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**Hendriks et al.**

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(54) **DUEL-LAYER OPTICAL SCANNER WITH NON-PERIODIC PHASE STRUCTURE ELEMENT OF BIREFRINGENT MATERIAL FOR DIFFERENT WAVEFRONT ABERRATION COMPENSATION OF ORTHOGONALLY POLARIZED RADIATION BEAMS**

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(\*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 418 days.

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(51) **Int. Cl.**<sup>7</sup> ..... **G11B 7/00**; G02B 27/44

(57) **ABSTRACT**

(52) **U.S. Cl.** ..... **369/112.26**; 369/112.08; 359/742

An optical scanning device for scanning a dual-layer optical record carrier with dual orthogonally polarized radiation beams. The device having a spherical aberration compensation optical subsystem including a switchable liquid crystal cell of birefringent material for altering different optical paths lengths provided by a phase structure of stepped annular zones.

(58) **Field of Search** ..... 369/112.26, 112.08; 359/741, 742

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**22 Claims, 7 Drawing Sheets**

