



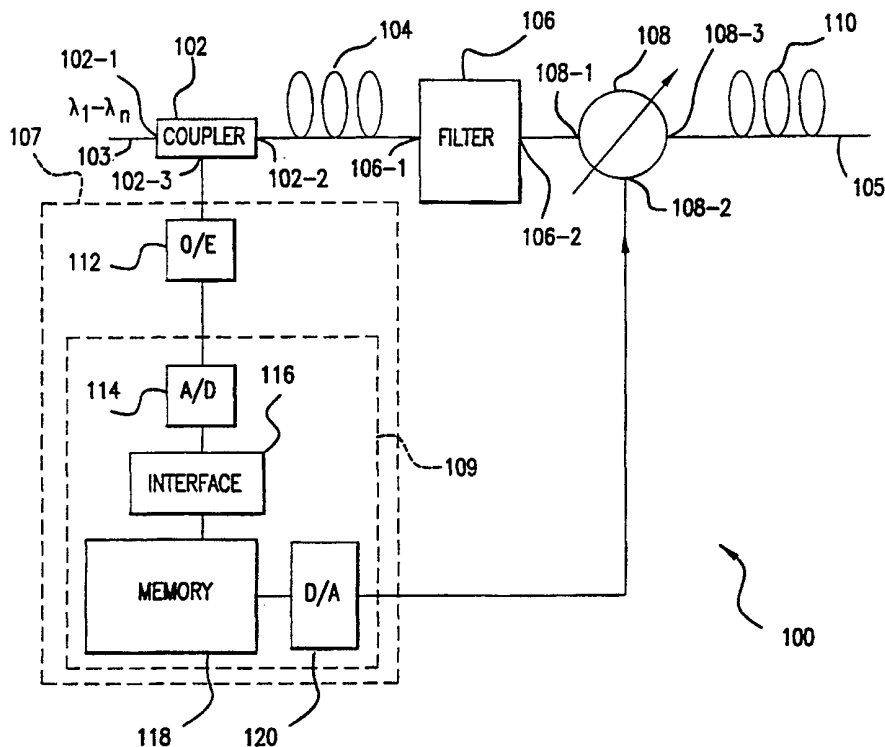
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(74) Agent: SOLTZ, David, L.; CIENA Corporation, Legal Dept., 1201 Winterson Road, Linthicum, MD 21090 (US).			

(54) Title: OPTICAL AMPLIFIER HAVING A VARIABLE ATTENUATOR CONTROLLED ACCORDING TO THE INPUT POWER

(57) Abstract

An optical amplifier is disclosed having substantially uniform spectral gain. The amplifier comprises a variable optical attenuator coupled between first and second segments of active optical fiber. The attenuation of the optical attenuator is adjusted in accordance with the optical power input to the amplifier to thereby obtain substantially flattened gain. Alternatively, the attenuator can be controlled based on the respective gains associated with the first and second segments of optical fiber. For example, the attenuator can be adjusted so that the sum of the two gains remains substantially constant, a condition that also yields flat spectral gain. Further, optical powers associated with first and second wavelengths of amplified stimulated emission (ASE) light output from the amplifier can be used to adjust the attenuation of the optical attenuator. In an additional example, received optical powers associated with each of the channels in a WDM system are monitored and the attenuators within each amplifier in the system are controlled so that the received powers are substantially equal.



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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 99/10884

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 H04B10/17

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 6 H04B H01S

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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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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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Date of the actual completion of the international search

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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.
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