

reduce the expense of the mold. Molding is carried out by mixing the silicone elastomer materials, evacuating the mixture to remove any air bubbles entrapped therein, placing the evacuated material in a mold, again evacuating to remove any air bubbles, and finally curing.

For human use, the overall length dimension of the device 34, including the length of the tabs 41 and 42 on each side of the lens body 36, would not normally exceed ten millimeters—as an example, the lens body 36 may have a diameter of four millimeters and each pair of the tabs 41 and 42 a maximum lateral projection of two and one-half millimeters giving an overall length of nine millimeters for the device. The thickness of each of the tabs 41 and 42 is a fraction of a millimeter, making the tabs very flexible.

The attachment pegs 48 are preferably made of Teflon, and each peg is provided at its ends with enlarged heads 49 which can be pressed through the apertures 46 in the tabs 41 and 42 into interlocking engagement therewith, as shown in FIG. 3.

The alternate forms of construction of the device, illustrated in FIGS. 4–10, differ from the lens device 34 described above principally in the construction and arrangement of the flexible fixation tabs.

In FIGS. 4 and 5, the lens body 36 is provided with an anterior fixation tab 50 projecting to one side of the marginal portion 38, and with a diametrically opposed posterior fixation tab 52. The lens body 36 in FIGS. 6 and 7 is provided with a posterior circular flexible fixation disk 54 and with diametrically opposed anterior fixation tabs 55 and 56. In FIGS. 8 and 9, the lens body 36 has diametrically opposed anterior fixation tabs 58 and 59 and diametrically opposed posterior fixation tabs 60 and 61 which are arranged in right angular relation to the anterior tabs 58 and 59. A group of three fixation tabs 64, 65 and 66, arranged in circumferentially spaced relation around the marginal portion 38 of the lens body 36, is shown in FIG. 10, and ordinarily these tabs 64–66 would all be either anteriorly or posteriorly placed.

Other alternate constructions appear in FIGS. 11–16. In FIGS. 11–13, two pairs of anterior and posterior tabs 68 and 69 project from the lens body 36 in diametrically opposed relation, and an anterior tab 70 is disposed circumferentially between the anterior tabs 68. The tab 70 is provided with a pair of holes 71 which receive a suture for attaching the lens device to the iris. FIGS. 14 and 15 show a lens body 36 having an anterior tab 74 projecting from one side, and a generally circular posterior disc 75 arranged in eccentric relation to the axis of the lens body so as to project to the opposite side in varying amounts. A series of suture receiving holes 76 in the disc 75 and a peg 76 in the tab 74 are provided for attachment of the lens device. The construction of FIG. 16 has an anterior tab 78 and a diametrically opposite posterior tab 79 which cooperate, respectively with a posterior ledge 80 and an anterior ledge 81 for holding the device within the pupillary margin, supplemented by a suture or a peg attachment, as desired. The examples illustrated and described herein demonstrate the versatility of the invention as far as the fixation of the lens device is concerned. The particular form of fixation means employed can be varied in order to meet the requirements of a particular patient. Also, the suture form of attachment illustrated in the lens devices of FIGS. 11 and 14 can be employed in place of the peg form of attachment illustrated in other modifications of the lens devices, particularly those lens devices which

do not have an opposed pair of anterior and posterior tabs.

The surgical procedure used in the implantation of an intraocular lens device of the invention is straightforward. The eye is prepped and draped in the usual manner. A standard lid speculum is placed and a superior rectus suture is placed at 12:00. A flap may or may not be utilized. A limbal incision is placed with standard instrumentation using knife or blade and enlarged from 10:00 to 2:00 position. A peripheral iridectomy is performed at the 12:00 position extending in a triangular fashion with the apex inferior. The natural lens 24 is then extracted either extracapsularly (or intracapsularly), removing the nucleous into the anterior chamber and extracting it and then washing out the bulk of the cortical material leaving peripheral cortical remnants and capsule; or if an intracapsular extraction is performed, it is wise to have the hyaloid face as posteriorly placed as possible. The same procedure should be used in an intraocular operation in which the lens is removed in toto. The intraocular lens device 34 is then inserted into the anterior chamber 26, directing one of the posterior tabs 42 beneath the iris at 6:00. Then, by pulling the iris superiorly, the anterior fixation tab 41 is placed over the iris. A small smooth tipped forceps is used to insert the peg 48 through the apertures of the superiorly placed pair of tabs 41 and 42, attaching these tabs together into the iris iridectomy opening. The iris is then dressed and allowed to contract around the marginal portion 38 of the lens body 36. The wound is then closed tightly and the anterior chamber 26 may be filled with air or saline ointment. Pilocarpine is placed in the anterior chamber 26 or on the cornea 12 and a patch is put on the eye. It is important that the anterior chamber 26 be maintained from the point of operation therefrom. Local miotic and anti-inflammatory drops should be utilized routinely in the post-operative period and for a reasonable post-operative period. Systemic antibiotics should be used.

The power of the lens to be used for a patient can be computed using standard technique and ultrasound devices to determine the axial length of the eye. Also, a lens for human use should preferably incorporate an ultraviolet filter, added as a coating to the lens body 36.

What is claimed is:

1. An intraocular lens device for implantation in the eye and comprising a lens body formed from a medical grade silicone elastomer having a refractive index slightly higher than the aqueous humor of the eye and a desired refractive power, said lens body including a generally cylindrical marginal portion adapted to be fitted within the pupillary margin of the iris;

and means for the fixation of the lens device to the iris, said fixation means including a plurality of flexible plate-like tabs formed of said silicone material and projecting outwardly from said marginal portion of the lens body for placement in overlapping relation with at least one of the anterior and posterior surfaces of the iris.

2. An intraocular lens device according to claim 1 wherein the thickness of said flexible tabs is less than one millimeter.

3. An intraocular lens device according to claim 1 wherein said fixation means includes a circular disk for placement in overlapping relation with the posterior surface of the iris.