capsular bag and should cause some posterior deflection of the lens against the elastic posterior capsule **24**. Accordingly, brain-induced constriction and relaxation of the ciliary muscle **28** after fibrosis of the torn capsular rim is complete should effect accommodation of the plate haptic spring lens in much the same way, but possibly not with the same amount of accommodation, as the simple plate haptic lens with an intact non-ruptured capsular rim.

While the plate haptic spring lens **420** is designed for use with a ruptured anterior capsular remnant or rim, it can also be utilized with an intact rim. A plate haptic spring lens also compensates for improper lens placement in the eye with one end of the lens situated in the capsular bag and the other end of the lens situated in the ciliary sulcus of the eye since the spring loops will expand outwardly to engage both the inner edge of the bag and the wall of the ciliary sulcus. In this regard, an advantage of the plate haptic spring lenses of the invention over the simple plate haptic lenses resides in the fact-that the spring lenses eliminate the need to have on hand in the operating room both a simple plate haptic lens for use with an intact capsular rim and a plate haptic spring lens as a backup for the plate haptic lens in the event the rim is ruptured during surgery.

Another advantage of the haptic spring lens **420** resides in the fact that it permits the lens to have a larger optic than a simple plate haptic lens whose optic diameters will normally be within the range of 4-7 mm. Thus, since the haptic spring lens relies on the spring loops **424** rather than on the capsular remnant or rim **22** to retain the lens in position during fibrosis, the lens may be used with a capsular remnant or rim of smaller radial width and hence larger capsulotomy diameter than those required for use of the simple plate haptic accommodating lenses. The larger capsulotomy, of course, permits a larger optic diameter in the range of 7–9 mm which offers certain ophthalmological benefits.

The large capsulotomy necessary to accommodate a large optic spring accommodating lens may be formed during the original surgery by a planned large continuous tear circular capsulorhexis, a beer can capsulorhexis of the desired large diameter, a planned envelope capsulotomy or the cutting of radial slits into a small continuous tear capsulotomy during surgery after implanting the spring accommodating lens. According to another of its aspects, the invention provides a method whereby the desired large anterior capsulotomy may be formed after the original surgery following completion of fibrosis. This method involves slitting an annular capsular rim radially with a laser after fibrosis is complete into a number of flap-like remnants **434** (FIG. **41**) which are easily displaced by the lens during accommodation to enlarge the capsulotomy sufficiently to permit the lens optic to pass through the capsulotomy. Alternatively, the capsulotomy may be enlarged by cutting the capsular rim with a laser circumferentially along a circular line **436** (FIG. **42**) concentric with and radially outwardly of the original edge of the capsulotomy to enlarge the latter.

The modified plate haptic spring lens **500** of FIG. **43** is identical to the lens **420** just described except that the haptics **502** of the modified lens, rather than being hinged to the lens optic **504**, are resiliently flexible throughout their length like those of the plate haptic lens in FIG. **9**. FIG. **44** illustrates a further modified plate haptic spring lens **600** according to the invention which is identical to the lens **420** except that the spring loops **602** of the modified lens are formed integrally with the lens haptics **604**. The modified lens **700** and **800** of FIGS. **45** and **46** are identical to the lens **600** except that the modified lenses have a pair of spring loops at each end. The spring loops **702** of lens **700** have common base portions **704** integrally joined to the ends of the lens haptics **706** along the longitudinal centerline of the lens and free ends which curve outwardly from the base portions both endwise and laterally of the lens. The spring loops **802** of lens **800** have base portions **804** integrally joined to the ends of the lens haptics **806** along the longitudinal edges of the haptics and opposite free ends which curve inwardly toward one another laterally of the lens.

Thus there has been shown and described a novel accommodating intraocular lens which fulfills all the objects and advantages sought therefor. Many changes, modifications, variations and other uses and applications of the subject invention will, however, become apparent to those skilled in the art after considering this specification together with the accompanying drawings and claims. All such changes, modifications, variations and other uses and applications which do not depart from the spirit and scope of the invention are deemed to be covered by the invention which is limited only by the claims which follow.

The inventor claims:

1. An ophthalmic method for providing accommodating vision to a human eye having a natural capsular bag attached about its perimeter to the ciliary muscle of the eye and from which the natural lens matrix has been removed, the bag including an elastic posterior capsule urged anteriorly by vitreous pressure in the eye, and an anterior capsulotomy circumferentially surrounded by a capsular remnant having epithelial cells on its posterior side which cause fusion of the remnant to the posterior capsule by fibrosis during a certain postoperative period following surgery, said method comprising the steps of:

providing an intraocular lens having normally anterior and posterior sides and including a central optic, and plate haptics extending from opposite edges of the optic and having inner ends joined to the optic and opposite outer ends movable anteriorly and posteriorly relative to said optic,

paralyzing the ciliary muscle to place the muscle in its relaxed state,

while the ciliary muscle is paralyzed in its relaxed state, implanting said intraocular lens within said capsular bag in a position wherein the outer ends of said haptics are disposed between said capsular remnant and the outer perimeter of said posterior capsule and said optic is aligned with said capsulotomy, and

maintaining the ciliary muscle in its relaxed state during said postoperative period in a manner such that fibrosis occurs about said haptics and the haptics form pockets in the fibrose tissue, and after completion of fibrosis, relaxation of the ciliary muscle causes posterior deflection of the implanted lens and constriction of the ciliary muscle causes anterior accommodation of the implanted lens.

2. An ophthalmic method according to claim **1** wherein:

paralyzing the ciliary muscle stretches the capsular bag to its maximum diameter and stretches said capsular remnant to a relatively taut condition,

fibrosis produces shrinkage off said capsular remnant, opposing endwise compression forces of said lens haptics, and posterior deflection of said implanted lens by said compression forces and said capsular remnant to a distant vison position wherein the implanted lens presses rearwardly against said posterior capsule and stretches the posterior capsule rearwardly to produce an anterior bias force on the implanted lens,

relaxation of the ciliary muscle after fibrosis is complete reduces said vitreous pressure and causes posterior