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(12) **United States Patent**
Holmes

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(54) **OPTICAL PROCESSING**

(75) Inventor: **Melanie Holmes**, Woodbridge (GB)

(73) Assignee: **Thomas Swan & Co. Ltd.**, Consett (GB)

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Related U.S. Application Data

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G03H 1/08 (2006.01)

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(58) **Field of Classification Search** 359/3, 9, 359/11, 237-239, 279, 556, 558, 559, 566, 359/24, 29; 385/15-18, 22, 31, 43, 129, 385/133, 146, 147, 901; 356/326, 328; 362/26, 362/602; 369/103, 44.29, 100; 398/49, 79

See application file for complete search history.

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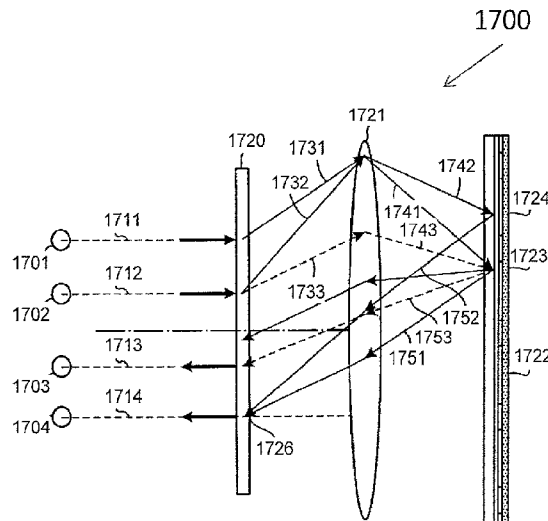
Primary Examiner — Loha Ben

(74) *Attorney, Agent, or Firm* — Hamilton, Brook, Smith & Reynolds, P.C.

(57) **ABSTRACT**

A modular routing node includes a single input port and a plurality of output ports. The modular routing node is arranged to produce a plurality of different deflections and uses small adjustments to compensate for wavelength differences and alignment tolerances in an optical system. An optical device is arranged to receive a multiplex of many optical signals at different wavelengths, to separate the optical signals into at least two groups, and to process at least one of the groups adaptively.

91 Claims, 36 Drawing Sheets



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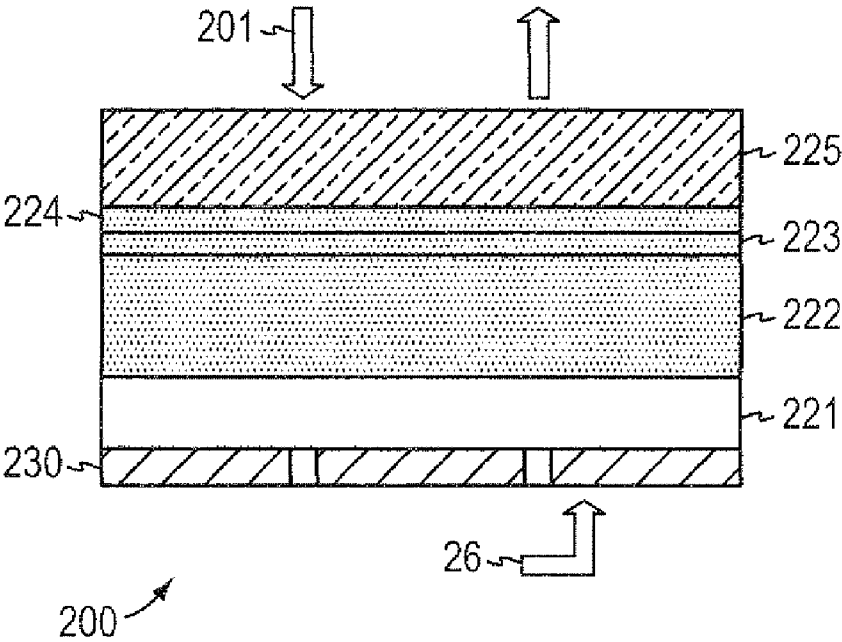


FIG. 1

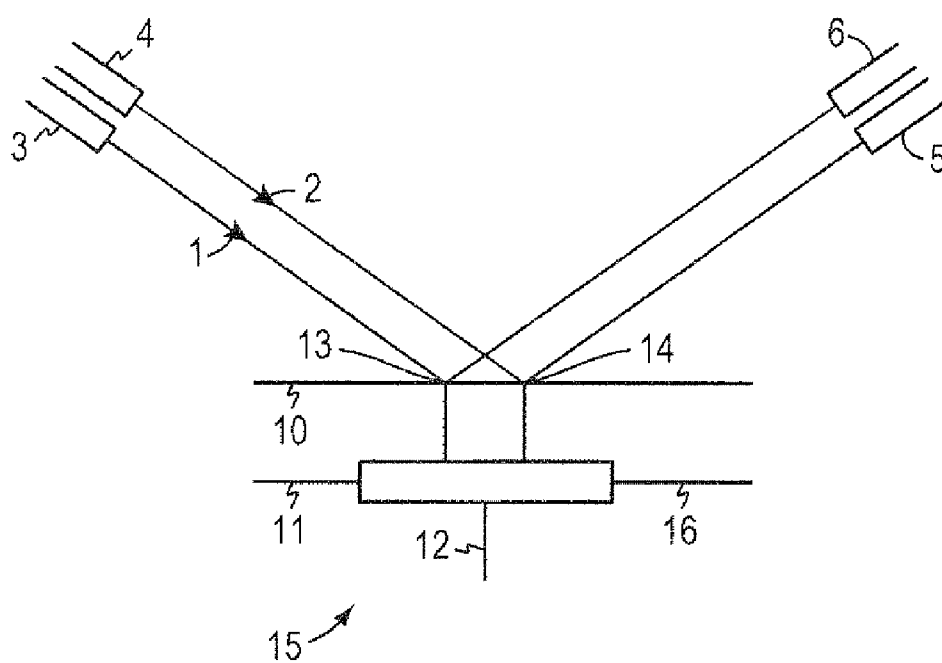


FIG. 2

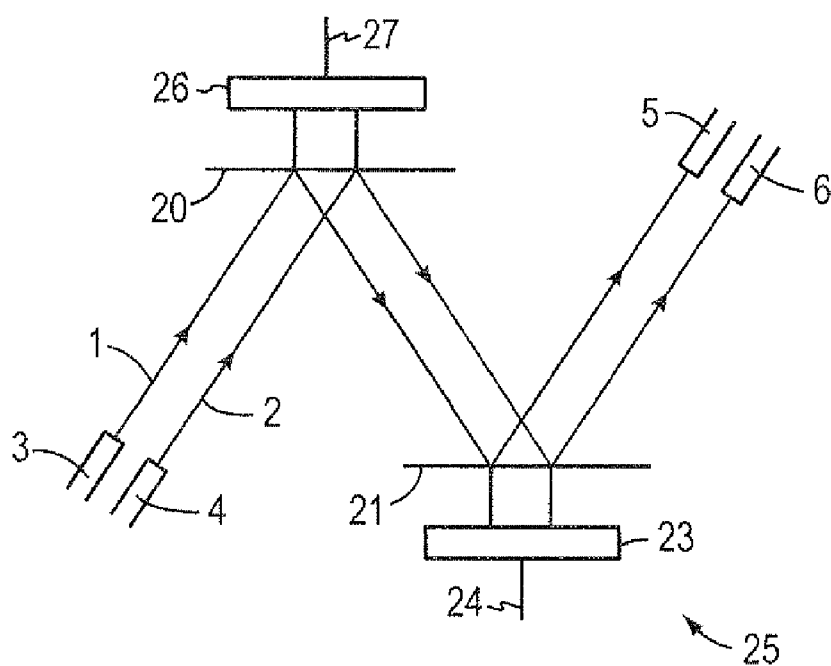


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