and at its highest end (with the components positioned as in FIG. 6) by the sum of the diopter value of surface 48 plus the maximum 14 diopter increase from component 44, e.g. 44 diopters.

When the host eye refocuses on distant objects ciliary body 28 relaxes and expands, and the compressive spring forces within arms 54 and fingers 70 and 72 cause components 40 and 42 to return to the distance viewing position of FIG. 2.

It should be noted that should membrane 86 fail or be damaged, e.g. by a necessary subsequent surgical procedure such as a YAG laser capsulotomy, causing component 44 to discontinue its accommodation, fixed component 42 continues to function and provide the fixed refractive power of surface 48. Removal of lens 40 is not required. This is an important safety feature of the lens.

It should also be understood that light impinging on surface 62 and entering zone 100 is converged along principal axis 102 on the fovea of the retina of the host eye. Light outside surface 62 inpinging on rim 64, arms 54, and fingers 70 and 72 within zone 104 is diffracted away from axis 102 to eliminate glare.

While components 42 and 44 have been illustrated as separate pieces, it is anticipated that they may be molded together to form lens 40 as one piece. Also it is possible that a fluid other than air may be contained within chamber 90.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiments are therefore to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claims are therefore intended to be embraced therein.

What is claimed and desired to be secured by Letters Patent is:

1. An intraocular lens for mounting within the ciliary body of a host eye and capable of emulating the natural process of accommodation comprising first optical means having a first refractive power, second optical means having a variable refractive power, said first and second optical means being connected together for relative movement along the principal axis of lens, said first optical means including a surface of predetermined configuration engageable by said second optical means upon relative movement of said first and second optical means towards each other in response to contraction of the ciliary body to increase the refractive power of the lens.

2. The intraocular lens of claim 1, said first optical means having a substantially fixed refractive power.

3. The intraocular lens of claims 1 or 2, said first and second optical means having a central zone which converges light toward said principal axis and an outer distal zone which diffracts light away from said principal axis.

4. The intraocular lens of claim 3, said first and second optical means including central optical elements located within said central zone and flexible mounting means extending radially outwardly from said central elements within said distal zone, the mounting means being shaped to diffract light away from the principal axis.

5. The intraocular lens of claim 4, wherein the mounting means are connected together and permit relative axial movement between said first and second optical means.

6. The intraocular lens of claim 5, wherein said mounting means extend a substantial circumferential distance around said optical means and provide substantial support within the ciliary body.

7. The intraocular lens of claims 1 or 2, said second optical means including a flexible optical element which increases in refractive power as it engages with and conforms to said surface during the accommodation process.

8. An intraocular lens for mounting within the ciliary body of a host eye comprising first optical means having a substantially fixed refractive power, second optical means including a flexible optical means providing a variable refractive power, said first and second optical means being connected together in substantial coaxial alignment for relative movement along the principal axis of the lens, said first optical means including a surface of predetermined configuration engageable by said flexible optical means upon relative movement of said first and second optical means towards each other in direct response to contraction of the ciliary body, the refractive power of said flexible optical means gradually increasing as it increasingly conforms to said surface, whereby said second optical means provides a continuously variable range of refractive power during the accommodation process.

9. The intraocular lens of claim 8, said first and second optical means having a central zone which converges light toward said principal axis and an outer distal zone which diffracts light away from said principal axis.

10. The intraocular lens of claim 9, said first and second optical means comprising central optical elements including said flexible optical means and said surface located within said central zone and flexible mounting means extending radially outwardly from said central elements within said distal zone, the mounting means being shaped to diffract light away from the principal axis.

11. The intraocular lens of claim 10, wherein the mounting means are connected together and permit relative axial movement between said first and second optical means.

12. The intraocular lens of claim 11, wherein said mounting means extend a substantial circumferential distance around said optical means and provide substantial support within the ciliary body.

13. The intraocular lens of claim 8, said flexible optical means comprising a substantially rigid optical element, a flexible optical element connected to and spaced from said rigid element and defining a fluid chamber therewith, said flexible optical element engaging with and conforming to said surface.

14. The intraocular lens of claim 13, wherein air is contained within said chamber.

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