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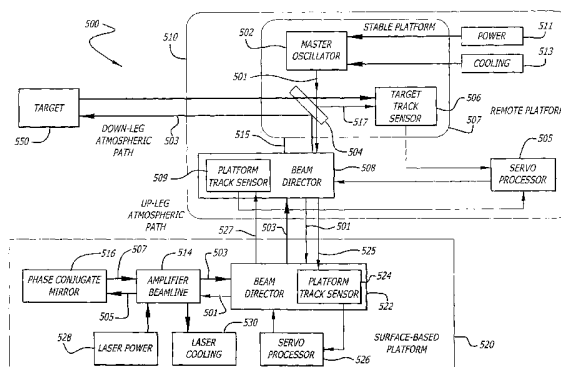
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- (71) Applicants: **RAYTHEON COMPANY** [US/US]; EO/EO4/N119, 2000 East El Segundo Blvd., P.O. Box 902, El Segundo, CA 90245-0902 (US). **ALKOV, Leonard, A.** [US/US]; EO/EO4/N119, P.O. Box 902, 2000 E. El Segundo Boulevard, El Segundo, CA 90245-0902 (US). **LENZEN, Glenn, H.** [US/US]; 141 Spring Street, Lexington, MA 02421-7899 (US). (88) Date of publication of the international search report: 8 July 2004
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: PHASE CONJUGATE RELAY MIRROR APPARATUS FOR HIGH ENERGY LASER SYSTEM AND METHOD



(57) Abstract: A system (500) for directing electromagnetic energy. The inventive system includes a first subsystem mounted on a first platform (520) for transmitting a beam of the electromagnetic energy through a medium and a second subsystem mounted on a second platform (510) for redirecting the beam (503). In accordance with the invention, the second platform (510) is mobile relative to the first platform (520). In the illustrative embodiment, the beam is a high-energy laser beam (503). The first subsystem includes a phase conjugate mirror (510) in optical alignment with a laser amplifier (514). The first subsystem further includes a beam director (522) in optical alignment with the amplifier (514) and a platform track sensor (524) coupled thereto. In the illustrative embodiment, the second subsystem includes a co-aligned master oscillator (502), outcoupler 504, and target track sensor (506) which are fixedly mounted to a stabilized platform (507), a beam director (508), and a platform track sensor (509). In the best mode, the stable platform (507) is mounted for independent articulation relative to the beam director (508). A first alternative embodiment of the second subsystem includes first and second beam directors (508, 610). The first beam director is adapted to receive the transmitted beam and the second beam director is adapted to redirect the received beam. In accordance with a second alternative embodiment, an optical fiber (710) is provided for coupling the beam between the first platform (520) and the second platform (510).

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INTERNATIONAL SEARCH REPORT

Application No

PCT/US 03/33010

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H01S3/00

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)

IPC 7 H01S G01S F41G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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

EPO-Internal, WPI Data, PAJ, IBM-TDB, INSPEC, COMPENDEX

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 557 347 A (JOHNSON WILLIAM M) 17 September 1996 (1996-09-17) column 5, line 13 -column 6, line 62	1,2,5,8, 12
Y	column 10, line 42 -column 11, line 3; figures 1,3,4,6	9-11
X	--- HARTMANN ET AL.: "EAGLE: relay mirror technology development" PROC. SPIE - INT. SOC. OPT. ENG. (USA), vol. 4724, 1 April 2002 (2002-04-01), pages 110-115, XP002272937	1,2,5,8, 12
O,Y	the whole document & CONFERENCE ON LASER WEAPONS TECHNOLOGY III, 01 APRIL 2002, Orlando, FL (USA) --- -/--	9-11

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Gnugesser, H

INTERNATIONAL SEARCH REPORT

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4 853 528 A (BYREN ROBERT W ET AL) 1 August 1989 (1989-08-01) the whole document -----	9-11

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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			NO 873463 A ,B,	17-08-1987
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			WO 8703956 A1	02-07-1987