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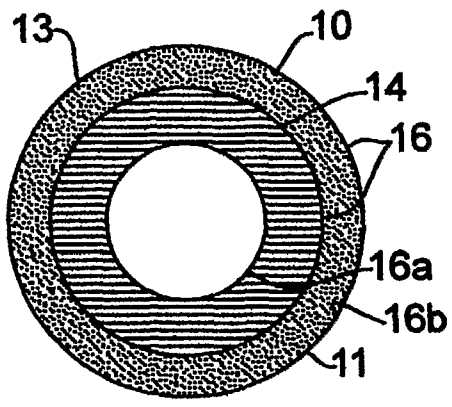
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(54) Title: BIFOCAL MULTIORDER DIFFRACTIVE LENSES FOR VISION CORRECTION



(57) Abstract: A bifocal multiorder diffractive lens (10) is provided having a lens body (11) with one or more first regions (14) having a first multiorder diffractive structure providing near vision correction, and one or more second regions (16) having a second multiorder diffractive structure providing distance vision correction, in which the lens (10) defines an aperture divided between the first and second regions (14, 16). Such one or more first regions (14) may represent one or more annular rings, or other portion of the lens (10), and the second region (16) may occupy the portion of the lens aperture outside the first region (14). The lens body (11) may be provided by a single optical element or multiple optical elements. When multiple optical elements are used, the multiorder diffractive structures may be located along an interior surface (18, 24) of the lens (10). In other embodiments, a bifocal multiorder diffractive lens (10) is provided by a single or multiple element lens body having a multiorder diffractive structure for distance vision correction and one or more refractive regions (17, 22, 28, 29) to add power for near vision correction, or a single or multiple element lens body shaped for refractive power for distance vision correction and a multiorder diffractive structure for add power for near vision correction. The lens (10) may represent a contact lens, a spectacle lens, or the optic portion of an intraocular implant (IOL). Multiorder diffractive structures may be optimized for performance for photopic and scotopic vision.

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