

ually lifted off the retaining surface 48 and rotated about the axis through the base portion 26 until they are free of the flanged portion 47 as shown in FIG. 3. Once the clip 25 is released, the resiliency of the material urges the end 34 of the clip toward and into a clamping engagement with the iris 56 in an iris-receiving position. Depending upon the spring force associated with the resilient material and the sharpness of the end 34, the clip may cut through the iris 56 and enter the corresponding recess 24. The clamping engagement in which the clips 25 secure the iris 56 to the front face 14 is further illustrated in cross-section in FIG. 4. After all of the clips 25 have been removed from the retaining surface 48 of the tool 13, the tool is detached from the lens and may be removed. After the lens 12 is secured to the iris 56 the cornea is sutured to close the entry into the anterior chamber 54 and the operation is complete.

It should be recognized that in some instances it may be desirable to surgically cut the iris 56 to allow the ends 34 to pass through the iris and into the recess 24.

Referring now to FIGS. 5-9, a second embodiment the lens 12 is similar to the lens previously described but differs in that it includes four clips 25. However, the clips 25 are comprised of a malleable deformable material, such as platinum, gold, or iridium, which enables them to be easily formed into a desired shape. A surgical lens carrying tool 70 includes a lever-like handle 72 comprising lever arms 74 and 76. Integral with the lever arm 74 is a foot 78 having a bore 80 centrally therethrough and having an outer surface formed to define a concave lens engaging surface 84. The outer wall of the foot 78 is curved inwardly toward the axis through the bore 80 and defines a clip retaining surface 90 which serves to attach the four clips 25 to the surgical tool 70 in a manner as will be subsequently described. Hingedly connected to the distal end of the lever arm 76 is a plunger 86 which is slidably disposed within the bore 80 of the foot 78.

With reference to FIG. 6, the lens 12 is mounted to the tool 70 with the lens engaging surface 84 matingly disposed against the central portion 16 and with the arcuate portions 30 of the clips 25 deformed inwardly against the retaining surface 90 such that the clip 25 is spaced from the face 14. Accordingly, the clip 25 and the face 14 form a recess therebetween which is adapted to receive the iris 56. Because the arcuate portion 30 of the clip 25 is disposed over the foot 78, the lens is secured to the tool 70.

With reference to FIGS. 7 and 8, the lens 12 is inserted into the posterior chamber 52 in the manner previously described. Once the lens 12 is placed adjacent the iris 56 in the desired position, the lever arms 74 and 76 are actuated, or squeezed together, thereby forcing the plunger 86 through the bore 80 and against the front face 14 which forces the foot 78 to move away from the face 14. As the foot 78 moves away from the face 14 the retaining surfaces 90 transmit an outwardly directed force against the arcuate portion 30 of the malleable clips 25 (see FIG. 9). Consequently, the clips 25 are moved outwardly away from the foot 78 and toward the front face 14. Continued movement of the foot 78 eventually releases the lens 12 from the tool 70 and forces the ends 34 into engagement with the iris 56 as shown by the dashed lines in FIG. 9.

It should be realized that in some instances the surgeon may prefer to bend the end 34 against and into the

iris 56 prior to actuating the lever arms 74 and 76. This assures that the lens 12 is clamped to the iris 56 before detaching the lens from the tool 13.

Although the tool 70 has been described as comprising a plunging mechanism, it should be recognized that other reciprocating mechanical movements may be employed to free the lens from the tool. Moreover, should it be desired, the ends 34 may be formed into a hook shape to facilitate a clamping engagement with the iris 56. In addition, the shape of the lens and the number of clips may vary as will be easily seen by those skilled in the art.

From the above description it can be seen that an intraocular lens apparatus has been described which fulfills all of the objects and advantages set forth above.

While the invention has been particularly shown and described with reference to certain preferred embodiments, it will be understood by those skilled in the art that various alterations and modifications in form and in detail may be made therein. Accordingly, it is intended that the following claims cover all such alterations and modifications as fall within the true spirit and scope of the invention.

What is claimed is:

1. An intraocular lens apparatus for insertion into a posterior chamber adjacent the iris of an eye, comprising:

a lens having a front face, a central portion and an outer periphery; and

a plurality of cantilevered clips, each mounted to said central portion and extending outwardly from said face and toward said periphery, said clips being adapted to secure the iris to the front face of said lens when said lens is positioned within the posterior chamber of the eye immediately behind the iris.

2. An intraocular lens apparatus as recited in claim 1 wherein said face includes a plurality of recesses for respectively receiving the securing portion of each of said plurality of clips.

3. An intraocular lens apparatus as recited in claim 1 wherein said clip is comprised of a resilient material, said material serving to bias said clip toward said face.

4. An intraocular lens apparatus as recited in claim 3 wherein each clip includes a base portion mounted to said central portion, said base portion being rotatable about an axis therethrough.

5. An intraocular lens apparatus as recited in claim 4 wherein said central portion includes a plurality of apertures therethrough and wherein said base portions extend through corresponding ones of said apertures.

6. An intraocular lens apparatus as recited in claim 4 wherein each said base portion includes a flange portion for securing said clip to said lens.

7. An intraocular lens apparatus as recited in claim 1 wherein each said clip is comprised of a deformable, malleable material such that said clip may be formed into a predetermined shape.

8. An intraocular lens apparatus as recited in claim 7 wherein each said base portion includes flanges at its respective ends for securing said clip to said lens.

9. An intraocular lens apparatus as recited in claim 1 and further including in combination, a lens carrying tool for use in inserting said lens into the eye, said tool including a handle portion, and a foot portion, said foot portion having a lens engaging surface adapted to engage said front face, and means forming a clip retainer