Temple with upper back ear support

Description

Modern eyeglasses frame consists of the rim and the temples. While the rim holds the lens, the temples keep the glasses from falling off by holding onto the head. There are broadly three temple designs to support the glasses, namely, the library temple, the skull temple and the riding bow temple. Until now, there are very little considerations on specifically where the forces are applied on the head or ears. Of these three designs, the riding bow temple provides the greatest support as it curves down the back of the ear. However, this design is often uncomfortable as it tends to squeeze the back of the ear. The skull temple is the most common design with a profile that runs straight and bends down at approximately forty-five degrees from the top of the ear. If more support is required, the temple tip is bent more. While these two designs generally give better support, the downward curve often provides more pressure on the eminence of concha which is a relatively harder protrusion at the back of the ear, and this causes discomfort to the user. To reduce discomforts, the temple tips are often bent outward which results in eyeglasses frame being poorly supported and slipping down the user nose during normal usage or during exercise. Other methods such as installation of non-slip pads have been introduced to improve the support from the temple tip, but the non-slip pads are usually located at the end of the temple tip. The riding bow temple provides the best support but the pressure on the eminence of concha will cause discomfort. Therefore, if this pressure can be reduced by placing more force on other parts of the ears, it is possible to achieve the desired support with no discomfort.

This invention describes a temple that bends over the top of the ear and down to the lower back half of the ear and with an upper back ear support where a projection touches the upper back half of the temple before the eminence of the concha. For the glasses to be well supported, a certain amount of pressure needs to be applied on the ear to counter the weight of the lenses and the frame. As the upper back ear is relatively soft and has a large contact area to spread the contact force, it is able to provide greater support without causing discomfort to the user. To achieve this upper back ear support, there is a projection from the curly temple tip that targets the upper back ear. The projections may be soft or built with a compliant support so that the pressure on the upper back of the ear can be further controlled hence providing the right balance of support and comfort.

In our modified temple design, the temple tip curves down behind the ear and extends beyond the eminence of the concha [1] and a projection [3] that resides at the upper back

half of the ear. In one embodiment of this invention, a lever reaches upwards from near the base of the temple tip [2] and to the upper back half of the ear where there is a projection [3] that reaches out to the ear as shown in Figure 1. Having the projection at the end of the lever meant that the projection is compliant which allows it to move when a force is applied. In an alternative embodiment, there is a cavity [4] behind the projection [3] as shown in Figure 2. This cavity allows the projection to be compliant. In yet another embodiment, the temple tip is flexible [5][6] and incorporated with the projection [3] as shown in Figure 3. In yet another embodiment, the projection is a convex curve along the temple tip as shown in Figure 4. In yet embodiment, the projection is made of a soft material [6] as shown in Figure 5. It is important to note that the projection may come in any shape or configuration as long as it is intended to sit behind the upper back half of the ear.

Figure 1. Temple tip with a lever that reaches upwards from near the base of the temple tip [2] and to the upper back half of the ear where there is a projection [3] that reaches out to the ear

Figure 2. Temple tip with a cavity [4] behind the projection [3]

Figure 3. A flexible temple tip [5][6] and incorporated with the projection [3]

Figure 4. Projection is a convex curve along the temple tip

Figure 5. Projection is made of a soft material [6]

Claim

1. We claim a temple design that curves over the ear and down the back to the lower half of the ear wherein there is a projection that touches the upper back half of the ear.

2. Said projection in claim 1 comprises a convex curve.

3. Said projection in claim 1 can be adjusted by changing the curvature of the projection.

4. Said temple design in claim is made of a malleable or heat-malleable material such that the curvature and shape of the temple can be modified.

5. Said projection in claim 1 contains a compliant mechanism wherein the projection will deflect when a force is applied to it.

6. Said projection in claim 1 is substantially compressible.

7. Said projection in claim 1 is detachable and can be replaced with projection of different shape and size.

8. Said temple design claim 1 contains a compliant temple tip which runs down the back of the ear wherein the temple tip would deflect when a force is applied to it.

9. Said temple design comprises a removable or adjustable temple tip that curves over the ear and down the back of the ear where there is a projection that touches the upper back half of the ear and continues down the lower half of the ear.

10. Said temple tip in claim 9 slides along a temple stem such that the full length of the temple can be adjusted.

Abstract

This invention describes a temple that bends over the top of the ear and down to the lower back half of the ear and with an upper back ear support where a projection touches the upper back half of the temple before the eminence of the concha. In conventional riding bow temples, the temple tip squeezes the eminence of the concha and causes discomfort to the user. Our invention aims to introduce an additional force on the slope behind the ear before the eminence of the concha so that the temple tip gets additional support from another part of the ear. The application of the force is by means of a projection. The projections may be soft or built with a compliant support so that the pressure on the upper back of the ear can be further controlled hence providing the right balance of support and comfort.

Figure 1