

other end of second leg 56 back to optic 22. Free end 60 of leg 58 extends into bore 36 and slides freely within bore 36 so that as haptic 24 is compressed toward optic 22, free end 60 of haptic 24 slides freely within bore 36.

To provide additional flexibility to haptic 24, first leg 54 may include a concave section 62 extending in a direction transverse to optic 22 toward third leg 58. As haptic 24 compresses under the normal distortion of the eye, free end 60 will move into bore 36. Concave section 62 will also compress so as to keep second leg 56 in full contact with the peripheral anatomy of the eye in anterior chamber angle 8. Without concave section 62, when haptic 24 compressed, a portion of second leg 56 could have a tendency to move away from anterior chamber angle 8 and, thus, reduce the contact of haptic 24 with the peripheral anatomy of the eye, thus, reducing the control which haptic 24 would have over optic 22.

Haptic 26 is configured in the same shape as haptic 24, so that haptics 24 and 26 will be symmetrically disposed about optic 22.

Referring now to FIG. 3, there is shown a locking mechanism for securing free end 60 within bore 36. Entry portion 40 of bore 36 includes in inwardly extending flange 70 which reduces the size of bore 36 in entry area 40. The diameter of the hole in flange 70 is still large enough to permit third leg 58 of haptic 24 to slide freely through flange 70. Free end 60 of haptic 24 includes an enlarged head 72 which has a diameter greater than the diameter of flange 70 but less than the diameter of bore 36. The portion of enlarged head 72 which faces toward the third leg 58 may be undercut at point 74. The surface of flange 70 facing into bore 36 may include a cone-like projection 76 which corresponds generally to undercut 74 to form a barb for resisting the removal of free end 60 and head 72 from bore 36 through flange 70. Haptic 24, and particularly enlarged head 72, is made of a compressible plastic material so that head 72 may be inserted through flange 70 by forcing free end 60 into flange 70 and compressing enlarged head 72. When enlarged head 72 passes through the opening in flange 70, enlarged head 72 will expand so that undercut portions 74 will widen out wider than the diameter of the hole in flange 70, so that it will be difficult to remove the free ends 60 and enlarged head 72 back through the opening in flange 70. The diameter of enlarged head 72 is small enough so that it will slide freely within bore 36.

Referring now to FIG. 1C, there is shown an alternative embodiment of the intraocular lens of the present invention wherein haptics 84 and 86 extend posteriorly at a small angle to the posterior surface 30 of optic 22 in order to place optic 22 farther away from the anterior surface of iris 4 and somewhat closer to the posterior surface of cornea 2. The lens shown in FIG. 1C is a vaulted lens which will further reduce the possibility of chaffing between the posterior surface 30 of optic 22 and the anterior surface of iris 4.

Referring to FIG. 2 there is shown a further alternative embodiment of the lens of the present invention wherein the second leg 56 of haptic 24 has two contact portions 88 and 90 spaced apart by a concave portion 92 which extends back toward optic 22. This configuration permits haptic 24 to contact anterior chamber angle 8 with a two-point contact at contact points 88 and 90 and to eliminate contact with angle 8 in the concave connecting portion area 92.

It will be appreciated that the present invention provides a universal anterior chamber intraocular lens which has a great deal of flexibility so that one lens can accommodate a large number of eye sizes. The use of filamentary haptics facilitates flexibility and the multiple point contact of the haptics with the optic provide good optic control against vaulting, decentering or tilting. Flexibility is further facilitated by permitting one end of the haptic to slide freely within a bore in the optic. Flexibility is further facilitated by including a concave portion in the haptic which holds the haptic in contact with the angle of the eye even as the haptic is compressed.

The present invention has been described in conjunction with preferred embodiments. Those skilled in the art will appreciate that many modifications and changes may be made to the preferred embodiments without departing from the present invention. It is, therefore, not intended to limit the present invention except as set forth in the appended claims.

I claim:

1. An anterior chamber intraocular lens comprising:
 - a) an optic having an anterior surface, a posterior surface and a surrounding circumferential edge and having first and second bores entering at said edge of said optic at opposite peripheral portions of said edge, said bores extending substantially parallel to each other and extending into said optic generally parallel to the plane which is perpendicular to the optical axis of the optic;
 - b) first and second flexible, resilient filamentary haptic means extending from said optic for engaging the peripheral anatomy of the eye;
 - c) said first and second haptic means each having a first end and a second end;
 - d) said first end of said first haptic means fixed to said optic at a point spaced circumferentially from said first bore an arc distance therealong of less than 180 degrees;
 - e) said second end of said first haptic means extending into said first bore;
 - f) said first end of said second haptic means fixed to said optic at a point spaced circumferentially from said second bore an arc distance therealong of less than 180 degrees, said second end of said second haptic means extending into said second bore;
 - g) each of said first and second haptic means including
 - (a) a first leg extending from said first end outwardly of said optic;
 - (b) a second leg extending transversely of said optic for engaging the peripheral anatomy of the eye;
 - (c) a third leg extending from said second leg to said second end of said haptic means;
 - h) said first, second and third legs of each haptic forming a unitary haptic means and having smooth, connecting portions;
 - i) each of said first legs of said first and second haptic means including a concave portion extending back toward said respective third leg to provide a greater flexibility to each of said first and second haptic means;
 - j) each of said concave portions extending a distance toward said respective third leg so that a plane including the optical axis of said optic and intersecting said concave portion of said first haptic means will also intersect the concave portion of said second haptic means;