July 9, 1940. G. R. AUSTAD 2,206,997

GLASSES AND EYE PROTECTOR

Filed March 2, 1939

FIG. 2.

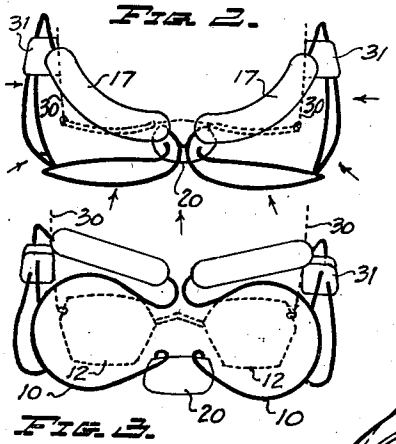


FIG. 3.

FIG. 5.

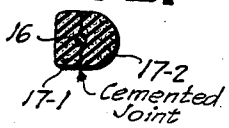
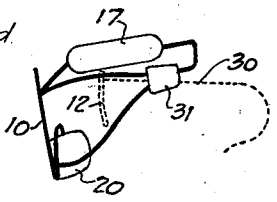


FIG. 6.



FIG. 4.



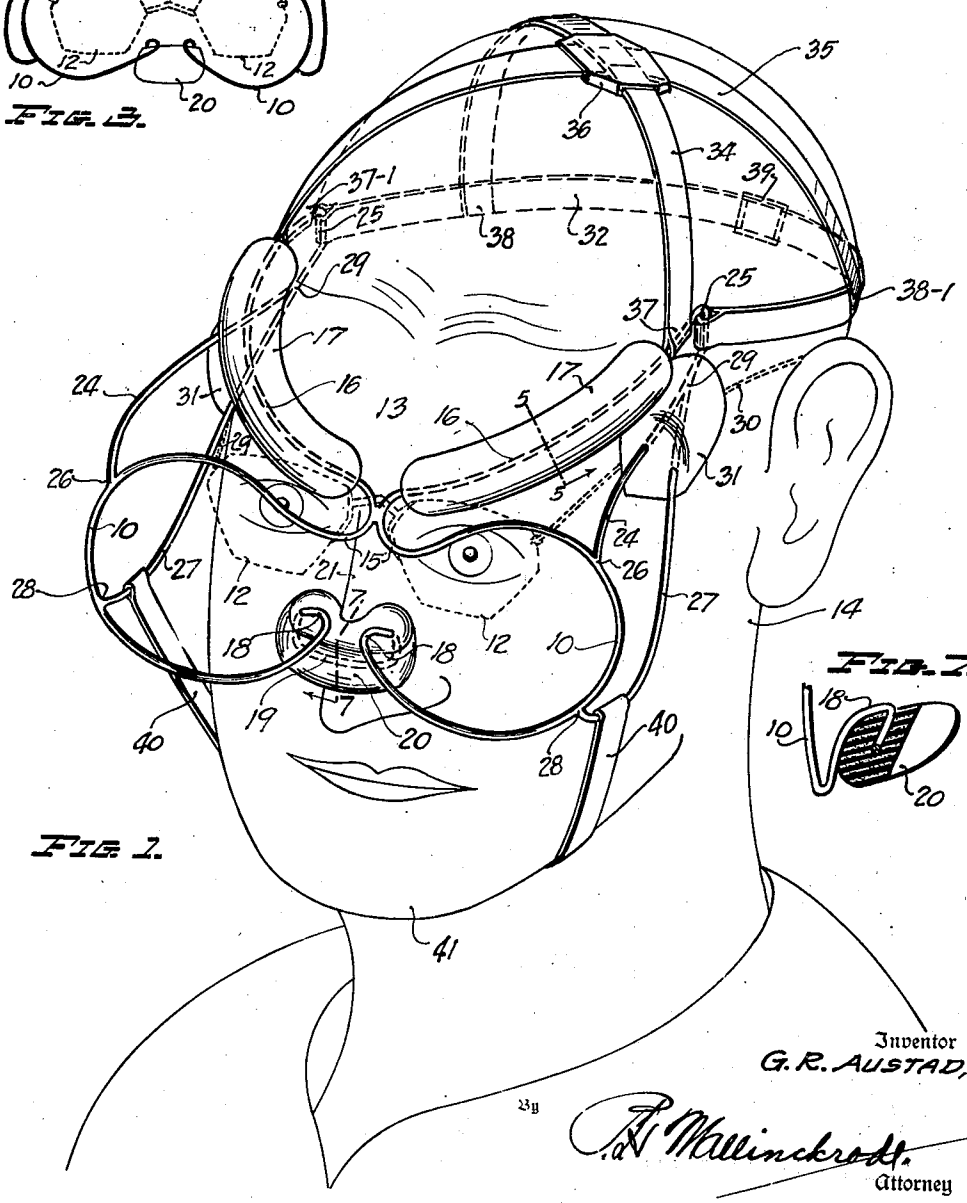


FIG. 1.

FIG. 7.

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GLASSES AND EYE PROTECTOR

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5 Claims. (Cl. 2—9)

This invention relates to a glasses and eye protector which is especially useful in the playing of the game of tennis, but is not restricted thereto, and its principal objects are to provide:

First. Ample strength and durability.

Second. Great resiliency.

Third. Capacity to hold its shape.

Fourth. Comfort for the wearer.

Fifth. Ability to largely resist side-motion.

Sixth. Complete protection from all angles for the wearer.

Seventh. Full view vision with no structural obstructions.

Eighth. A structure which is shock-absorbent, though light in weight.

Ninth. A structure which largely prevents the flow of perspiration onto the glasses.

Tenth. A three-point bearing against the bony structure of a wearer's head whereby solidity and definite freedom from rocking are secured.

In playing the game of tennis, a wearer of glasses is continually exposed to the danger of having the glasses broken through the striking of a tennis ball. Such breakage results in considerable unnecessary expense, and oftentimes in serious eye injuries. Even if glasses are not worn, the device may still afford valuable eye protection.

While protective masks for use in playing baseball or basket ball are well known, such masks are too heavy and too cumbersome for use in playing tennis, and they also obstruct vision.

According to the invention, an open framework having a streamlined contour outlining an ordinary pair of glasses or spectacles, but spaced apart sufficiently from the glasses so that a certain amount of yielding in the framework when hit by a tennis ball, will still keep the glasses from being touched.

In order to provide stability, the protective framework is supported or anchored at strategic points so that all impacts are taken up against the bony structure of a wearer's face. Comfort is provided by efficiently cushioning all portions of the protector framework where these would otherwise bear directly against the wearer's face.

From the anchorages, outriggers forming parts of the framework, extend sufficiently far out from the anchorages to provide the desired protection.

In the drawing, which represents one specific embodiment of the invention,

Fig. 1 represents the structure of the invention, in perspective, as actually worn;

Fig. 2, a diagrammatic plan, drawn to a reduced scale, showing the position of the protector relative to the glasses it is desired to protect;

Figs. 3 and 4, front and side elevations respectively corresponding to Fig. 2;

Fig. 5, a cross-section taken on the line 5—5 in Fig. 1;

Fig. 6, the same as Fig. 5, but showing another construction; and,

Fig. 7, a cross-section taken on the line 7—7 in Fig. 1.

Referring to the drawing, the invention may advantageously consist of two front portions 10, curved to form loops considerably larger than, and spaced forwardly a considerable distance from, the respective lenses 12 of a pair of glasses in position on a wearer 14. Obviously, the loops should be of a size not to let a tennis ball pass through, and yet to obstruct vision as little as possible. The loops 10 constitute an outboard frame which may be supported on outriggers 15, these in turn, forming extensions of the respective anchorages 16. The latter are preferably encased in cushions 17, preferably made of some springy substance such as sponge rubber, and curved to fit snugly against the forehead 13 of the wearer. The frame is preferably made of steel piano wire.

The lower inwardly curved portions 18 of the respective loops 10 may be connected by an anchor 19 which is encased in a cushion 20 made of a substance similar to that used for the cushion 17. The cushion 20 is preferably recessed so as to form a saddle straddling the bony structure such as the bridge of the nose 21 of the wearer. At 24 are outriggers which are connected at 25 to the anchorages 16, and at 26 to the upper portions of the respective loops 10. At 27 are other outriggers or braces which at the front 28 are connected to the lower portions of the respective loops 10, and at the back 29, are connected to the rear portions of the respective outriggers 24. The outriggers 24 and 27 are spaced apart a considerable distance from the respective temples 30 of the glasses 12, so as to form efficient guards. In many cases it is desirable to provide cushions 31 which advantageously may encase the rear portions of the outriggers 24 and 27. The cushions 31 are so disposed that in the normal position of the protector, they, the cushions 31, push inwardly against the respective temples 30 and press them snugly against the head of the wearer, thereby preventing the glasses from being jerked out of position because of any vigorous movements of the wearer. This also has a tendency

to prevent side-play of the protector frame. The outriggers may be V-shaped as shown.

The protector may be fastened to the head of the wearer in any suitable manner, for example, by a flexible band 32 extending around the back of the head and fastened to the protector at the respective bends 25. The entire structure may be suspended from the top of the head by means of two crossed bands 34 and 35, these being provided with the connection 36 which may be slidable on each band for purposes of adjustment. The band 34 may form a hanger at 37 for one of the anchors 16, while the other band 35 may form a hanger at 37—1 for the other anchor 16. The other ends of the bands 34 and 35 may be fastened to the back band 32 at 38 and 38—1, respectively. For the purpose of adjustment, a buckle 39 may be provided for the back band 32. In some cases it may be desirable to provide a chin fastening 40 in order to prevent any inadvertent upper movement of the protector. The chin fastening may be adjusted by a buckle (not shown) under the chin 41.

It is to be noted that the anchors 16 with their cushions 17, and the anchor 19 with its cushion 20, together form what is often termed a "three-point" bearing. Such a bearing, as is well known, it not subject to rocking, but assures always a firm support against the bony structure of a wearer's head. The cushions 17 may be in two pieces, 17—1, 17—2.

The loops 10 form a frontal guard frame which is at least partially supported at the top by the cushioned forehead anchorages and at least partially supported at the bottom by the cushioned nose anchorage, while the outboard braces 24 and 27 extend backward from the two outer opposite portions of the frontal guard frame. The chin fastening 40 connects opposite points along the two outer portions of the frontal guard frame to each other.

In brief summary, the two loops are substantially U-shaped and have their corresponding leg extremities joined to each other in centrally disposed anchors from which the U-loops are freely suspended in space, remote from the anchors and without any intervening stiffening connection. The outriggers 24 and 27 form struts which extend back to substantially the temples of the wearer where they are connected to the forehead anchors 16 and serve to freely concentrate in tension, the impacts received from the U-loops. The concentration of the impacts in the forehead anchors, eliminates the objectionable "cheek-bone rests" of ordinary glasses protectors and gives a tennis player a clear, unobstructed downward vision, which is so much desired.

A specific embodiment of the invention is herein shown and described by way of illustration, but not necessarily to restrict changes which may be justified by the terms of the following claims.

Having fully described my invention, what I claim is:

1. A glasses and eye protector, including in combination, two substantially U-shaped loops having their corresponding leg extremities joined to each other in centrally disposed anchors from which the said U-loops are freely suspended in space, the U-bends thereof being remote from the said anchors; outrigger struts extending back from the said U-bends substantially to the temples of the wearer, and tensionable anchors extending along the forehead of the wearer; the temple extremities of the said struts being joined to the said forehead anchors, whereby impact stresses from the said U-bends are freely transmitted to, and concentrated in, the said forehead anchors, with the result that the downward vision of the wearer is clear and unobstructed.

2. A glasses and eye protector in accordance with claim 1, in which the said U-loops, outrigger struts and forehead anchors are made of resilient metallic wire.

3. A glasses and eye protector in accordance with claim 1, in which one centrally disposed anchor and two forehead anchors constitute a three-point bearing.

4. A glasses and eye protector in accordance with claim 1, but which includes an overhead suspension connection that supports the ends of the outrigger struts and the ends of the forehead anchors in proximity to their common junction points.

5. A glasses and eye protector, in accordance with claim 1, wherein the respective outrigger side portions have substantially a V-shape, and wherein the extremities at the opening of the V-legs are joined to the respective outer portions of the frontal loop portion, while the vertex of each V-shaped outrigger is joined to the respective forehead anchor, and fastening means disposed to secure the protector in place.

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