

further understood that the description and drawings set forth hereinabove are for illustrative purposes only and do not constitute a limitation on the scope of the invention.

What is claimed is:

1. A foldable artificial intraocular lens for insertion into a human eye comprising:

a foldable lens body divided into three zones by two separation cuts, said separation cuts being generally parallel to one another and extending substantially but not completely through said foldable lens body thereby facilitating unfolding of said foldable lens body along said separation cuts; and an elastic ring extending around the perimeter of said foldable lens body.

2. A foldable intraocular lens as in claim 1 wherein said three zones further comprise two side zones and one center zone, said center zone having a centrally located first hemispherical segment having an optical power suitable for reading and the remainder of said foldable lens having an optical power suitable for far distance vision.

3. A foldable intraocular lens as in claim 2 wherein said center zone has a centrally located second hemispherical segment, not overlapping with said first hemispherical segment and having an optical power suitable for intermediate distance vision.

4. A foldable intraocular lens as in claim 3 wherein the optical power of said first hemispherical segment is approximately 3.5 diopters greater than the optical power of the portion of said foldable lens having an optical power suitable for far distance vision and the optical power of said second hemispherical segment is at least approximately 1 diopter but less than approximately 2.5 diopters greater than the optical power of the portion of said foldable lens having an optical power suitable for far distance vision.

5. A foldable intraocular lens as in claim 2 wherein the optical power of said first hemispherical segment is approximately 3.5 diopters greater than the optical power of the remainder of said foldable lens.

6. A foldable intraocular lens as in claim 2 wherein said foldable lens is generally oval in shape having a long axis of approximately 6 mm and a short axis of approximately 5 mm and said separation cuts extend generally parallel to said long axis so that said side zones have a width along said short axis of approximately 1.5 mm and said center zone has a width along said short axis of approximately 2 mm.

7. A foldable intraocular lens as in claim 1 wherein the depth of said separation cuts is adjusted to leave uncut approximately 100 micrometers of said foldable lens.

8. A foldable intraocular lens as in claim 1 further comprising means for locking said foldable lens body in an unfolded position after insertion of said lens body into a human eye.

9. A foldable intraocular lens system as in claim 8 wherein said locking means comprises:

a plurality of locking pins each having a first spherically-tipped end, a second end and a flange located between said first and second ends with said second ends being embedded in said separation cuts; and a plurality of spherically-ended locking pin receiving cavities embedded in said separation cuts and oriented so that said spherically-tipped first ends of said locking pins enter and engage said spherical

ends of said receiving cavities when said foldable lens body is in an unfolded position.

10. A foldable intraocular lens system comprising:

a foldable artificial lens implant divided into three zones by two separation cuts, said separation cuts being generally parallel to one another and extending substantially but not completely through said foldable implant thereby facilitating folding and unfolding of said foldable implant along said separation cuts;

an elastic ring extending around the perimeter of said foldable lens implant; and

a lens insertion instrument for inserting said foldable implant in a folded position into an eye, unfolding said foldable implant inside said eye and securing said unfolded implant at a proper location in said eye.

11. A foldable intraocular lens system as in claim 10 wherein said three zones further comprise two side zones and one center zone, said center zone having a centrally located first hemispherical segment having an optical power suitable for reading and the remainder of said foldable implant having an optical power suitable for far distance vision.

12. A foldable intraocular lens system as in claim 11 wherein said center zone has a centrally located second hemispherical segment, not overlapping with said first hemispherical segment and having an optical power suitable for intermediate distance vision.

13. A foldable intraocular lens system as in claim 11 wherein said foldable lens implant is generally oval in shape having a long axis of approximately 6 mm and a short axis of approximately 5 mm and said separation cuts extend generally parallel to said long axis so that said side zones have a width along said short axis of approximately 1.5 mm and said center zone has a width along said short axis of approximately 2 mm.

14. A foldable intraocular lens system as in claim 10 wherein said three zones further comprise two side zones and one center zone and said insertion instrument further comprises means for gripping said center zone and unfolding said side zones along said separation cuts.

15. A foldable intraocular lens system as in claim 14 wherein said gripping and unfolding means includes a top segment and a bottom segment oriented for gripping said center zone, two platforms rotatably affixed to said bottom segment and means for rotating said platforms against said side zones to force said side zones from a folded to an unfolded position.

16. A foldable intraocular lens system as in claim 15 wherein said rotating means includes unfolding springs for exerting force against said platforms to facilitate unfolding of said side zones and a drum and string assembly for controlling the rotational movement of said platforms acted upon by said springs and for rotating said platforms against the force of said springs after unfolding of said side zones is complete.

17. A foldable intraocular lens system as in claim 16 wherein said insertion instrument further comprises a plurality of removable tunnel shields for shielding said foldable implant during insertion into an eye.

18. A foldable intraocular lens system as in claim 17 wherein said drum and string assembly may be controlled by a plurality of electronically controlled hydraulic rotary actuators that may be used therewith and said tunnel shields may be removed from the eye by a plurality of electronically controlled hydraulic linear actuators that may be used therewith.