



(12) **United States Patent**  
**Ranalli et al.**

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- (54) **WAVELENGTH SELECTIVE SWITCH**
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- (73) Assignee: **Corning Incorporated**, Corning, NY (US)
- (\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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- (21) Appl. No.: **09/450,142**
- (22) Filed: **Nov. 29, 1999**

**Related U.S. Application Data**

- (60) Provisional application No. 60/141,556, filed on Jun. 29, 1999.
- (51) **Int. Cl.<sup>7</sup>** ..... **G02B 5/30**
- (52) **U.S. Cl.** ..... **359/497**; 359/127; 359/494; 359/499; 385/11
- (58) **Field of Search** ..... 359/124, 127, 359/128, 130, 246, 494, 495, 497, 499; 385/11

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*Primary Examiner*—Darren Schuberg  
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(57) **ABSTRACT**

A reconfigurable bi-directional wavelength selective switch is disclosed. It has an optical system that is symmetric about a polarization modulator. The symmetric optical system consists of an input birefringent optical system and output birefringent optical system disposed around polarization modulator. The optical system delivers the wavelength channels that are to be switched as a superimposed wavelength channel incident the polarization modulator. As a result, crosstalk is reduced below -35 dB and greater optical performance is achieved.

**35 Claims, 9 Drawing Sheets**

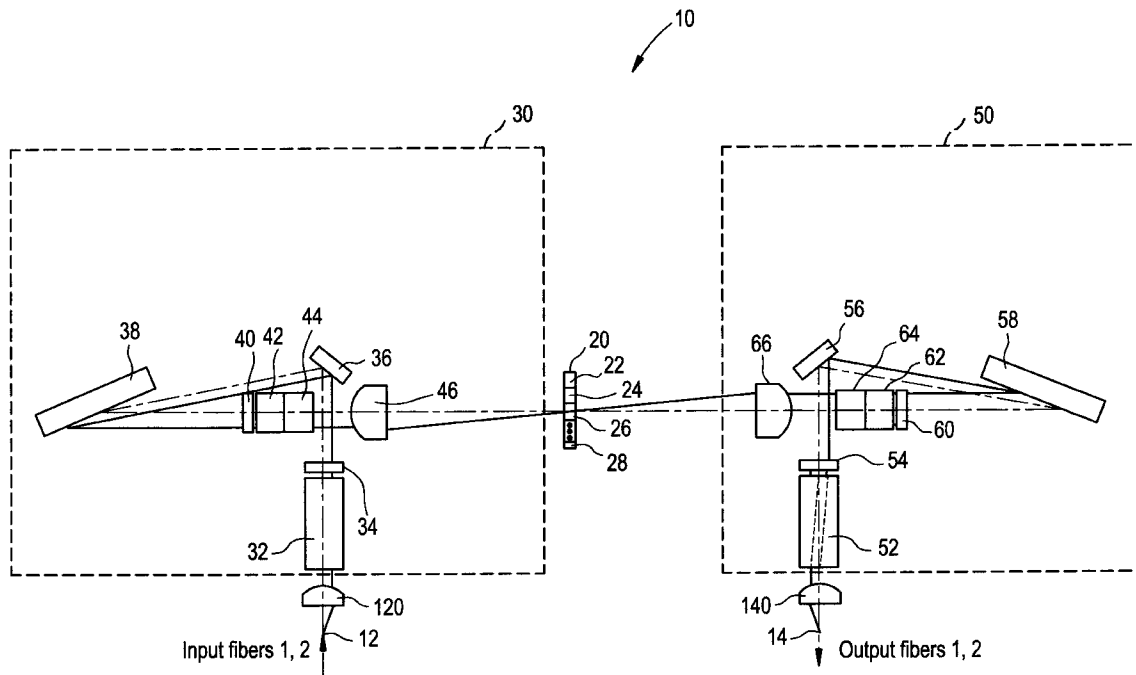


FIG. 1

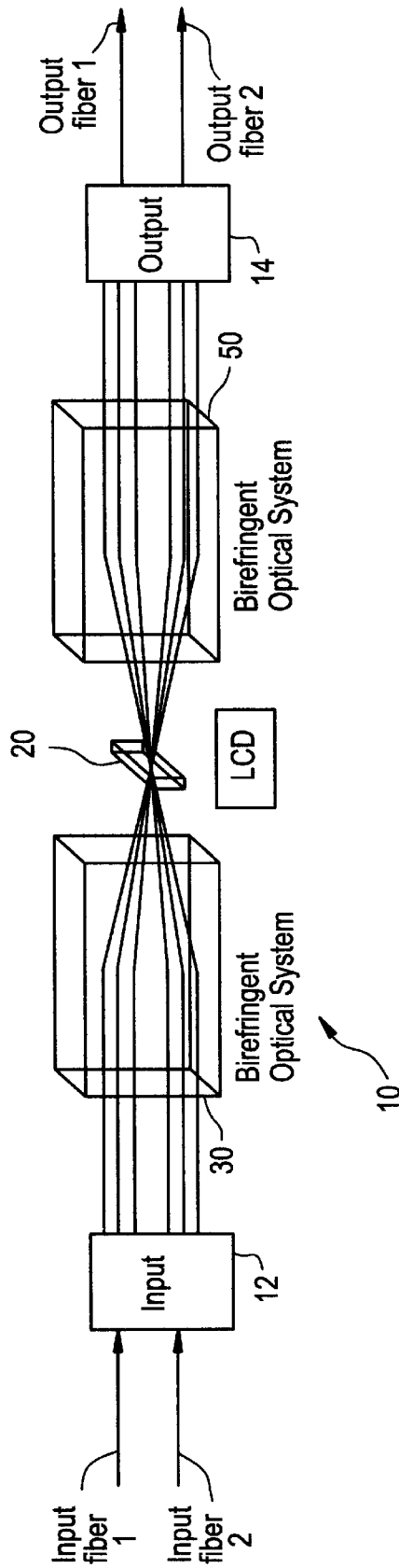


FIG. 2

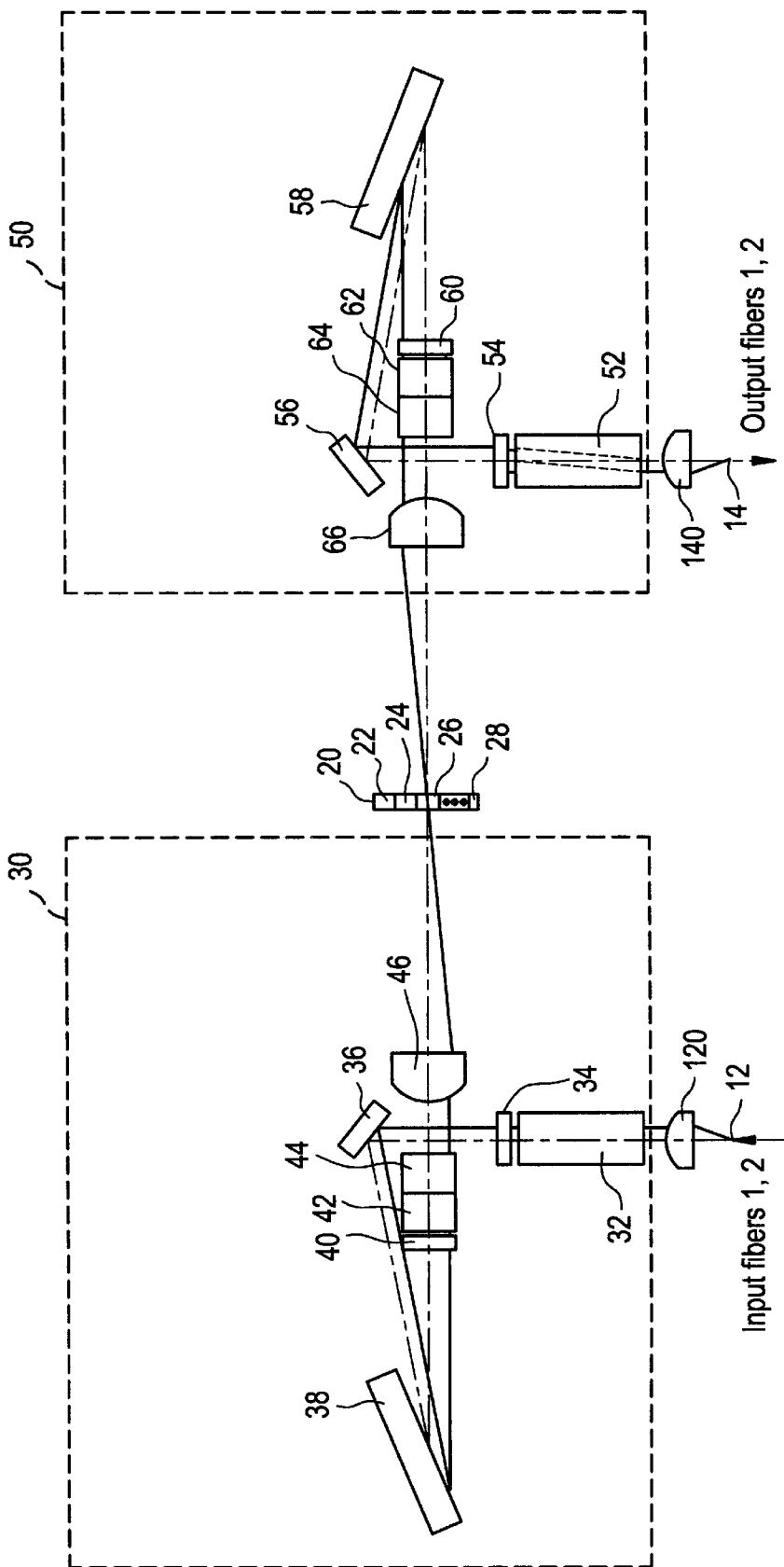


FIG. 3

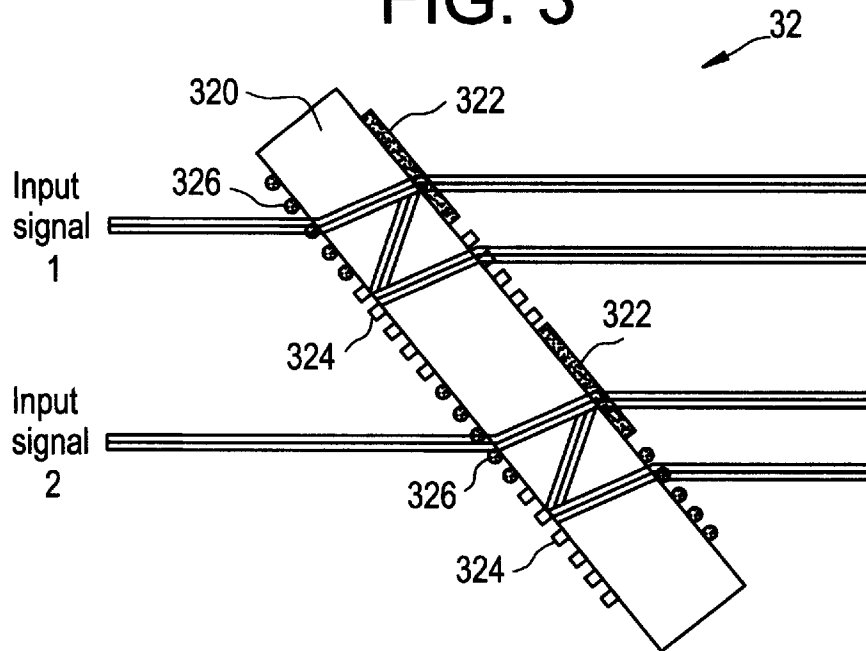


FIG. 4

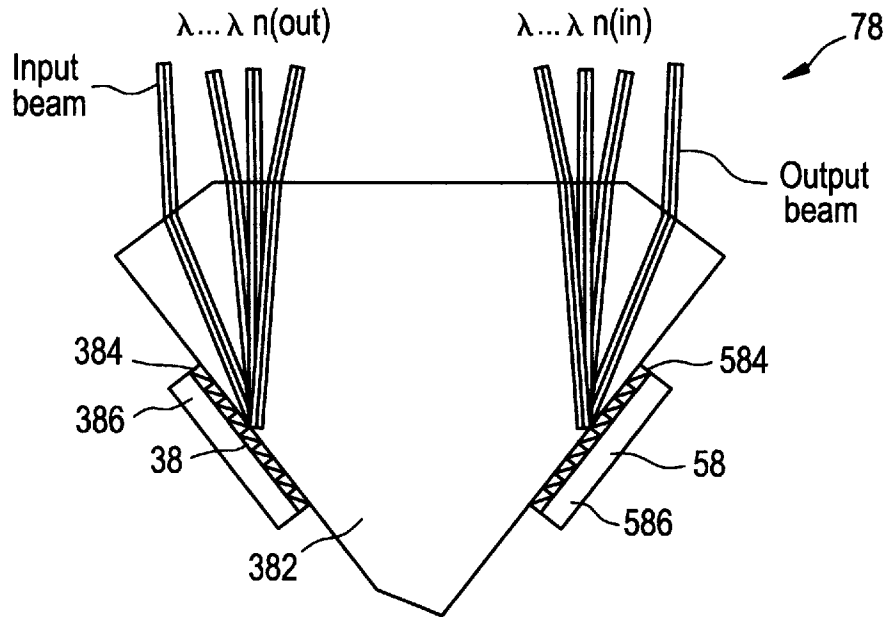
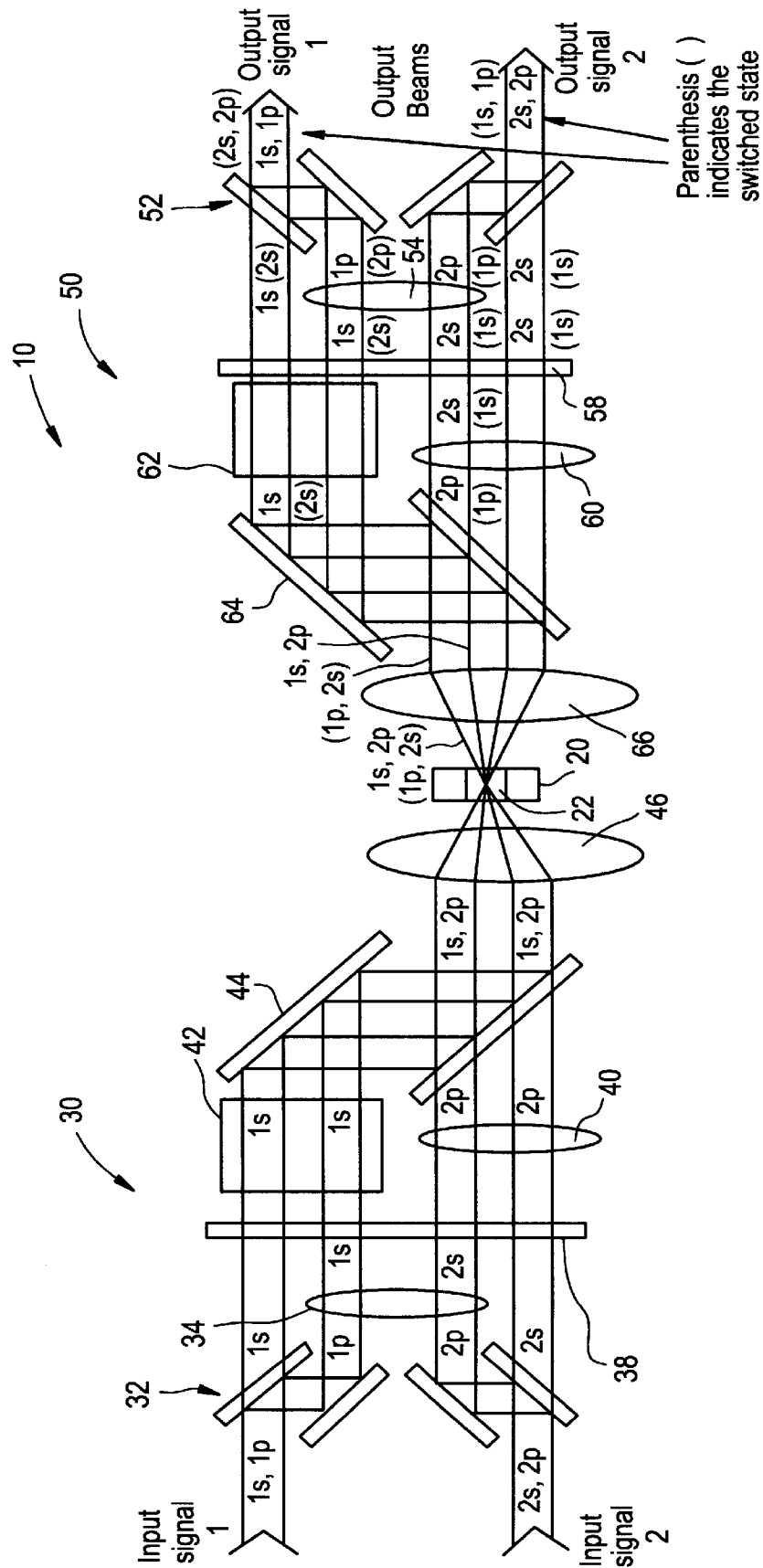


FIG. 5



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