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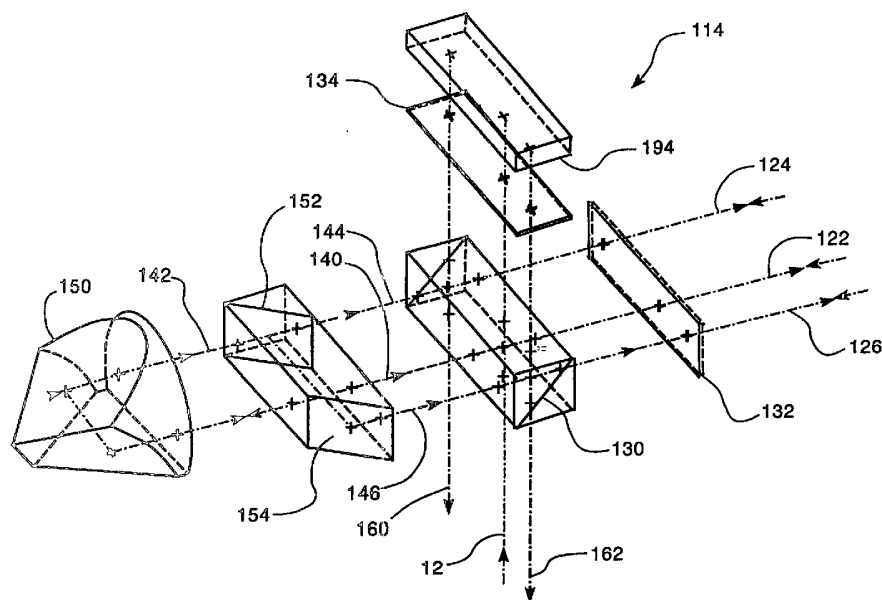
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[Continued on next page]

(54) Title: MULTIPLE DEGREE OF FREEDOM INTERFEROMETER



(57) Abstract: An apparatus includes a multi-axis interferometer (114) for measuring a relative position of a reflective measurement object along multiple degrees of freedom, wherein the interferometer is configured to produce multiple output beams (122, 124, 126) each comprising information about the relative position of the measurement object with respect to a different one of the degrees of freedom. Each output beam includes a beam component that contacts the measurement object at least one time along a common path (122), and at least one of the beam components further contacts the measurement object at least a second time along a first path different from the common path.



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INTERNATIONAL SEARCH REPORT

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 IPC(7) : G01B 9/02
 US CL : 356/487
 According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
 Minimum documentation searched (classification system followed by classification symbols)
 U.S. : 356/487, 486, 493, 500

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)
 Please See Continuation Sheet


C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6,046,792 A (VAN DER WERF et al) 04 April 2000 (04.04.2000), see entire document.	1-70
A	US 4,881,816 A (ZANONI) 21 November 1989 (21.11.1989), see entire document.	1-70

Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:	"T" • later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"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
"E" earlier application or patent published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

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INTERNATIONAL SEARCH REPORT

PCT/US03/02447

Continuation of B. FIELDS SEARCHED Item 3:

USPTO APS EAST

search terms: interfer, interfere, interfering, interference, interferometer, interferometric, interferometrically, distance, displacement, position, polarize, polarizing, polarization, heterodyn, heterodyne, heterodyning