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(54) Title: OPTICAL SCANNING DEVICE COMPRISING A MAIN LENS AND AN AUXILIARY LENS

(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 is displaceable parallel to an optical axis (39) of the lens system for focusing the light beam on the information carrier. The lens system comprises a main lens or objective lens (53) and an auxiliary or solid immersion lens (55), providing the lens system with a large numerical aperture, so that the scanning device is suitable for scanning information carriers with a high information density such as, for example, high density compact discs. The lens system further comprises a second actuator (63) by means of which the main and auxiliary lenses are mutually displaceable in a direction parallel to the optical axis for compensating a spherical aberration in a transparent protection layer (13) of the information carrier. According to the invention, the auxiliary lens is secured in a fixed position to a housing (57) of the lens system, while the main lens is suspended in the housing in a direction parallel to the optical axis by means of an elastically deformable mounting unit (61), the main lens being displaceable relative to the auxiliary lens by means of the second actuator. In this manner, the necessary power of the first actuator is limited considerably.

