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(54) Title: OPTICAL SCANNING DEVICE WITH PARALLEL–CONTROLLED ACTUATORS

(57) Abstract

The invention relates to an optical scanning device (17) for use in an optical player. The scanning device comprises an optical lens system (37) for focusing a light beam (45) into a scanning spot (47) on an information carrier (9) to be scanned. The scanning device comprises a first actuator (51) by means of which the lens system can be displaced in a direction parallel to an optical axis (39) of the lens system for focusing the light beam on the information carrier. The first actuator is controlled by means of a first control unit (87) via a first control signal (u_{c1}). The lens system comprises a main or objective lens (55) and an auxiliary or solid–immersion lens (54) providing the lens system with a large numerical aperture, so that the scanning device can suitably be used to scan information carriers with a high information density, such as high–density compact discs. The main lens is elastically suspended with respect to the auxiliary lens, and the lens system comprises a second actuator (63) for displacing the main lens with respect to the auxiliary lens in a direction parallel to the optical axis to compensate for a spherical aberration of the light beam in a transparent protection layer (13) of the information carrier. The second actuator is controlled by a second control unit (89) via a second control signal (u_{c2}). According to the invention, the second actuator is also controlled by the first control unit via a third control signal (u_{c3}) which is proportional to the first control signal. In this manner, resonances of the main lens occurring as a result of its elastic suspension are prevented.

