

mally, the diameter will be approximately twelve millimeters (where the portion 36 has a diameter of eight millimeters and the flange has a width of two millimeters of each side of the lens member 32). The degree of change in the anterior/posterior dimensions will be from 1 to 2 millimeters, this change being produced by the pull of the zonules 14 when exerting their muscular control over my lens 30 to 130. It must be borne in mind that the capsular bag 16, which is of biological origin, is retained within the eye 10 and made use of when practicing my invention.

Once having performed the above, the material within the natural lens is fairly loose. It is then that an irrigating vectis, being a loop-like device, is slid beneath the hard part of the natural lens so that the natural lens is completely free and can be lifted up and out of the natural capsule 16 of the eye 10, doing so through the incisions 23 and 24. There may at times be some residual cortex, which is a soft part of the cataract (assuming that the implant is prompted by a cataractus condition), and at this point another special cannula is made use of which irrigates on one side and aspirates on the other side, enabling the soft residual material to be stripped from the natural capsule throughout its entire area, that is throughout 360 degrees, thereby leaving the natural capsule with a clear inner surface.

It is at this stage that the eye 8 is ready for my lens 30 to be implanted therein. The lens members 32 and 34, as is evident, constitute a two-piece lens 30 when assembled. First, the posterior lens member 32 is inserted into the natural lens capsule 16, which has been completely cleaned as described above, by grasping the U-shaped flange 38 of the lens member 32 in the region of the positioning holes 44. Actually, the forceps can be designed to have its angled jaws or pincer ends receivable in the holes 44. In any event, the forceps are employed to literally push the posterior lens member 32 through the incisions 23 and 24 so that it then resides within the cavity of the natural lens capsule 16. Owing to the deformability of the lens member 32, it can be folded to whatever extent is needed to enable it to pass through the incision 24 (and of course the incision 23 in the cornea 22) that has been initially provided for the extraction of the natural lens.

Once the posterior lens member 32 has been inserted or implanted, the next step is to insert or implant the other lens member 34. This is done by inserting the anterior lens member 34 through the same incision 24. In doing so, the surgeon must be careful to first position or orient the posterior lens member 32 so that its positioning holes 44 reside to either side of the 12 o'clock position. Utilizing the positioning holes 50 and the same or similar forceps, the anterior lens member 34 is pressed inwardly through the incision 24. It is at this time that the surgeon must be careful to guide the flange 48 through the slots 40, formed in the U-shaped flange of the now in place posterior lens member 32. The surgeon may very well wish to use two forceps, holding the posterior lens member 32 with one while guiding the other lens member 34 through the slots 40. It is believed that this sequential action is aptly understood from FIGS. 3, 4, 7 and 8. The surgeon, once the flange 48 has been inserted into the slots 40 continues to advance the anterior lens member 34 into the groove 39 of the U-shaped flange 38, doing so in a gentle manner.

Once the anterior lens member 34 has been advanced so that its flange 48 is fully received in the groove 39 formed in the U-shaped flange 38, there remains a seg-

mental portion of the anterior lens member 34 that must literally be tucked into that portion of the groove 39 extending between the slots 40. While it is assumed that the anterior lens member 34 will have a circular shape, somewhat less in diameter than the outer diameter of the lens member 32 (by about 0.5 millimeter) it can, depending upon the stiffness of the lens member 34, turn out that a segmental portion of the lens member 34 extending somewhat to either side of the 12 o'clock position be cut off or severed so that the flange 48, for the most part, will reside throughout its periphery within the groove 39. The surgeon will know from previous experiences as to whether it is necessary to remove a segmental portion of the anterior lens member 34. When a segmental portion is to be removed, it will be generally along the dashed line labeled 70 in FIG. 8. This might very well leave a chord-like opening. However, even though such an opening would permit some of the eye fluid to enter into the cavity of the assembled lens 30 occupied almost completely by my lens 30 (or 130), it does not interfere with the focusing capability of lens 30. As a matter of fact, some fluid might very well enter through the holes 44 and 50.

As already indicated, it is contemplated that the biasing mechanism in the form of the resilient strips 52, 54 be attached to the posterior lens member 32 before the implanting step. Once the two lens members 32 and 34 have been completely engaged and assembled with each other, then the members 52, 54 can be literally uprighted or moved through 90°. To do this, an incision 66 (or two equally-spaced incisions) is made. This incision 66 can actually be made prior to the implanting of the lens member 34 (or 134), but it simplifies the drawings to show the incision 66 only in FIG. 9. An appropriately angled implement 68 is then inserted through the incision 66 by the surgeon and its free end used to tilt the resilient strip 54 from its horizontal or dotted position of FIG. 9 through the 45° inclination or solid line position thereof in FIG. 9 into the vertical position depicted in FIG. 2. The inserted or free end of the implement 68 simply presses against the strip 54 to whatever extent is necessary to cause the strip 54 to bow or curve sufficiently to allow its free end to literally snap into place behind the rib 62, as shown in FIG. 2. The strip 52 is manipulated in the same manner, preferably by using the same incision 66. However, a second incision 66 can be made, such second incision 66 then being adjacent the right-hand rib 62, as viewed in FIG. 9.

Whether it be the lens 30 or the lens 130, the capability of focusing is provided so that the user can see objects to him or her when less compressive action is supplied by the natural capsule 16. When objects farther away are to be viewed, then the lens 30 or 130, as the case may be, becomes considerably flatter, becoming so in virtually the same manner as is done when relying on an undamaged natural lens.

I claim:

1. An accommodating intraocular lens comprising first and second flexible membrane-like lens members adapted to be inserted into a natural human lens capsule, said members having mutually interengaging means for connecting each other adjacent their edges after insertion into a natural human lens capsule, said lens members being yieldably biased in a direction to increase the distance therebetween and to thus produce a normal bulging thereof so as to allow a repeated bi-directional movement of central portions of said members relative to each other when subjected to the muscular or con-