the invention to be read in conjunction with the accompanying drawings, wherein:

FIG. 1 is a plan view of an intraocular prosthetic lens, according to the invention;

FIG. 2 is a side view of FIG. 1;

FIG. 3 is a section taken on the line III—III in FIG. 1;

FIG. 4 is a view taken along the line IV—IV in FIG. 1; and

FIGS. 5 through 9 represent shcematically an eye when an intraocular prosthetic lens is being implanted therein, according to the invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Now let us refer to FIG. 1 which makes it evident that the intraocular prosthetic lens, according to the invention, comprises an optical element 1 and two diametrically opposite supporting setting elements shaped as platforms 2 and 3. One of the supporting elements is in fact a platform incorporating a circumferential sector 4 situated at the platform end most removed from the optical element 1. The sector 4 is joined with the optical element 1 through a conjugate portion 5 having concave lateral sides 6 that form shoulders 7 in the zone of junction with the sector 4.

Another platform 3 servicing as the other supporting element, is formed by two rounded-off portions 8 arranged symmetrically with respect to a plane passing through the centre of the optical element and in the middle of the sector 4. Generally speaking, it may be assumed that the rounded-off portions 8 are arranged radially. The rounded-off portions 8 are conjugated with each other and joined with the optical element 1 through a transitional portion 9, thus forming projections 10 that face a direction opposite to the optical element 1. As it can well be seen from FIGS. 3 and 4, both of said platforms have biconcave surfaces and, as shown in FIG. 2, they are arranged in a common plane which coincides with the optical element central plane. It can also be seen from comparison of FIGS. 3 and 4, and from FIG. 2 that one of the platforms is thicker than the other. Through holes 11 are provided in the platform 2 and in the rounded-off portions 8, aimed at a better supply of the angle of the anterior eye chamber in this zone, thus reducing the incidence of the post-operative complications.

The element described above can be manufactured by moulding from an appropriate elastic material.

The implantation procedure of the herein-proposed intraocular prosthetic lens occurs as follows. A 3-mm long incision of the cornea is performed under local anesthesia at 5 o'clock (FIG. 5), whereupon an irrigation system (omitted in the Drawing) is introduced into the anterior eye chamber. Then a 4–6 mm long incision 12 is made along the dial from 11 and 2 o'clock. The anterior crystalline capsule is slit open according to the routine technique applicable for extracapsular cataract extraction. The nucleus of the lens and the crystalline mass are removed likewise typically of the extracapsular cataract extraction. Thereupon the intraocular prosthetic lens is taken hold of through a forceps by the transitional portion 9 and is then inserted into the anterior eye chamber with the supporting setting element 2 forward (FIG. 6). As a result, the lips of the corneoscleral incision 12 are brought together past the shoulders 7 to fix the supporting setting element 2 in position, whereby the shoulders 7 perform additional tamponing of the incision 12 which makes it possible to fill up the anterior eye chamber at a minimum consumption of the irrigation liquid. This, in turn, renders it possible to minimize the injurious effect of the irrigation liquid itself and to avoid damage to the endothelium of the corneal layer and to the posterior crystalline capsule that may be inflicted by the intraocular prosthetic lens in the course of its further implantation. Once the anterior eye chamber has been filled up with the irrigation liquid, the prosthetic lens makes its further progress to the anterior eye chamber until the horizontal portions of the projections 10 of the supporting element 3 get held by the lips of the incision 12 which are brought together past the bases of the projections 10 (FIG. 7). Thus, the provision of the projections on the supporting elements, and of the shoulders formed by the concave lateral sides of the supporting element 2 makes it possible to perform implantation of an intraocular prosthetic lens strictly on a preselected axis and with minimized mechanical efforts applied. This, in addition, reduces the incidence of the intraoperative complications, such as traumatic lesion of the corneal endothelium, rupture of the posterior crystalline capsule followed by vitreoptosis, irido- and goniodialysis, as well as reduces the operating time due to a decreased number of surgeon's manipulations involved in the prosthetic lens implanting procedure. At the next stage the rounded-off portions of the supporting element 3 protruding beyond the lips of the incision 12, are buried into the bay of the angle of the anterior eye chamber. In this case the rounded-off portions 8 of the supporting element 3 are set behind the scleral lip 13 of the incision 12 with the aid of a spatula passed through the hole 11 in the supporting element 3 (FIG. 8). Next the anterior eye chamber is restored, hermetical sutures are applied to the wound, and a monocular eye bandage is placed.

The supporting element 2 is made thicker than the element 3, whereby a mass-balanced system of supporting elements is created, thus preventing the development of a twisting moment that is liable to occur with movement of an artiphakial eye. In addition, this enables one to compensate for such a dimensional discrepancy that occurs when the length of a prosthetic lens is less than the diameter of the anterior eye chamber, this being due to the fact that the thicker supporting element 2 is stably fixed at the angle 14 of the anterior eye chamber without getting in contact with the latter through its end-face portion 15 (FIG. 9).

Practical application of the present invention makes it possible to avoid damage to the endothelial cells of the cornea, corneal edema within the postoperative period, and to render postoperative glaucoma less probable. Besides, the proposed construction of an intraocular prosthetic lens contributes to better operating conditions and makes it possible to reduce the operating time.

While in the foregoing, a preferred embodiment of an intraocular prosthetic lens has been described, according to the invention, as well its implantation techniques, it will be understood that various changes and modifications may be made in the construction of the intraocular prosthetic lens of the invention within the limits of the spirit and scope of the present invention.

What is claimed is:

1. An intraocular prosthetic lens, comprising an optical element, two diametrically opposite supporting setting elements shaped as platforms,

one of said platforms formed by a circumferential sector situated on the platform side distant from the