two intersection points, while varying the inclination of the major axis with respect to the optical axis. Of course, the determination of a suitable eccentricity and angle of inclination of the elliptical cross-section forming a given band can also be achieved mathematically instead of by geometrical construction.

The viewing portion of such a lens produced according to the present invention, i.e. the optical zone, is a centrally located circular area which is of sufficient size to cover the pupil in dilated state, taking into account the lens movement due to blink cycle as well as due to lateral and vertical eye movement. The actual size of the optical zone will be within practical limits well known to those skilled in the art. The optical zone may be surrounded by one or several peripheral zones having the usual lens fitting functions.

It is pointed out that a contact lens constructed according to the present invention may be a bifocal or a multifocal. The width of the bands may be selected according to the clinical requirements and in practical terms, several of the bands must cover the pupil at any one time. The bands are of different dioptric power chosen for near and distant vision. They alternate successively so that at any one time the pupil is covered by several bands representing either near and distant vision in a bifocal lens case or near, intermediate and distant vision in a multifocal lens case.

It is well known that the image processing capacity of the brain allows for a situation where it is presented with a series of different focal plane images. The images of interest are selected and concentrated upon whereas the rest of the images are largely ignored.

Manufacturing a contact lens according to the present invention presents no problems considering the advent of sophisticated computer controlled lathes capable of describing almost any solid of revolution. They also possess the required precision and accuracy. Thus, a lens may be lathe cut. It is also possible to manufacture molds or dies and either mold or cast such a lens. Conversely, a combination of methods may be employed, where a base curve is cast and the front surface is lathe cut or the reverse may be the case. In other words, there are many possibilities for manufacturing such a lens.

What is claimed is:

1. An ophthalmic lens having front and rear optical surfaces and a central optical axis substantially perpendicular to the lens, the lens comprising:

a plurality of concentric, contiguous circular refractive bands provided on at least one of said front and rear optical surfaces, the bands each having a continuous cross-section in the shape of a segment of an ellipse having a given major axis length and eccentricity, the bands being of alternating optical power to focus light on at least two focal planes to provide simultaneous multifocal vision, the major axis of each said segment of an ellipse intersecting the central optical axis and a respective one of said at least two focal planes, said bands being continuous at their boundaries between neighboring ones of said bands.

2. The lens according to claim 1, wherein the eccentricity of one of said bands is zero, whereby said one of said bands has a circular cross-section.

3. The lens according to claim 1, wherein said bands are provided on said front optical surface, and wherein said rear optical surface is spheroid.

4. The lens according to claim 3, wherein the eccentricity of the spheroid rear optical surface is zero, whereby said rear optical surface is spherical.

5. The lens according to claim 1, wherein said bands focus light on two focal planes to provide simultaneous bifocal vision.

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