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(71) Applicant (for all designated States except US): **PHO-
TONAMI INC.** [CA/CA]; 50 Mural Street, Units 10 and
11, Richmond Hill, Ontario L4B 1E4 (CA).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **SHAMS-ZADEH-
AMIRI, Ali, M.** [CA/CA]; 265 Cassandra Blvd., Apt. 324,
North York, Ontario M3A 1V4 (CA). **LI, Wei** [CA/CA];
163 University Avenue, Apt. 324, Waterloo, Ontario

N2L 3B8 (CA). **HASLETT, Tom** [CA/CA]; 9 Redwood
Avenue, Toronto, Ontario M4L 2S5 (CA). **SADEGHI,
Seyed Mostafa** [CA/CA]; 241 Redpath Avenue, Apt. 902,
Toronto, Ontario M4P 2K8 (CA).

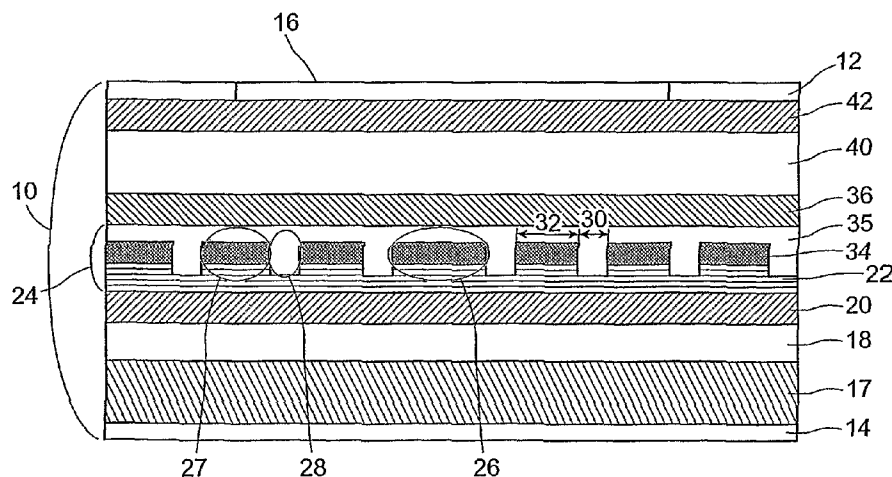
(74) Agent: **NENNIGER, James, T.**; Piasetzki & Nenniger,
120 Adelaide Street West, Suite 2308, Toronto, Ontario
M5H 1T1 (CA).

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(54) Title: METHOD AND APPARATUS FOR SUPPRESSION OF SPATIAL-HOLE BURNING IN SECOND OR HIGHER OR-
DER DFB LASERS



(57) Abstract: A surface emitting semiconductor laser is shown having a semiconductor laser structure (10) defining an intrinsic cavity having an active layer (22), opposed cladding layers contiguous to said active layer (22), a substrate (17) and electrodes (12, 14) by which current can be injected into said semiconductor laser structure (10) to cause said laser structure to emit an output signal in the form of at least a surface emission. The intrinsic cavity is configured to have a dominant mode on a longer wavelength side of a stop band. A structure such as a buried heterostructure for laterally confining an optical mode is included. A second order distributed diffraction grating (24) is associated with the intrinsic cavity, the diffraction grating (24) having a plurality of grating elements (27, 28) having periodically alternating optical properties when said current is injected into said laser structure. The grating is sized and shaped to generate counter-running guided modes within the intrinsic cavity wherein the grating (24) has a duty cycle of greater than 50% and less than 90%. Also provided is a means for shifting a phase (26) of said counter-running guided modes within the cavity to alter a mode profile to increase a near field intensity of said output signal.

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