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Roholt

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(54) **ACCOMMODATING INTRA-OCULAR LENS SYSTEM**

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See application file for complete search history.

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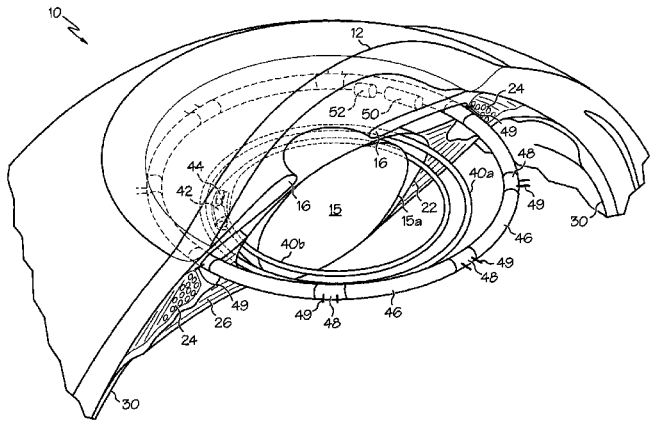
(57) **ABSTRACT**

An implantable, compressible, accommodating intra-ocular lens (IOL) coupled to at least one sensor which detects a signal created by the ciliary muscle. A ciliary sulcus ring can house the at least one sensor, and the sensor can include miniaturized electrodes (ciliary muscle probes) for implanting into the ciliary muscle of the subject. A potentiometer/microcomputer can modulate the ciliary muscle signal detected by the sensor(s) into an electrical signal, and a transmitter sends this electrical signal to a micromotor, which causes compression of the IOL via an annular support ring system, causing a change in the IOL shape. The IOL can be part of an IOL complex including a compressible, accommodating IOL, an external lens membrane, and an annular support ring system. The annular support ring system provides a foundation for the micromotor to compress the IOL.

12 Claims, 5 Drawing Sheets