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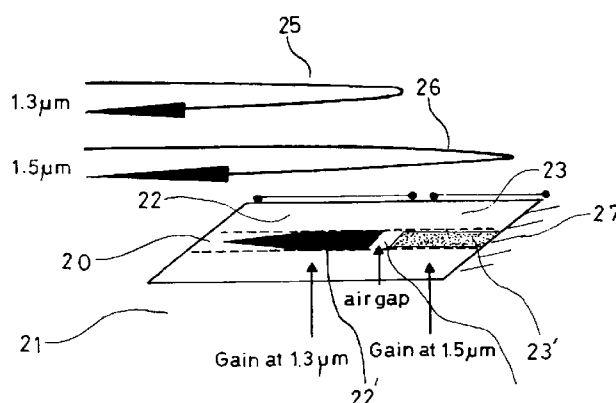
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(54) Title: REFLECTIVE SEMICONDUCTOR OPTICAL AMPLIFIER FOR OPTICAL NETWORKS

FIG_2



(57) Abstract: The present document relates to passive optical networks (PON). More particularly but not exclusively, it relates to the use of a reflective semiconductor optical amplifier (RSOA) for amplifying signals in a Gigabit PON (GPON) or WDM-PON. An apparatus (21) configured to amplify light at different wavelengths in an optical network is described. The apparatus (21) comprises a first active material (22) configured to amplify light at a first wavelength (25) and a second active material (23) configured to amplify light at a second wavelength (26). Furthermore, the apparatus (21) comprises a first reflector (24) which separates the first and second active materials (22, 23) and which is configured to reflect light at the first wavelength (25) and which is configured to be substantially transparent to light at the second wavelength (26). In addition, the apparatus comprises a second reflector (27) adjacent the second active material (23) opposite to the first reflector (24) which is configured to reflect light at the second wavelength (26).