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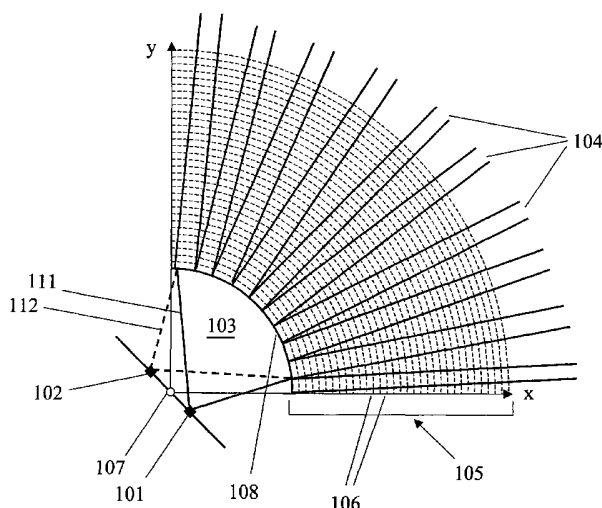
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[Continued on next page]

(54) Title: OPTICAL STRUCTURES DISTRIBUTED AMONG MULTIPLE OPTICAL WAVEGUIDES



(57) Abstract: An optical apparatus comprises an optical element having at least one set of diffractive elements and multiple channel optical waveguides. Diffractive elements of each set are distributed among diffractive element subsets corresponding to each of the multiple channel waveguides. Each diffractive element set routes, between a corresponding pair of optical ports, those corresponding portions of an optical signal propagating within the optical element that are received by multiple channel waveguides and back-diffracted within the receiving channel waveguides by corresponding diffractive element subsets. The channel optical waveguides are arranged so that optical signals propagate through regions of the optical element between the ports and the first ends of the channel waveguides. Relative spatial arrangement of the first ends of the channel waveguides and corresponding relative phase shifts imparted in the channel waveguides define at least in part a relative spatial arrangement of the corresponding pair of optical ports.

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A. CLASSIFICATION OF SUBJECT MATTER

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 US CL : 385/37, 10, 3, 14

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B. FIELDS SEARCHED

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
 NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 EAST

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A,P	US 6,678,429 B2 (MOSSBERG et al) 13 January 2004 (13.01.2004), see entire document.	1-58
A,E	US 2004/0076374 A1 (GREINER et al) 22 April 2004 (22.04.2004), see entire document.	1-58

Further documents are listed in the continuation of Box C.

See patent family annex.

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"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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"O" document referring to an oral disclosure, use, exhibition or other means	
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