OPTICAL DEVICE

ABSTRACT OF THE DISCLOSURE

An optical device includes a light-emitting element for irradiating light onto an information recording medium, a diffraction grating for splitting light emitted from said light-emitting element into a plurality of beams, a focussing member for focussing the plurality of beams onto the information recording medium, a deflection member for deflecting the plurality of beams after they have been reflected from the information recording medium; and a photodetector for receiving the plurality of beams after they have been deflected by the deflection member. The diffraction grating has a first grating region and a second grating region, which have different diffraction efficiencies. The zero-order diffraction light in the first grating region is used as the main beam for reproducing the information signal, and the +1-order or −1-order diffraction light in the second grating regions is used as sub-beams for reproduction of the tracking error signal. Thus, the light amount of both the main beam and the sub-beams can be increased without increasing the light emission of the semiconductor laser element 1, and the S/N ratio of the main beam and the sub-beams can be enhanced.

Fig. 13

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