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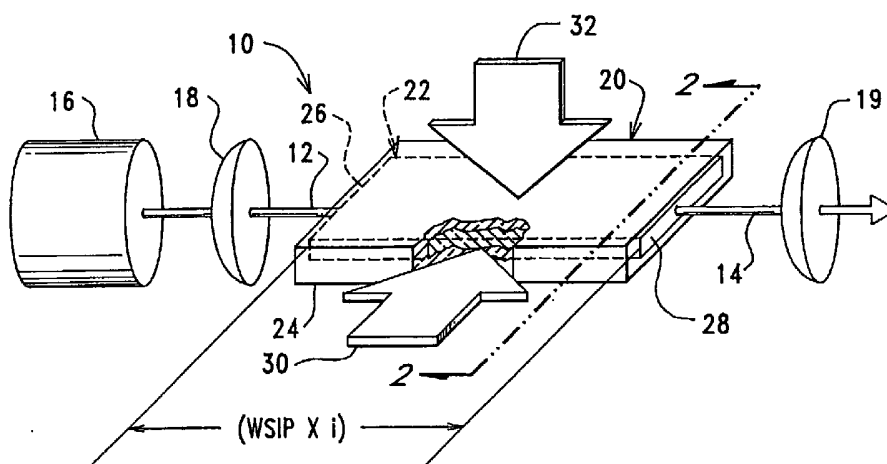
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Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK,

[Continued on next page]

(54) Title: POWER SCALABLE WAVEGUIDE AMPLIFIER AND LASER DEVICES



(57) Abstract: The present invention is directed to guided wave systems, beam transport and waveguide techniques. The invention may comprise passive or active, hollow and dielectric core self-imaging mode wave guide systems, beam amplifiers (10, 40), laser resonators (70), beam transports, and waveguides. Embodiments may include rectangular cross-section waveguides, and preferably maintaining spatial profile of an input beam, such as a Gaussian beam, through the self-imaging period of the waveguide while unique new capabilities to mitigate non-linear distortions that corrupt spatial, spectral and temporal coherence and polarization. Additional aspects may include, for example, transport, amplification, phase/frequency control or modulation, deflection, conversion, synthetic aperture, distributed aperture, beam forming, beam steering, beam combining, power sampling, power combining and power splitting, among other features. Some embodiments may provide a self-imaging, multimode, waveguide (10) and self-imaging guided wave systems and beam transport. Embodiments of the present invention may further provide a method of self-imaging, multimode beam transport and other self-imaging wave guidance techniques.



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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H01S G02B

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, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 608 745 A (COLLEY ALAN D ET AL) 4 March 1997 (1997-03-04) column 10, line 6 - line 15; figure 12 column 1, line 6 - line 12, last paragraph; figure 11 column 9, line 44 - line 50 ---	1-45
A	US 4 087 159 A (ULRICH REINHARD) 2 May 1978 (1978-05-02) abstract; figure 2 ---	1-45
A	EP 0 363 076 A (TRW INC) 11 April 1990 (1990-04-11) abstract; figure 1 ---	1-45
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Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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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.
A	ULRICH R ET AL: "RESOLUTION OF SELF-IMAGES IN PLANAR OPTICAL WAVEGUIDES" JOURNAL OF THE OPTICAL SOCIETY OF AMERICA, AMERICAN INSTITUTE OF PHYSICS. NEW YORK, US, vol. 68, no. 5, 1 May 1978 (1978-05-01), pages 583-592, XP000601798 page 591, column 1, last paragraph -column 2, line 2 -----	1,28

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