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(54) **OPTICAL SCANNING WITH ABERRATION CORRECTION**

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(57) **ABSTRACT**

An optical head scans the information layer (3) of an optical record carrier (1) by means of a radiation beam (13). Optical aberrations in the beam such as coma and spherical aberration, caused by tilt and thickness variations in the optical disc respectively, are compensated by an aberration compensator (27) arranged in the radiation beam. The tilt or thickness variation is measured by a detector (30) and used to control the aberration compensator. The radiation beam is focused onto the information layer by an objective system (11). A displacement of the objective system in the transverse direction (26) as used for radial tracking of the optical beam, causes a mismatch between the wavefront to be compensated and the wavefront introduced by the aberration compensator (27). The detrimental effects of the mismatch are reduced by compensating only part of the aberration. The degree of compensation depends on the maximum displacement of the objective system and the tolerable wavefront error.

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(52) **U.S. Cl.** ..... **369/44.23; 369/44.32; 369/112.01**

(58) **Field of Search** ..... 369/44.11, 44.12, 369/44.23, 44.24, 44.28, 44.32, 53.1, 53.12, 53.14, 53.19, 112.01, 112.02, 94

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**19 Claims, 4 Drawing Sheets**

