A sun shield for the ears provided, including at least a flat body of a flexible material having an upper surface; a lower surface on the opposite side of the upper surface; an outer edge; an inner edge; a forward section; a rearward section; and two holes, with one hole in the forward section and proximal to the inner edge, and the second hole in the rearward section and proximal to the inner edge such that the temple bar of a pair of eyeglasses slides into the first hole in the forward section thru the upper surface and then into the second hole in the rearward section through the lower surface. The inner edge rests against the head of the user and extends horizontally over the user’s ear, whereby the ear shield is positioned over the ear so that the ear is shaded from the harmful rays of the Sun.
SUN SHIELDS FOR EARS

FIELD OF THE INVENTION

The present invention relates generally to safety devices for protecting ears from the harmful ultraviolet rays of the Sun, and in particular though non-limiting embodiment to sun shields that can be used with glasses or headgear to provide an improved ear protector, and an associated method for shading and protecting ears from the Sun.

BACKGROUND

With various surveys indicating that fewer than 33% of people routinely use sunscreen or sun protection, skin cancer has become a dangerous risk and unfortunate reality for many people. However, the public is becoming increasingly more aware that consistent use of broad-spectrum sunscreens and sun-protective practices can help prevent skin cancer.

One area particularly vulnerable to the Sun’s harmful rays is the ears. Recent studies have shown that the ears are the third most frequent location for basal cell carcinomas, with approximately 39% located on the front of the ear; approximately 37% located on the back of ear; and approximately 24% on the rim of the ear.

Numerous devices are available for protecting different parts of the head from the Sun’s harmful ultraviolet rays, especially for protecting the face and eyes via different types of headgear and sunglasses or eyeglasses. However, there are no commercially viable options for providing protection to the ears.

All known, related prior art patents suffer from some sort of limitation. In particular, most do not address safety issues associated with blocking the ear and interfering with hearing; none provide a high degree of flexibility with respect to fit and adjustability for the user; and many are too complex to be commercially and economically viable.

For example, U.S. Pat. No. 4,751,746 to Rustin (1988) and U.S. Pat. No. 5,943,703 to Avila (1999) describe ear protectors that cover the ears and appear to significantly block the ear opening, which could interfere with hearing and potentially create a safety issue if used in a work environment such as construction.

Similarly, U.S. Pat. No. 5,619,750 describes an immovable ear shield having three surfaces, which would not easily admit to comfortable wear; and U.S. Pat. No. 6,550,064 discloses an ear shield apparatus limited to use on headgear.

While previously known commercial embodiments are available for shielding ears, these too suffer from one or more of the following disadvantages:

(a) The designs are too complex to be commercially and economically viable. For example, many have complex shapes and numerous parts that must be manufactured and assembled. Complex features, unusual shapes, or multiple parts increase the difficulty and cost of manufacture, thereby causing the resulting ear shield to be cost prohibitive or less economically attractive to a potential purchaser.

(b) Some ear shields can block the ear and interfere with hearing, thereby leading to safety concerns if used under conditions in which unimpaired hearing is essential.

(c) The fit and adjustability of existing ear shields are limited, thereby often providing little or no flexibility, thus limiting the usefulness and comfort of the product for the user.

(d) Known shields presently in use can be difficult and time-consuming to attach or use as required for adequate protection from harmful ultraviolet rays.

(e) Known shields are generally not available in multiple sizes and/or are too small to provide adequate shade. The lack of availability of different sizes for men, women and children, or having a single, uniform size that is too small may result in the ear shield not providing enough shade for adequate protection or may make the ear shield uncomfortable, unattractive, or undesirable to wear.

An important consideration in the use of ear shields is that they be durable enough to withstand use during physical activities such as sports, construction and other outside endeavors. A lack of durability is also a consideration in known designs that limit the usefulness of ear shields.

SUMMARY

A combination of a pair of eyeglasses and at least one ear shield is disclosed, the eyeglasses including at least a frame and pair of temple sections, and at least one ear shield comprising a main body having an upper surface; a lower surface on the opposite side of the upper surface; an inner edge; an outer edge; a forward section; and a rearward section; with the inner edge and the outer edge extending from the forward section toward the rearward section.

At least one hole is cut through the shield and located proximal to the inner edge; and at least one of the pair of temple sections extends through at least one hole and along the inner edge from the forward section toward the rearward section. At least one of the pair of temple sections entering the hole through the upper surface and extending over the ear of the wearer and the inner edge of the ear shield touches the head of the wearer, generally proximal to and above at least one of the pair of temple sections, and extending along the length of at least one of the pair of temple sections; with the forward section of the ear shield being of sufficient size to extend over the ear of the wearer. In this manner, the ear shield is removable attached to said eyeglasses and provides shade for the wearer’s ears.

Also disclosed is an ear shield comprising a main body; an upper surface; a lower surface located on the opposite side of the upper surface; a forward section; a rearward section; an inner edge; and an outer edge, with the inner edge and the outer edge extending from the forward section toward the rearward section, so that the ear shield has an attachment area along the inner edge.

An associated method of shading a person’s ears using an ear shield is disclosed, wherein the shield comprises a main body; an upper surface; a lower surface located on the opposite side of the upper surface; a forward section; a rearward section; an inner edge; an outer edge, and an attachment means, with the method further including: providing eyeglasses with a pair of temple bars; positioning said shield over an ear; attaching said shield to at least one of said pair of temple bars; and adjusting said shield to ensure adequate shield over the ear.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of an ear shield according to a first example embodiment.

FIG. 2 is a perspective view of the first example embodiment depicted in FIG. 1.
FIG. 3 is a perspective view of a second example embodiment.

FIG. 4 is a perspective view of the second example embodiment depicted in FIG. 3.

FIG. 5 is a further perspective view of second example embodiment depicted in FIG. 3.

FIG. 6 is a top view of the second example embodiment depicted in FIG. 3.

FIG. 7 is a perspective view of a third example embodiment.

FIG. 8 is a perspective view of a fourth example embodiment.

REFERENCE NUMERALS USED IN DRAWING FIGS. 1-8.

<table>
<thead>
<tr>
<th>Numeral</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>ear shield</td>
</tr>
<tr>
<td>12</td>
<td>inner edge</td>
</tr>
<tr>
<td>14</td>
<td>outer edge</td>
</tr>
<tr>
<td>15</td>
<td>wire</td>
</tr>
<tr>
<td>16</td>
<td>edge material</td>
</tr>
<tr>
<td>18</td>
<td>hole</td>
</tr>
<tr>
<td>19</td>
<td>pivot flap</td>
</tr>
<tr>
<td>20</td>
<td>upper surface</td>
</tr>
<tr>
<td>22</td>
<td>lower surface</td>
</tr>
<tr>
<td>24</td>
<td>attachment area</td>
</tr>
<tr>
<td>25</td>
<td>attachment strip</td>
</tr>
<tr>
<td>26</td>
<td>forward section</td>
</tr>
<tr>
<td>28</td>
<td>rearward section</td>
</tr>
<tr>
<td>30</td>
<td>eyeglasses</td>
</tr>
<tr>
<td>32</td>
<td>eyeglasses frame</td>
</tr>
<tr>
<td>34</td>
<td>temple bar</td>
</tr>
</tbody>
</table>

DETAILED DESCRIPTION OF SEVERAL EXAMPLE EMBODIMENTS

As suggested above, several advantages over the prior art of one or more aspects of an ear shield or ear visor consistent with the instant disclosure include the ability:

(a) to provide a sun shield for ears that is simple in design and shape, thereby providing for easy manufacture and assembly and resulting in reduced cost;

(b) to provide a sun shield for ears that leaves the ear canal unimpeded, allowing the user to have normal or possibly increased hearing ability due to the shield acting as a funnel for sound waves to the ear;

(c) to provide a sun shield for ears that is flexible and formable such that the user can shape the shield to provide optimal shading and comfort;

(d) to provide a sun shield for ears that can be easily attached to glasses or headgear (hats, visors, helmets, etc.) without difficulty or confusion for the user;

(e) to provide a sun shield for ears that is available in different sizes for women, children, and men, is large enough to provide adequate shade and protection for the user, and is a size that is attractive and comfortable for the user; and

(f) to provide a sun shield for ears that is durable and lightweight enough to withstand harsh use during physical activities such as sports or outdoor activities while not being noticed by the user as an additional unreasonable or uncomfortable additional weight.

In short, an improved sun shield, shade, or visor for ears offers a simple, easy-to-use, stylish, flexible, adjustable, safe, durable, and economically viable product for supplemental protection of a person’s ears from the harmful rays of the Sun.

Still further objects and advantages will become apparent to those of skill in the art from consideration of the following detailed description of several example embodiments, especially as read in conjunction with the related drawings and parts list summarized above.

As seen in the example embodiments depicted in FIGS. 1-2, a sun shield for ears comprises a flat body of a flexible material having an upper surface; a lower surface; an outer edge; and an inner edge with means for attaching to the temple portion of a pair of eyeglasses. The sun shield is attached to the temple part of the glasses such that the inner edge of the body is positioned along the temple part of the glasses, and the sun shield extends horizontally over an ear, whereby the ear shield is positioned over the ear and therefore shaded from the harmful rays of the Sun.

The ear shield can be made of a variety of materials, e.g., foam, cloth, plastic, elastomer, UV-A and UV-B opaque material, fiberglass, rubber, metal, and various other materials providing UV protection. An especially useful material is a flexible material, for example, a cross-linked foam formed into a sufficient size and shape as to block the Sun’s rays and provide shade for the ears.

In one embodiment, the ear shield 10 has a flat body with an upper surface 20; a lower surface 22 located on the back side of the upper surface 20; a forward section 26; a rearward section 28; an inner edge 12 and an outer edge 14 that extend from the forward section 26 toward the rearward section 28; and a plurality of holes 18 disposed proximal to and along to the inner edge 14.

In one embodiment, a plurality of holes 18 are spaced proximal and parallel to the inner edge 12. In an alternative embodiment the shield 10 has two holes 18, with a first hole 18 located in the forward section 26 and a second hole 18 located in the rearward section 28.

In a further embodiment, the ear shield 10 is sized such that the forward section 26 will provide adequate shade to an ear when the ear shield 10 is placed directly over the ears of a human being, with the inner edge 12 parallel to and touching the circumference of the head. In a still further embodiment, the ear shield 10 is removably attached to eyeglasses 30 by inserting the eyeglass temple bar 34 through the hole 18 disposed on upper surface 20 of the forward section 26, and then again through the hole 18 on the lower surface 22 of the rearward section 28 as shown in FIG. 2.

As seen in the example embodiments depicted in FIGS. 3-6, the ear shield 10 further comprises an attachment strip 25, which is attached to and runs along the inner edge 12 from the forward section 26 toward the rearward section 28; a pivot flap 19 that extends across the forward section 26 from the inner edge 12 toward the outer edge 14, and a molded wire 15 inserted into the ear shield 10 material and running along the outer edge 14.

In further embodiments, the attachment strip 25 provides an attachment means for attaching the shield 10 to the temple bar 34 of eyeglasses frame 32, and/or the pivot flap 19 provides means for adjusting the ear shield 10 in order to assist personalized user adjustment of the shield for better fit and comfort. In a still further embodiment, the molded wire 15 provides support for the ear shield 10, and serves as an additional means for allowing the user to bend, shape, and adjust the ear shield 10 to meet personal preference for fit and comfort in shading the ears.

As seen in the example embodiment depicted in FIG. 7, the ear shield 10 further comprises an attachment area 24 that can be combined with an attachment means to attach to eyeglasses or headgear (e.g., hats, visors, helmets, etc.) in order to provide better shade for the ears of a user.

As seen in the example embodiment depicted in FIG. 8, the ear shield 10 is attached to eyeglasses 30 and has an edge material 16 that runs substantially along the perimeter of the shield 10 including the inner edge 12 and outer...
edge 14. In one embodiment, the edge material 16 is a flexible and durable wire embedded in the shield 10 material, providing additional support for durability, and allows the wearer to adjust the ear shade to meet personal preference for fit and comfort by bending and adjusting the edge material 16 as desired to the preferred shape and angle. In another embodiment, the ear shield 10 is attached to the eyeglasses temple bar 30 via glue, sewing, clamp, clip, or another attachment means.

Furthermore, the sun shields herein presented have the additional advantage of providing for simple and economical manufacture; clear, unobstructed hearing; the ability to adjust to fit the wearer’s physical shape and for comfort; it provides uncomplicated attachment to glasses or headgear; it provides various sizes and shapes for different types and size of wearers; provides the option of use in harsh activities and environments; and provides a cushion for the ears.

Those of skill in the relevant arts will also appreciate the ear shield described herein can be made with material having different characteristics; of differing sizes, shapes, colors and prints (including advertising, camouflage, etc.); with materials having a variety of different properties (e.g., flexible, rigid, etc.); with materials allowing flexibility of the ear shield around the perimeter or partial perimeter of the shield; with features such as the ability to cause eyeglasses to float when dropped in water; the ability to fold the shields to the side of the user’s head when not in use; and with different methods of attaching (either permanently or removably) to the user’s head in combination with eyeglasses and sunglasses frames or temples, headgear, and/or a plurality of other means previously known or conceived in the future.

The foregoing specification is provided for illustrative purposes only, and is not intended to describe all possible aspects of the present invention. Moreover, while the invention has been shown and described in detail with respect to several exemplary embodiments, those of ordinary skill in the art will appreciate that minor changes to the description, and various other modifications, omissions and additions may also be made without departing from the spirit or scope thereof.

1. A combination of a pair of eyeglasses and at least one ear shield, said eyeglasses comprising a frame and pair of temple sections, said at least one ear shield comprising:

(a) a main body having an upper surface, a lower surface on the opposite side of said upper surface, an inner edge, an outer edge, a forward section, and a rearward section, said inner edge and said outer edge extending from said forward section to said rearward section;

(b) at least one of at least one hole cut through said shield and located proximal to said inner edge and an attachment area along said inner edge; and

(c) said forward section of said ear shield being of sufficient size to extend over the ear of the wearer.

2. The combination of a pair of eyeglasses and at least one ear shield of claim 1 wherein said shield has two holes cut through said shield, with one hole located in said forward section and proximal to said inner edge and with a second hole located in said rearward section and proximal to said inner edge such that said at least one of said temples extends through and between said holes along the lower surface of said shield and extending from said forward section to said rearward section.

3. The combination of a pair of eyeglasses, and at least one ear shield of claim 1 wherein said shield is made of a flexible material.

4. The combination of a pair of eyeglasses, and at least one ear shield of claim 3 wherein said flexible material is cross-linked foam.

5. The combination of a pair of eyeglasses, and at least one ear shield of claim 1 wherein said main body is flat.

6. The combination of a pair of eyeglasses and at least one ear shield of claim 1 further comprising: at least one of said pair of temple sections extending through said at least one
hole and along said inner edge from said forward section toward said rearward section, said at least one of said pair of temple sections entering said hole through said upper surface and extending over the ear of the wearer and said inner edge of said ear shield touching the head of the wearer, proximal to and above said at least one of said pair of temple sections, and extending along the length of said at least one of said pair of temple sections.

7. The combination of a pair of eyeglasses and at least one ear shield of claim 1 wherein said attachment area has an attachment means.

8. The combination of a pair of eyeglasses and at least one ear shield of claim 7 wherein said attachment means attaches to a pair of eyeglasses, said eyeglasses having at least one temple bar and said attachment means attaching to said temple bar.

9. The combination of a pair of eyeglasses and at least one ear shield of claim 8 wherein said at least one temple bar attaches to said shield by sliding into at least one sleeve along the length of said inner edge and extending from said forward section to said rearward section.

10. The combination of a pair of eyeglasses and at least one ear shield of claim 8 wherein said attachment means is a clamp.

11. The combination of a pair of eyeglasses and at least one ear shield of claim 7 wherein said attachment means attaches to the rim of a headgear.

12. The combination of a pair of eyeglasses and at least one ear shield of claim 7 wherein said ear shield main body is composed of a flexible material.

13. The combination of a pair of eyeglasses and at least one ear shield of claim 7 wherein said outer edge of said shield has a flexible means.

14. The combination of a pair of eyeglasses and at least one ear shield of claim 13 wherein said flexible means is a flexible wire.

15. The combination of a pair of eyeglasses and at least one ear shield of claim 13 wherein said inner edge also includes a flexible means.

16. The combination of a pair of eyeglasses and at least one ear shield of claim 1 wherein a pivot flap extends across said main body.

17. The combination of a pair of eyeglasses and at least one ear shield of claim 16 wherein said pivot flap extends from said outer edge to said inner edge and across said forward section.

18. (canceled)

19. (canceled)

20. (canceled)