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SKI GOGGLE

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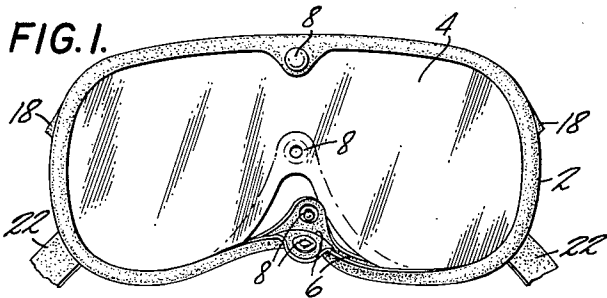
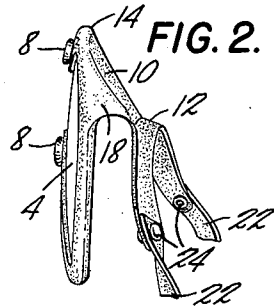
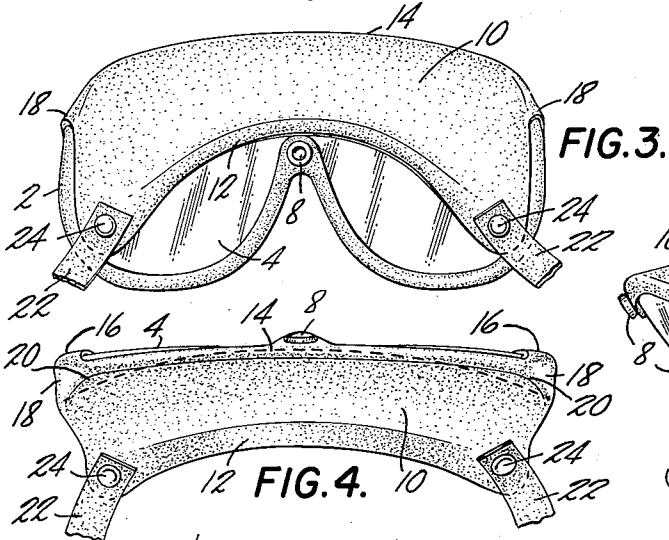
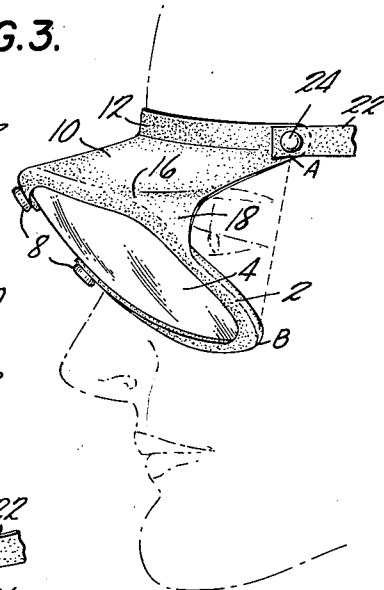
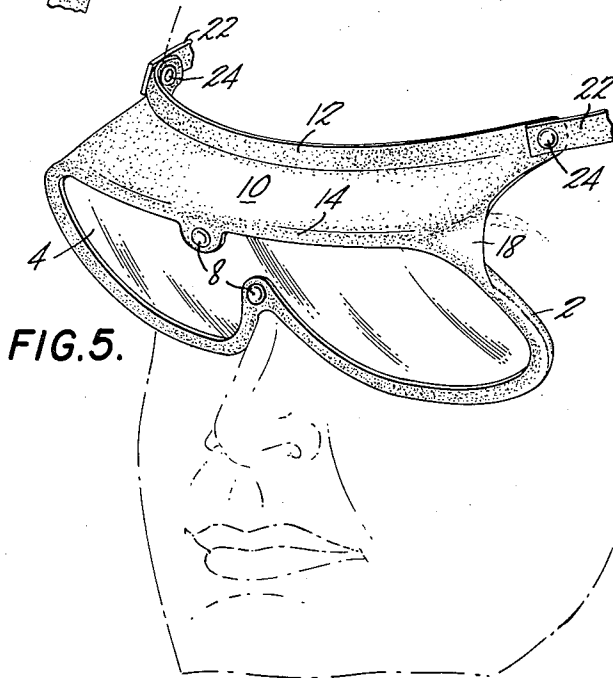


FIG. 6.

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This invention relates to an eye protector particularly adapted for use in connection with snow skiing.

The protector consists of a one piece resilient frame and visor member having an endless recess in the frame portion which grips the entire edge of a flexible eye shield member. The one piece resilient member is so molded that the visor portion is positioned at an acute angle with the frame so that the visor and frame may be readily collapsed to form a flat compact package for shipment. When fitted to the head the visor must be flexed upwardly away from the frame and because of the resiliency of the material the frame is tensioned to move toward the visor. As a result the lower edge of the frame is pulled in against the nose and face to establish a seal along the line of contact. This seal with the face is materially enhanced by means of the curvature of the junction between the frame and visor which is curved in two directions, downwardly toward the bottom of the frame and rearwardly toward the outer edge of the visor. Because of this curvature, when tension is applied by flexing the visor away from the frame curvature of the junction increases which results in pulling the ends of the eye shield in towards the side of the face to increase the line of the seal and give added protection at the side of the face. At the same time, however, there are openings at the side of the face which provide ventilation and prevent fogging of the eye shield. Since the acute angle between the frame and visor portion has to be expanded for use, the frame and visor portion automatically adjust to different head dimensions without loss of the seal.

FIG. 1 is a front view of the protector with a portion of the edge of the frame opened to better illustrate its construction.

FIG. 2 is a side view of the protector of FIG. 1.

FIG. 3 is a rear view of the protector of FIG. 1.

FIG. 4 is a top view of the protector of FIG. 1.

FIG. 5 is a perspective view of the protector when being worn.

FIG. 6 is a side view of the protector of FIG. 5.

As shown in FIG. 1 the frame portion 2 of the protector extends completely around the edge of the flexible shield 4. A recess or groove 6 in the frame provides a seat for the edge of the flexible eye shield to lock the shield in the frame. If desired ordinary snap fasteners 8 may also be employed as additional locking means between the shield and frame. The resilient frame around the shield makes the protector comfortable along the line of contact at the nose and face and it is also an important safety feature since it cushions the relatively sharp edges of the shield against the face to protect against injury in the event that the protector is jammed against the face as in a fall.

As best shown in FIG. 2 visor 10 is molded to form an acute angle with the frame so that the visor normally hangs in dangling position slightly away from the back of the shield. In this position the visor can be readily pressed against the back of the shield to flatten the protector for carrying or shipping purposes. As best shown in FIG. 6 when fitted to the head the angle between the visor and frame must be increased and as a result of the resiliency of the material the bottom edge of the frame is constantly urged in against the nose and face to form

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a seal along the line of contact. The rear edge 12 of visor 10 is molded upwardly to form an obtuse angle (FIG. 2) relative to the body of the visor so that the end portion will readily fit against the forehead of the wearer.

Frame 2 and visor 10 are molded as a single integral resilient piece and the line of the junction 14 is bowed so that the outer end portions 16 are curved back away from the center of the frame towards the outer end portion 12 of visor 10 as shown in FIG. 4. The outer end portion 12 is molded to follow the bow of the line of the junction but the curve is more pronounced (see FIG. 4). The flexible eye shield 4 is preferably molded flat but because of the molded curve of the bow of the frame when the shield is positioned in the frame it is forced to follow the curve of the bow of the frame (FIG. 4). The line of the junction between the visor and frame is also curved downwardly towards the bottom of the frame as best shown in FIG. 3.

With this construction when the tension caused by expanding the acute angle between the visor and frame is applied to the double curvature of the line of the junction it is effective for increasing the curvature of the bow of the frame so that the frame and eye shield are forced to follow the curve of the dotted line of FIG. 4. This pulls the outer ends of the frame and eye shield in towards the sides of the face to increase the line of the seal along the bottom of the frame and give added protection at the sides of the face.

In the preferred structure shown in the drawings a fillet 18 is positioned between the side of the frame and visor portion to close a portion of the gap on each side between the visor and frame which starts at the point of junction 20 between these two members. The fillets materially increase the tension on the framework caused by expanding the acute angle between the visor and frame and they increase the pressure of the seal along the line of contact with the face and the curvature in against the sides of the face. The fillets are readily molded into the assembly and the size of the fillets can be varied to give any desired tension.

As shown in FIG. 6 the shield of the protector is seated against the face at an acute angle. This helps to deflect sunlight and reduce glare and reflections from the shield. Large openings between the ends of the shield and the sides of the face provide enough ventilation to prevent fogging of the shield. The headstrap 22 of the protector is preferably attached to the visor permanently by means of the rivets 24. However, any convenient attaching means may be used.

As to materials the shield is made of transparent flexible plastic material which may be tinted if desired to reduce glare. Plastic materials such as cellulose nitrate, cellulose acetate, cellulose propionate, cellulose butyrate, cellulose acetate propionate, cellulose acetate butyrate, and the polymerized methyl, ethyl and butyl esters of acrylic and methacrylic acids are suitable materials. The shield can be stamped out of a flat sheet of plastic material with a die and upon insertion into the frame of the protector the shield will be slightly curved as shown in FIG. 2. The snap fasteners 8 are convenient since shields of different plastic materials or tints can be easily interchanged.

The visor and frame member is molded out of a resilient elastomeric material. Natural rubber and synthetic rubbers such as high polymers of isobutylene, isoprene, chloroprene, butadiene, dimethylbutadiene, and copolymers of butadiene and styrene, and butadiene and acrylonitrile are suitable materials. Also resilient polyurethane elastomers can be used. Preferably the elastomeric material is selected from those having a good

tolerance to low temperatures in terms of resiliency and flexibility. The headstrap is preferably made out of the same material used for the frame and visor member. This permits the headstrap to be permanently attached to the visor without additional adjusting means since the headstrap can stretch to fit around any head size. However, less resilient headstraps can be used with buckles or the like to provide adjustment means.

Although the protector of the present invention has now been described in connection with skiing, it will be understood that the protector is not limited to such use and that it may be used in numerous situations where it is necessary to protect and shield an individual's eyes.

It will be further understood that it is intended to cover all changes and modifications of the preferred embodiment of the invention herein chosen for the purpose of illustration which do not constitute departures from the spirit and scope of the invention.

What we claim is:

1. A protector for the eyes which comprises an eye shield frame, a visor member positioned at the top of the frame and at a predetermined acute angle with the rear surface of said frame, said frame and visor member being a single integral piece of elastic material whereby an increase in said predetermined acute angle induces substantial forces of tension therein urging the frame and visor member to return to the predetermined acute angle, the line of junction between the top of said frame and the front edge of said visor member being continuous and curved in two directions, one downwardly toward the bottom of the frame and the other rearwardly toward the rear edge of the visor member so that when the pre-

determined angle between the elastic frame and visor member is increased and the said forces of tension are induced therein, the bottom edge of the frame is thereby tensioned into contact against the nose and face, said line of junction throughout its length along the top of the frame being spaced away from the rear edge of the visor member whereby the opposite side edges of the frame are held spaced away from the face when the bottom of the frame is tensioned into contact against the face, a head strap attached adjacent the corners of the rear edge of said visor member and a transparent flexible eye shield positioned in said frame.

2. A structure in accordance with claim 1 in which a marginal portion of the rear edge of the visor member is positioned, at an obtuse angle with the body of the visor member whereby said marginal portion may be readily flexed into vertical position and fitted against the forehead in such position when the protector is worn.

3. A structure as specified in claim 1 in which the visor member extends downwardly along the sides of the frame to close a portion of the gap between the visor and frame member.

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