion of the shield A by means of rivets 21. The shields 20 are provided with a curvature of a smaller radius than the curvature of the inner edge 22 of shield A, thus adapting the shield to a contour line 23, indicated in Fig. 1 to represent a forehead of a smaller radius.

The side pieces or wings B may be formed of the same material as employed for the main shield A and may be secured in adjustable tilted rela-

tionship to main shield A by any suitable means. As illustrative of such connection, I have shown hinges **24** which are provided with an indentation **25** serving to increase the friction between the curls and rod of the hinge and to cause the hinge to maintain the position to which it is turned. Any other suitable means for creating friction so as to cause the wings B to assume the desired angular position may be employed. Rivets **26**, or any other suitable means, may be employed for adjustably connecting the wing shields B to the main shield A. If desired, the outermost leaf of the hinge may be attached to the inner side of the wing.

In Fig. 7, I have shown the wing shield B provided with guides **27** and **28**, adapted to slidably receive an extension shield **29**. The extension shield is provided with a cutaway central portion **30** adapted to be received between the flanges **28** and **29** carried by the wing member B to enable the member **29** to be shifted rearwardly or forwardly as desired. Thus, an increased shielding effect may be produced by causing the wing shield to be extended rearwardly.

Operation

In the operation of the device, the shield A may be secured to the frame support **17** by causing the rubber grip portion **16** to engage the rim, as illustrated in Fig. 2. When the device is not in use, the wings may be folded so as to lie flat against the top of the wing frame, and the nose support and temples can fold flat against the underside of said frame, to provide a thin collapsible structure. Should glasses be worn with or without rims, these may likewise be attached to the grip members, and when the device is not in use, the wings may be folded against the top of the wing frame, as above.

In folding the device, the member **19** may be folded compactly toward the front or rear edge on the underside of the main shield, and the wing members may be folded flat on the upper side thereof.

The eave portions or side edges of the main shield, as well as the wings, are inclined inwardly in a forward direction so as to more sharply focus or define the object observed, as well as to adjust more easily to different shaped heads and to allow free play of the temples of the spectacles or glasses.

When the shade is worn, the frame A is supported above the eyes and the rear portion of the shade is brought against the forehead. In order to secure a conforming engagement with the forehead, the auxiliary shields **20** may be pressed rearwardly. In order to increase the sharpness of vision, as well as to protect the eyes from glare, dust, rain, and other impedimenta, the end members B may be pressed downwardly to a vertical or outwardly tilted position. This exclusion of the light results in sharpening the focus and increasing the vision, while at the same time protecting the eyes and increasing the comfort of the wearer. It will be noted that the wearer can readily tilt the main frame A upwardly or downwardly as desired, the glasses rim or rim of the frame support providing a fulcrum or pivot for the gripping members **16**. Thus, an extremely lightweight shade is provided which enables the light to be admitted or excluded about the glasses or eyes of the wearer to the extent desired. The shade extends not only in front of the eyes, but also to the rear of the eyes, the side pieces extending both in front of and rear of the front of the eyes. These side wings or shields operate entirely on the outside of the temples of spectacles. The supplementary shields **20** and **29** may both be pivotally supported, as well as slidably supported, for providing a light sealing closure about the main shield A and wings B. Similar supplementary shield or shields may be employed to extend the front portion of the shield body, such supplementary shields being pivotally or slidably attached. For example, the two supplementary shields, **20** and **21**, may be formed in one slidably mounted member, either for the rear or front portion of the main shield A. If desired, the side wings or pieces B may be swung to the same plane as the main shield A and the entire shield and wing structure tilted upon the rim fulcrum.

It will be understood that considerable variation may be made in the structure of the parts which have been set forth in detail for the purpose of illustration. The parts shown pivotally supported may be made adjustable by sliding or by other equivalent changes.

By employing a shield structure (A and B) of extremely thin and light construction, as illustrated, I have found that the entire structure can be worn comfortably when supported upon the eye glass frame or nose support, thus making it unnecessary to employ specific and separate temple or band means for supporting the shields. The entire assembly, including glasses or nose frame support, when not in use, may be folded and placed within a compact case slightly larger than is required for glasses. The shield and glasses are handled with substantially the same ease and facility as the glasses alone may be handled.

While in the foregoing description, I have set forth minute details and specific structure in order that a clear understanding of the invention might be shown, it will be understood that such description is for the purpose of illustration and that those skilled in the art may widely vary such details without departing from the spirit of my invention.

I claim:

1. In combination with a nose-piece equipped with laterally-extending members and temples, a shield body, means carried by said shield body and providing elastic grips having a pair of spaced fingers on the under-portion of the shield body for releasably and pivotally engaging said laterally-extending members, means for reinforcing and adjusting the spacing between the two fingers of each of the two said grips and side shield members pivotally carried by the end portions of said shield body, said shield body being provided with downwardly extending eaves at the end portions thereof adjacent said wing shields.

2. In a vision-protecting device of the class set forth, a thin shield body, means carried by said shield on the underside thereof and adapted to engage a nose-engaging supporting member, and forehead contour shields carried by said shield body and adapted to be adjusted horizontally toward or from the forehead.

3. In a vision-protecting device of the class set forth, a shield body, means carried by said shield on the underside thereof and adapted to frictionally engage a nose-engaging supporting device, and auxiliary shields carried by said shield body and movable thereon to close an area between the shield body and the forehead of the wearer.

4. In combination, a frame member adapted

to rest upon the nose and equipped with laterally-extending frame portions and with temples, a shield body, resilient spring gripper members carried on the underside of said shield body for gripping the frame members to support the shield body thereon in a desired angular position, said gripper members being adjustable to engage and grip frame members of different sizes and being movable about the frame members to tilt the shield body, the gripper members being frictionally held in any position to which they are moved whereby the shield body when tilted is frictionally held in such position.

5. In combination, a frame member adapted to rest upon the nose and equipped with laterally-extending frame portions and with temples, a shield body, gripper members carried on the underside of said shield body and gripping said frame members to support the shield body in a desired angular position, each of said gripper members including a pair of spaced fingers adjustable with respect to each other to engage and grip frame members of different sizes, the gripper members being movable about the frame members to tilt the shield body and being frictionally held in any position to which they are moved whereby the shield body when tilted is frictionally held in such position.

6. In combination, a frame member adapted to rest upon the nose and equipped with laterally-extending frame portions and with temples, a shield body, a pair of gripper members carried on the underside of said shield body and gripping same frame members to support the shield body thereon in a desired angular position, each of said gripper members including spaced fingers provided with a resilient material and adjustable with respect to each other to engage and grip frame members of different sizes, said gripper members being movable about said frame members to tilt the shield body and being frictionally held in any position to which they are moved whereby the shield body when tilted is frictionally held in such position, and side shield members pivotally carried by the end portions of said shield body, said side shield members being tiltable independently of said temples and being frictionally held in any position to which they are tilted.

RALPH D. SMALL.