Aug. 27, 1946. W. J. JOYCE 2,406,608

EYE PROTECTION MEANS AND METHOD OF MAKING THE SAME

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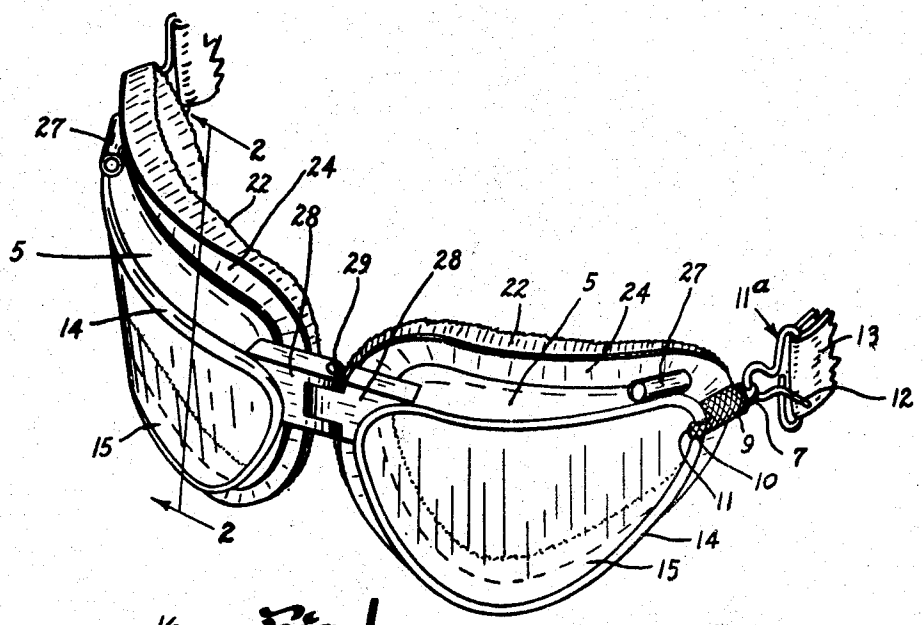


Fig. 1

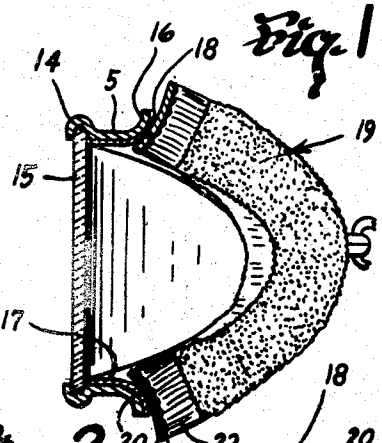


Fig. 2

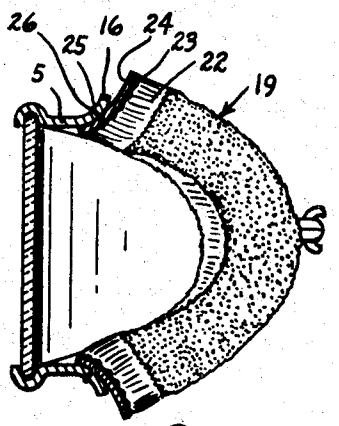


Fig. 3

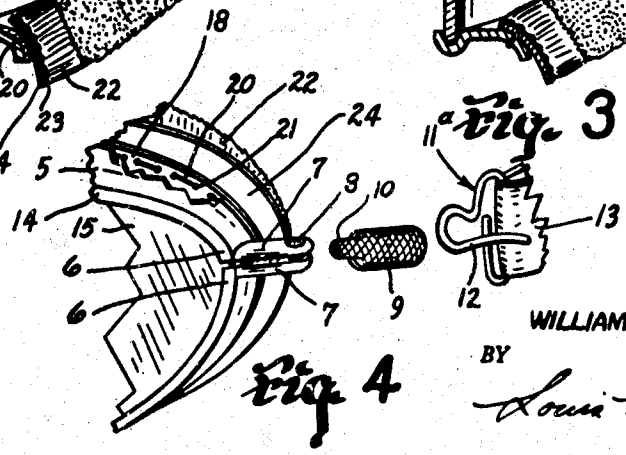


Fig. 4

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EYE PROTECTION MEANS AND METHOD OF MAKING THE SAME

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5 Claims. (Cl. 2—14)

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This invention relates to eye protection devices and has particular reference to novel means and method of forming the face engaging portion of such devices.

One of the principal objects of the invention is to provide a face engaging portion formed of fabric simulating carpet material having a fibrous portion which will conform to the variations in the facial contours of the different individuals with a comfortable fit in combination with means for retaining said face engaging portion to a given desired shape and method of making the same.

Another object is to provide face engaging portions of the above character which may be quickly and easily interchanged.

Another object is to provide face engaging portions of the above character with a backing surface coated with a material for rendering said surface relatively rigid and shape retaining.

Other objects and advantages will become apparent from the following description taken in connection with the accompanying drawing, and it will be apparent that many changes may be made in the details of construction, arrangement of parts and methods shown and described without departing from the spirit of the invention as expressed in the accompanying claims. I, therefore, do not wish to be limited to the exact details, arrangements and methods shown and described as the preferred forms only have been given by way of illustration.

Referring to the drawing:

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

Fig. 2 is a sectional view as taken on line 2—2 of Fig. 1 and looking in the direction indicated by the arrows;

Fig. 3 is a view generally similar to Fig. 1 showing a modified form of the invention;

Fig. 4 is a fragmentary view of the means for permitting the lenses to be interchanged and for permitting removal and replacement of the face engaging means.

The use of fibrous fabric for producing face contact means for eye protection devices is not new in the art. In most instances in the past it has been the usual practice to form such face engaging portions of strips of material secured to the face contacting edge of the eye cup and retaining to the shape desired by the eye cup. In most known instances in the past such fibrous or fabric type face contacting means were formed of relatively limp material and required the use of a separate backing support for retaining the face contacting area in desired relation with the face. The present invention is directed particularly to providing a face contacting portion of fibrous fabric material simulating carpet material which is initially shaped to the desired contour shape of the goggle eye cup and which will be substantially self retaining to said shape with the retaining means simultaneously functioning as a backing support for the fibrous material throughout its width. The backing support is formed integral with the face contacting portion and permits said face contacting portions to be formed as interchangeable units.

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Referring more particularly to the drawing wherein like characters of reference designate like parts throughout the several views, the device embodying the invention comprises a pair of eye cups 5 having divided meeting end portions 6. Each of the end portions 6 are provided with lugs 7 having aligned perforations 8 therein. The lugs 7 are adapted to receive a tubular connection member 9 having a bendable tongue 10 which when the tubular member is in position on the lugs 7 for retaining said lugs in adjacent relation with each other may be bent inwardly, as illustrated at 11, to retain said tubular member in place. The tubular member 9 is further retained in place by means of a headband eyelet 11a having a hook-like prong 12 adapted to be extended through the aligned openings 8 for securing the headband 13 to the lugs. Each of the eye cups 5 is provided, as shown in Fig. 2, with a forwardly channelled portion 14 for receiving the contour edge of the lens 15. The opposed inner edge of the eye cup 5 is provided with an outwardly flared portion 16. The eye cups 5 are preferably formed of metal but may be formed of any other desirable material which will permit separation of the divided ends 6 for the insertion or removal of the lens 15.

Internally of the eye cup 5, there is provided a ring 17 of relatively thin material shaped to conform to the inner shape of the eye cup 5 and to the shape of the outwardly flared edge portion 16. This is best shown in Fig. 2. The ring 17 has an outwardly flared portion 18 simulating the outwardly flared portion 16 to which the face contacting means 19 is secured as by stitchings or the like 20, best shown in Fig. 4. The The outwardly flared portion 18 is provided with a plurality of spaced openings 21 through which the stitchings 20 may be extended.

The face contacting means 19 simulates a carpet material in that it has a plurality of long

strand fibers 22 held in bundled relation with each other by a backing binding 23 and having their free ends in substantially flush relation and adapted to engage the face.

The backing binding 23 is provided with a coating 24 of cellulose acetate, artificial resinous or other known quick drying and stiffening coating material which will impregnate the backing binding 23 and render said binding relatively rigid and shape retaining. It is particularly pointed out that the backing binding 23 is of a width considerably greater than the width of the outwardly flared portion 18 of the removable ring 17 and when coated with the coating material 24, the said backing binding will function as a relatively rigid backing support for the long fibrous portions 22 and will tend to prevent the face contacting portion in general losing its shape during use.

It is particularly pointed out that the face contacting means 19 is formed to the shape of a continuous uninterrupted ring-like member shaped to conform to the contour shape of the eye cup and to retain said shape through the provision of the coating 24. This is accomplished by placing a coating 24 of required thickness on the backing binding 23 and by shaping said backing binding and the face contacting portion in general to the shape desired prior to the hardening and setting of the coating material 24. It is to be understood that the face contacting means 19 may be held to the shape required by means of a suitable fixture and that the coating 24 may then be applied to the backing binding 23 and allowed to set and harden to said shape. This coating 24 therefore does not only provide a wide area backing support for the fibers 22 but also holds the face contacting means 19 to the shape required.

Instead of securing the face contacting means 19 to a detachable ring 17, the outwardly flared portion 16 of the eye cup 5, as shown in Fig. 3, may be provided with a plurality of spaced openings 25 through which suitable stitchings 26 may be extended for securing the face contacting means 19 directly to the flanged edge portion 16 of the eye cup 5. In this instance, of course, the face contacting portion is not as readily removable and changeable as in the construction shown in Figs. 1, 2, and 4.

Although applicant has shown and described the use of fibrous carpet-like material for forming the face contacting means, it is to be understood that any other desirable material may be used with said material being provided with a backing coating 24 for retaining the face contacting means to the shape required and for providing a relatively rigid backing support for said face contacting means.

When it is desired to remove the ring 17 and the face contacting means 19 secured thereto from the eye cup, the hook-like prong 12 is removed from the aligned openings 8, the tongue 10 is bent outwardly in a direction away from the lens and the sleeve 9 is removed from the lugs 7. This permits the divided ends of the eye cups to be moved in a direction away from each other so that the ring 17 may be removed from the eye cup. This also permits interchanging or replacement of lenses.

Each of the eye cups is provided with suitable ventilating means 27 of any desirable known type, and are hingedly connected with each other by means of interfitting bridge lugs 28 connected with the side walls of the eye cups 5 as by soldering or the like and having a pivotal connection 29 with each other to permit the eye cups to be moved or folded relative to each other. The pivotal connection 29 may be in the form of a pin or screw extending through aligned openings in the bridge lugs 28.

The backing coating 24 has been specified as being formed by impregnating the backing binding 23 with a cellulose acetate solution or the like. It is to be understood that any known quickly drying paint or solution of the type which will be relatively hard and rigid when allowed to dry and set may be used. The backing coating 24 has been specified as being formed by impregnating the backing binding, with solutions of resins, methacrylate, cellulose nitrate, lacquers, glyptol containing lacquers, etc. For ease of description such coating materials will be referred to herein as non-metallic coating material.

In forming the face engaging portion 19 the said portion is preferably blanked out to cause a continuous angular member having the contour shape of the eye cup. This is accomplished by blanking the said face contacting members 19 out of sheet like material with suitable cutting dies. The stiffening coating may be placed on the backing binding either before or after the blanking and is preferably placed on the backing binding after the said face contacting portions 19 have been blanked to desired shape with the said face contacting member being retained to the shape of the eye cup while the stiffening coating is applied and allowed to dry and set to said shape.

From the foregoing description, it will be seen that simple, efficient and economical means have been provided for accomplishing all of the objects and advantages of the invention.

Having described my invention, I claim:

1. An interchangeable face engaging member for the eye cups of goggles, said face engaging member being of annular shape and comprising a plurality of thread-like fibrous portions arranged in side to side relation and joined with each other adjacent one end thereof by a binder lying substantially in a single plane and a layer of non-metallic stiffening material overlying and in binding relation with said binder to form a rigid backing member for supporting the opposed ends of the fibrous portions in substantially a single plane.

2. An interchangeable face engaging member for goggle eye cups, said face engaging member being of a continuous annular shape having its face engaging portion formed of a plurality of thread-like fibrous members in contiguous side to side relation with each other, a backing binding securing one end of said fibrous members together for retaining them in said contiguous relation and a coating of relatively rigid paint-like material on said backing binding for increasing the rigidity of said binding and for retaining said binding in substantially a single plane.

3. An interchangeable face engaging member for goggle eye cups, said face engaging member being of a continuous annular shape having its face engaging portion formed of a plurality of fibrous members in contiguous side to side relation with each other, a backing binding securing one end of said fibrous members together for retaining them in said contiguous relation, a coating of relatively rigid paint-like material on said backing binding for retaining said binding in substantially a single plane and an auxiliary support secured to said backing binding for detachably connecting said face engaging member with the eye cups.

4. A face engaging member comprising annular means having a face engaging portion formed of relatively soft distortable thread-like fibrous members joined adjacent one end thereof in contiguous side to side relation with each other and a backing support of relatively rigid paint-like material adhesively secured to said joined ends for aiding in retaining said ends in substantially a single plane.

5. A device of the character described comprising a pair of eye cups having divided end portions, means for securing said divided end portions together, said eye cups being joined with each other by a bridge member and each

having a flared edge portion, an auxiliary ring member shaped to fit internally of the eye cup and a face engaging member secured to said auxiliary ring member, said face engaging member comprising a plurality of fibrous portions joined with each other adjacent one end thereof by a backing member of substantially the same contour shape as the eye cups and adapted to retain said portions in a single cross sectional plane, said backing member having a coating of relatively stiff material adhesively secured thereto for retaining said backing member in said plane.

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