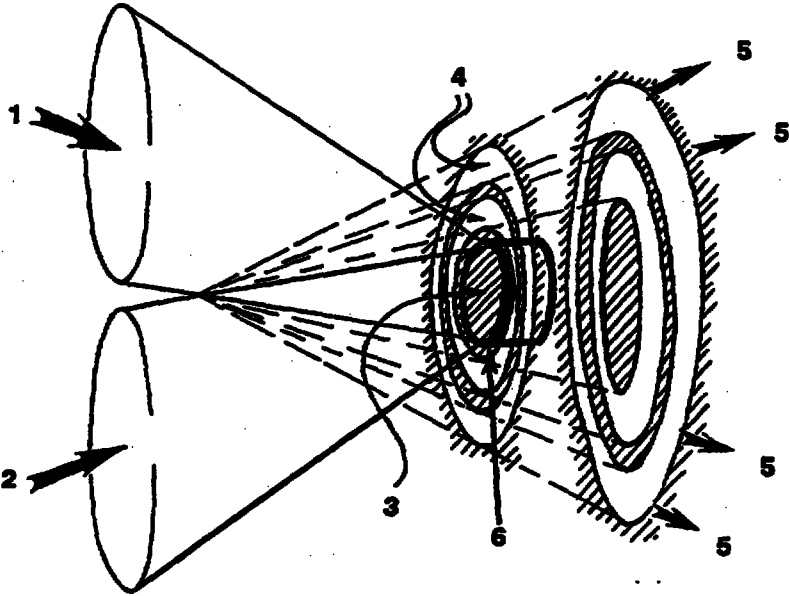




PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION  
International Bureau

## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (51) International Patent Classification <sup>6</sup> :<br>G06G 7/00, G06E 1/04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | A1 | (11) International Publication Number: WO 96/18964<br>(43) International Publication Date: 20 June 1996 (20.06.96)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| (21) International Application Number: PCT/US95/16455<br>(22) International Filing Date: 14 December 1995 (14.12.95)<br>(30) Priority Data:<br>08/357,460 16 December 1994 (16.12.94) US<br>08/424,177 19 April 1995 (19.04.95) US<br>(71)(72) Applicant and Inventor: HAIT, John, N. [US/US]; P.O. Box 4694, Missoula, MT 59806 (US).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |    | (81) Designated States: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TT, UA, UG, UZ, VN, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG), ARIPO patent (KE, LS, MW, SD, SZ, UG).<br><br>Published<br>With international search report.<br>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments. |
| (54) Title: ENERGY BEAM CONTROL, SIGNAL PROCESSING, AMPLIFICATION, AND COMPUTER LOGIC USING INTERFERENCE<br><br><br>(57) Abstract<br><p>A method of controlling a plurality of energy beams with at least one of the plurality of beams provides the foundation for photonic and energy beam computing using special interference and provides a basis for photonic transistor technology. At least one first beam set (1) produces special interference with at least one second beam set (2), at at least a first location (3). Energy is diverted from both beam sets to a second location (4) where energy does not appear from one, or any, of the beam sets in the absence of interference. By selecting the timing, levels, phases, frequencies, and interconnection of multiple controllers, a multitude of energy beam circuits can be made, including gated amplifiers, gated oscillators, phase demodulators, active filters, inverters, inverted filters, and limiters as well as logic functions such as AND, OR, XOR, NOT, NAND, and NOR.</p> |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |