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Kermani

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(54) **MULTI-DIMENSIONAL OPTICAL DISK**

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369/59.1

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(57) **ABSTRACT**

The present invention provides an optical disk with pits and/or bumps which each contain a plurality of facets. Each facet of each pit and/or bump is intended for separate read back as an individual 'side' of the optical disk (much as vinyl records had two 'sides' for separate playback). The separate 'sides' of the optical disk formed by separate facets of each pit and/or bump can be read back either simultaneously or serially, either by a corresponding plurality of laser beams, or by a common laser beam which is positioned to a first orientation with respect to a rotating track to focus on a first set of facets of each pit and/or bump, and then repositioned to focus on a second set of facets of the same set of pits and/or bumps and thus to read a second 'side' of the optical disk. The technique may be extended to provide a single optical disk and even a single track of the optical disk with even more than two 'sides' by using three-, four- or five-sided pyramidal-shaped pits and/or bumps.

28 Claims, 8 Drawing Sheets

