Alternatively, the optical lens **80** can be placed over the cornea in the position shown by dashed lens **84**.

FIG. **12** is a pictorial representation of the optical lens **80** having a ring **86** embedded within the lens body. This enables a contact lens to obtain the optical effect for substitution of the loss of the accommodation of an eye by increasing the normal depth of focus of the eye by means of the effect of an intraocular stenopaeic hole.

FIG. **13** illustrates that the optical lens functions as an iris diaphragm and can have a wide range of shapes and locations for the opaque ring. In FIG. **13**, the lens body **90** has the endless annular-shaped member formed interiorally therein, and the stenopaeic pinhole effect is created in the center by the non-transparent or opaque disc **92**. Thus, the embodiment of FIG. **13** can be characterized as an artificial iris diaphragm. The external dimension of the lens body **90** of FIG. **13** is about 6.00 millimeters. The annular-shaped member **92** located within the lens body **90** has an outside diameter of about 3.50 millimeters, but this diameter can be anywhere between about 2.00 millimeters to about 5.00 millimeters. The annular-shaped member **92** has an inside dimension to define the stenopaeic in the order of about 0.75 millimeters, but this can vary between about 0.05 millimeters to about 2.00 millimeters. It is preferable to have the external dimension of the lens body less than the diameter of the pupil of the eye. Also, a difference in the dimension of the diameter between the lens body and the diameter of the outside of the mid-width dilation pupil is required to enable the light rays to pass through the peripheral annular part of the lens body to obtain the far accommodation.

FIG. **14**(*a*) illustrates, in cross section, that a plano-convex lens body **94** has the annular member **96** formed in the center thereof and that the stenopaeic pinhole defining the light transmission path extends from the top surface, through the lens body, and out the bottom surface.

FIG. **14**(*b*) illustrates a bi-convex lens wherein the top surface of the lens body **98** has an annular-shaped member of opaque material **100** formed on the surface thereof to provide the stenopaeic pinhole effect.

FIG **14**(*c*) shows an alternate embodiment of a plano-convex lens body **94** having an annular-shaped member **92** formed on the bottom thereof to provide the stenopaeic pinhole effect.

FIG. **14**(*d*) shows a meniscus lens body **104** having an annular-shaped member **106** formed on the bottom surface thereof to form the stenopaeic pinhole effect. Any of the lens bodies in FIGS. **14**(*a*), **14**(*b*), **14**(*c*) and **14**(*d*) can have the opaque annular member located on the top surface, in the lens interior, or on the bottom surface.

FIG. **15** illustrates an alternate embodiment for a lens body **110** of an optical lens of the present invention. In the event that the lens device cannot be exactly centered in the eye, the lens body **110** has positioned in the center thereof a fairly large disc-shaped member **112** formed of an opaque material, and the disc **112** has a plurality of, or multiple, apertures formed therein which are shown generally as **114**, **116** and **118**. The apertures **114**, **116** and **118** are positioned in a predetermined pattern so that each of the apertures is axially aligned in a spaced relationship with each other and each of the apertures has a predetermined diameter. Rather than using a disc with holes, a grid formed of opaque material with preselected hole sizes could be used to achieve the same effect. With the embodiment of FIG. **15**, the combination of apertures provides the desired stenopaeic pinhole effect and the optical lens of FIG. **13** allows a continuous form of accommodation and adaptation of the eye.

FIG. **16**(*a*) illustrates an embodiment for providing the optical effect by use of a difference in refractive power of the lens material. In FIGS. **16**(*a*) and **16**(*b*), the basic lens body is a plano-convex lens **130**. The center of the convex surface is formed of an arcuate-shaped central area **132**. The difference in refractive characteristics of the plano-convex section **130** and the arcuate-shaped central member **132** functions to restore the loss of near and far accommodation of the eye. In the embodiment of FIGS. **16**(*a*) and **16**(*b*), the plano-convex section **130** has a refractive power of about +1.00 to about +3.00 diopters relative to the center of the lens body having the central area **132** formed thereon. The central area **132** would have an external dimension in the order of about 1.00 to about 3.00 millimeters in diameter. The optical lens described in FIGS. **16**(*a*) and **16**(*b*) is usable during constriction of the principal, as occurs during near work and with adequate illumination.

As noted above, it is possible to combine the stenopaeic pinhole effect illustrated in FIG. **13** with the differential refractive characteristic of the lens body illustrated in FIGS. **16**(*a*) and **16**(*b*).

FIG. **17** illustrates graphically the position of an optical lens **140** within an eye **142** wherein the optical lens **140** has an internal opaque ring **144** which provides the stenopaeic pinhole effect. The iris **146** partially covers the lens body **140**. The internal opaque ring **144** receives rays of light **148** and focuses the same at a focus point **150**. The optical lens **140** controls the depth of the focus in order to restore the loss of near and far accommodation of the eye. In the case of near vision, the eyes converge and the pupils narrow. The pupillary constriction (miosis) is increased by the excess illumination which is available at a normal reading distance. Thus, in the case of near vision utilizing the optical lens **140** of FIG. **17**, the peripheral part of the optical lens is covered by the iris **146**. Only the central part of the optical lens having the annular ring **144** gives a sharp, focused sight for near vision.

FIG. **18** illustrates an embodiment of an optic lens **160** which is located within an eye **161**. The optic lens **160** utilizes both the refractive charactistic of the periphery of the lens body and the annular-shaped member **162** to pass the rays of light **166** through the optical lens **160**. The iris **168** is removed from the optical lens **160** as shown, resulting in more light passing through the entire lens body **160**. In the illustration of FIG. **18**, in the case of distant vision with ambient illumination, the pupil is in a mid-width dilation state and permits the light rays to enter the peripheral part of the optical lens as illustrated by light rays **166** of FIG. **18**. This permits the light rays **166** to enter the peripheral part of the optical lens **160** as well as through the center of the annular-shaped member and permits adaptation to darkness.

The lens body for practicing the invention can be fabricated from any suitable lens material. The opaque or non-transparent member can be formed of such material as silver, plastic or a paint layer, if that material is completely enclosed in the optical lens. Preferably, the optical lens can be fabricated from a bio-compatible material, such as platinum, platinum iridium, gold, stainless steel, suitable paint or tinted material or appropriate approved plastic.

What is claimed is: