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Smith et al.

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(54) **VARIABLE TRANSMISSION MULTI-CHANNEL OPTICAL SWITCH**

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Related U.S. Application Data

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(51) **Int. Cl.**⁷ **G02B 6/26; G02B 6/42**

(52) **U.S. Cl.** **385/18; 385/19**

(58) **Field of Search** **385/18, 19, 15, 385/33; 398/156**

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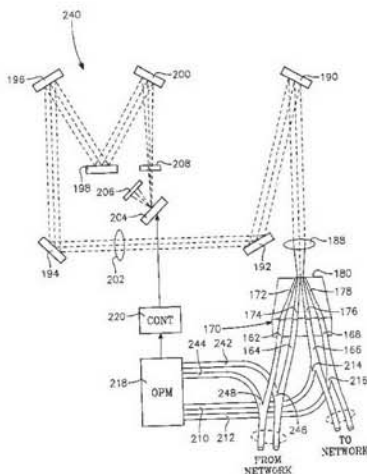
Primary Examiner—Chandrika Prasad

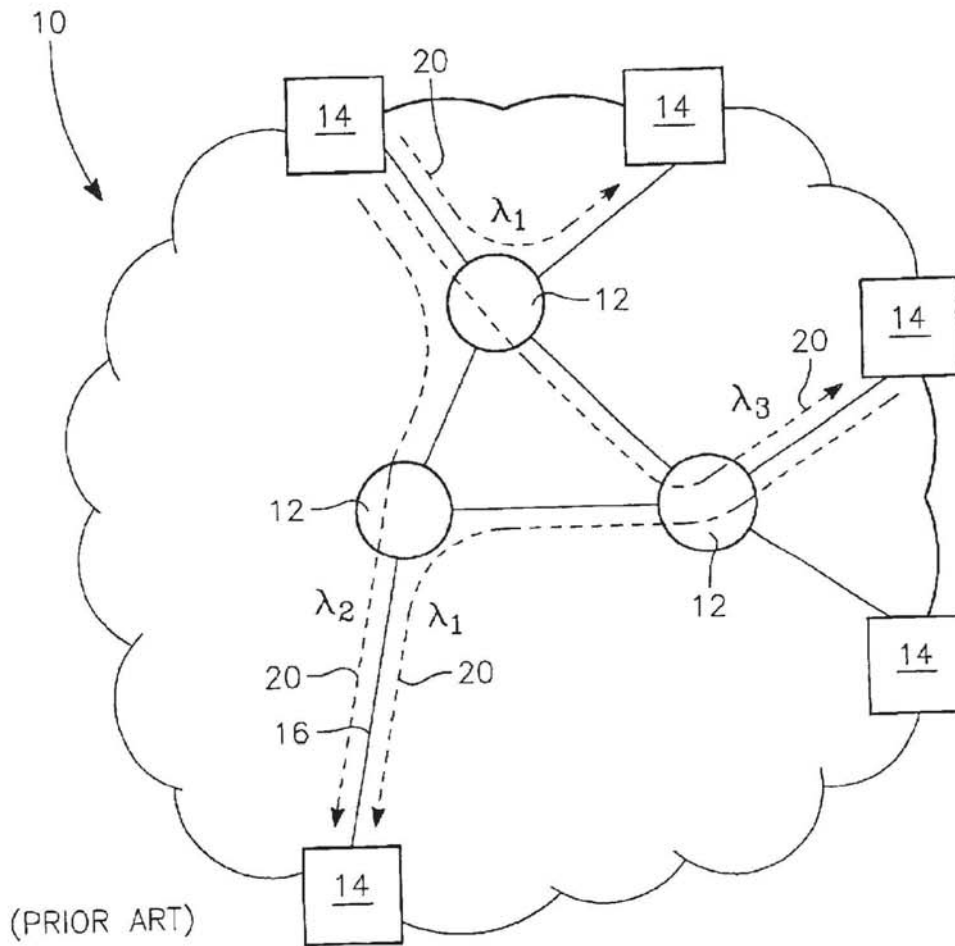
(74) *Attorney, Agent, or Firm*—Charles S. Guenzer

(57) **ABSTRACT**

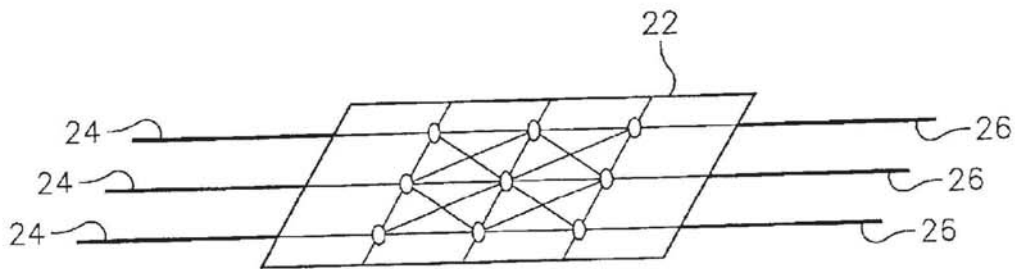
A multi-wavelength or white-light optical switch including an array of mirrors tiltable about two axes, both to control the switching and to provide variable power transmission through the switch, both for optimization and for power equalization between wavelength channels in a multi-wavelength signal. The output power of a channel is monitored, thereby allowing feedback adjustment of the transmitted power. The mirrors are preferably formed in a micro electromechanics system array to be tiltable in orthogonal directions and having electrostatically controlled tilting by two pairs of electrodes beneath the mirrors. Input power of the separate channels may also be monitored.

37 Claims, 11 Drawing Sheets





(PRIOR ART)
FIG. 1



(PRIOR ART)
FIG. 2

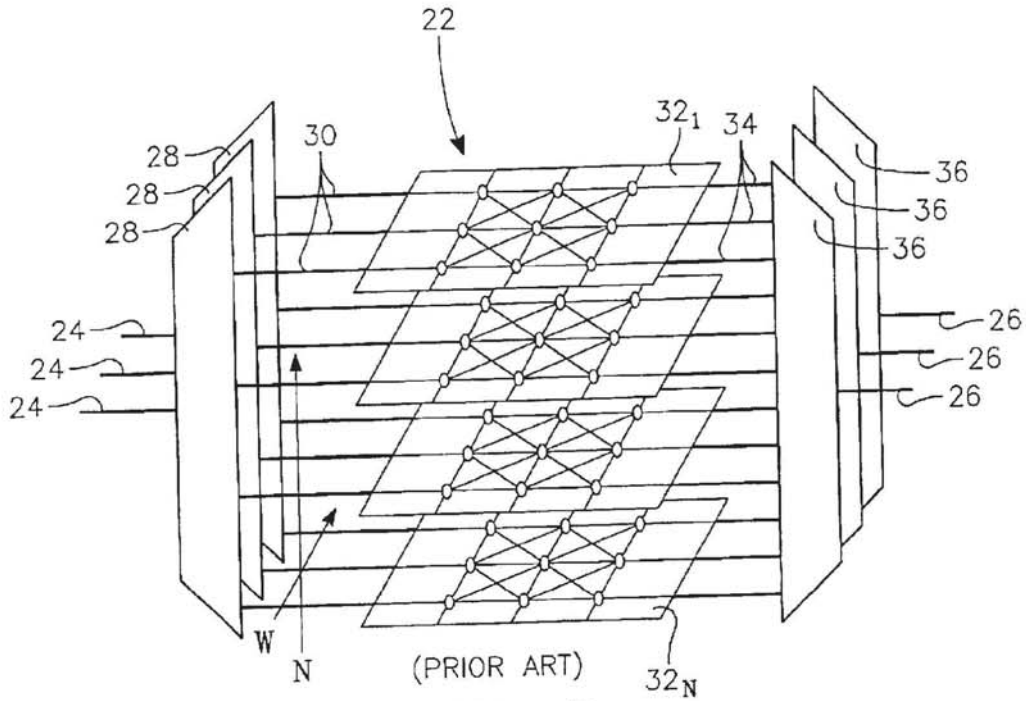
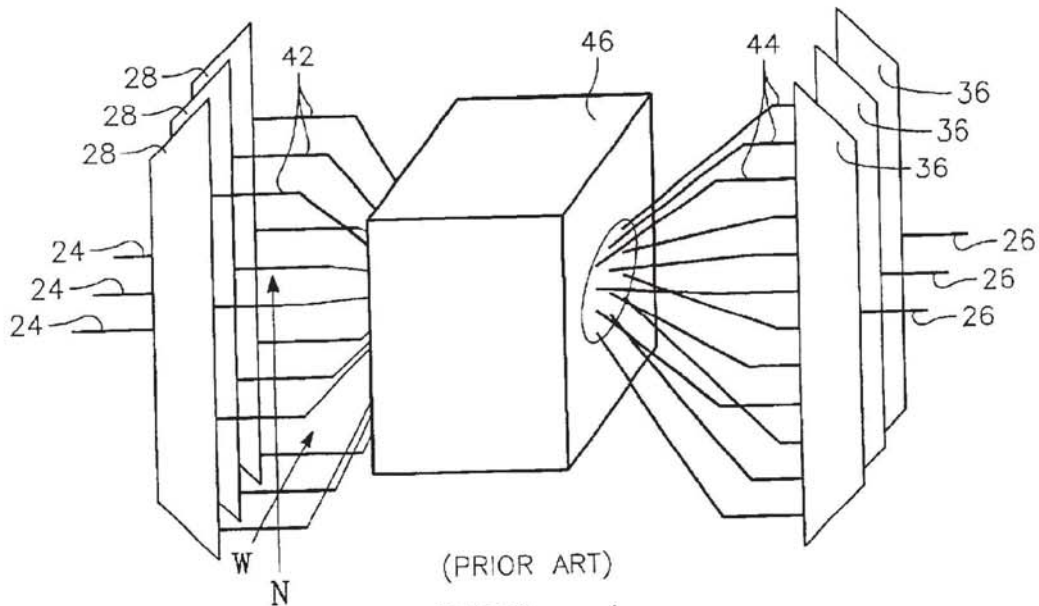


FIG. 3



(PRIOR ART)

FIG. 4

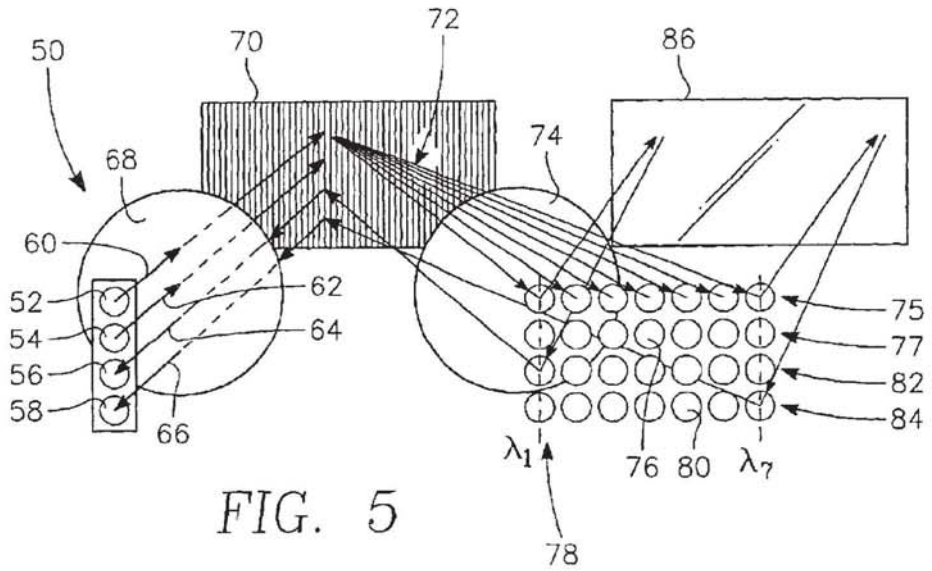


FIG. 5

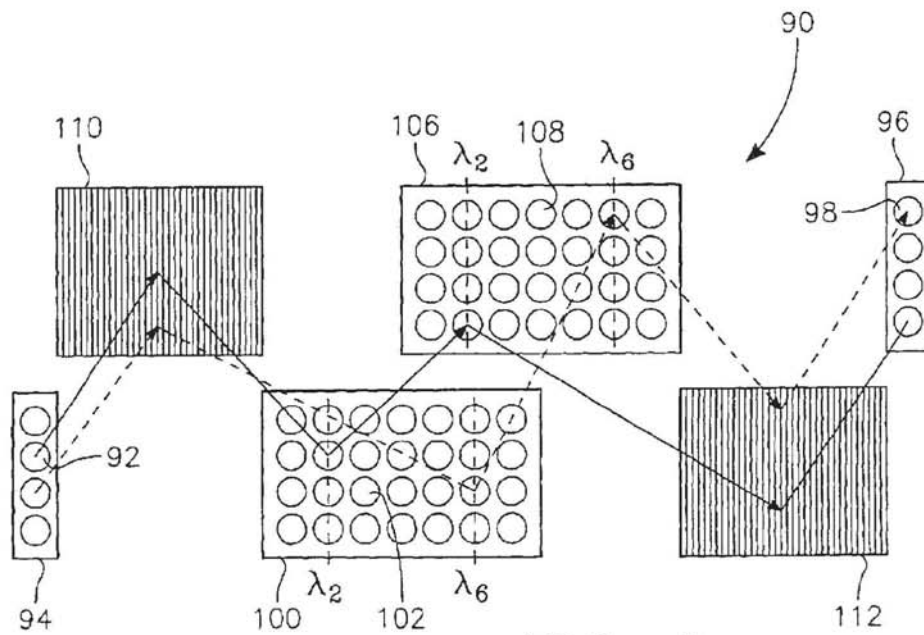


FIG. 6

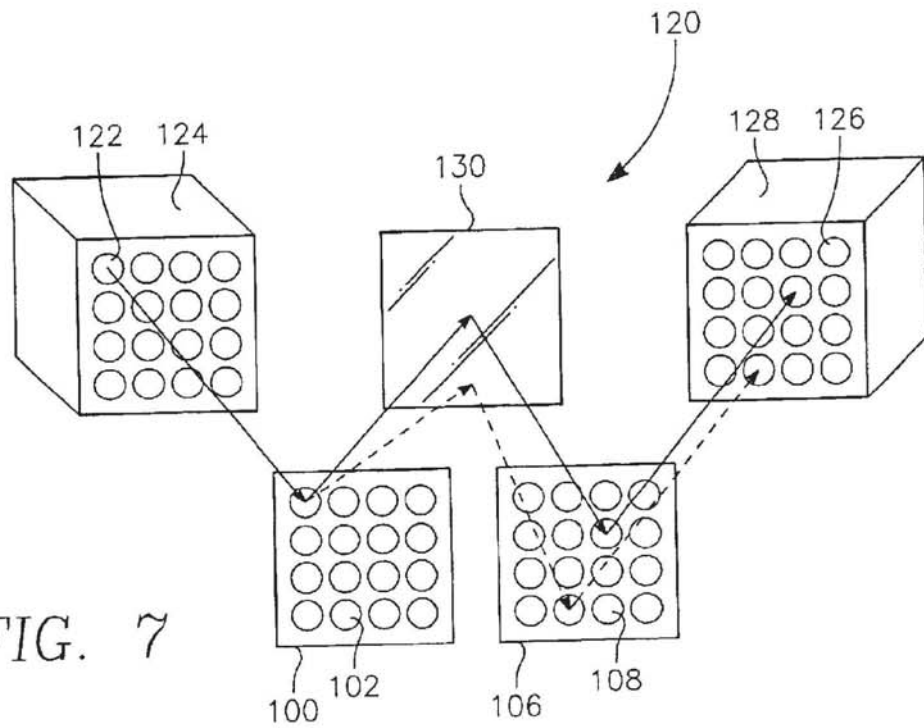


FIG. 7

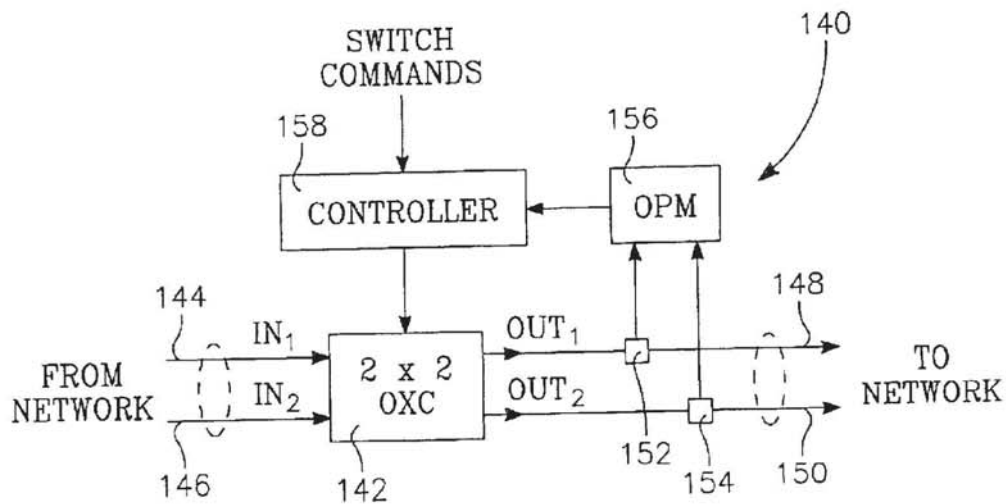


FIG. 8

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