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

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(54) **OPTICAL CROSSCONNECT SYSTEM  
COMPRISING RECONFIGURABLE LIGHT-  
REFLECTING DEVICES**

(75) Inventors: **Sungho Jin**, Millington; **Neal Henry  
Thorsten**, Lebanon, both of NJ (US)

(73) Assignee: **Agere Systems Inc.**, Miami Lakes, FL  
(US)

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U.S.C. 154(b) by 0 days.

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(51) Int. Cl.<sup>7</sup> ..... **G02B 6/26**

(52) U.S. Cl. .... **385/18; 385/17; 385/37**

(58) Field of Search ..... 385/16, 17, 18,  
385/20, 21, 22, 23, 37

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*Primary Examiner*—Frank G. Font

*Assistant Examiner*—Sang H. Nguyen

(74) *Attorney, Agent, or Firm*—Lowenstein Sandler PC

(57) **ABSTRACT**

In accordance with the invention, an optical switching device comprises a light-reflecting mirror containing a magnetic component coupled to a substrate. One or more programmable magnets are provided for moving the mirror by interacting with the magnetic component. The programmable magnets move the mirrors between or among selected positions and then maintain the mirror position without continuous power. Exemplary cross connects and 2x2 switches are described.

**9 Claims, 6 Drawing Sheets**

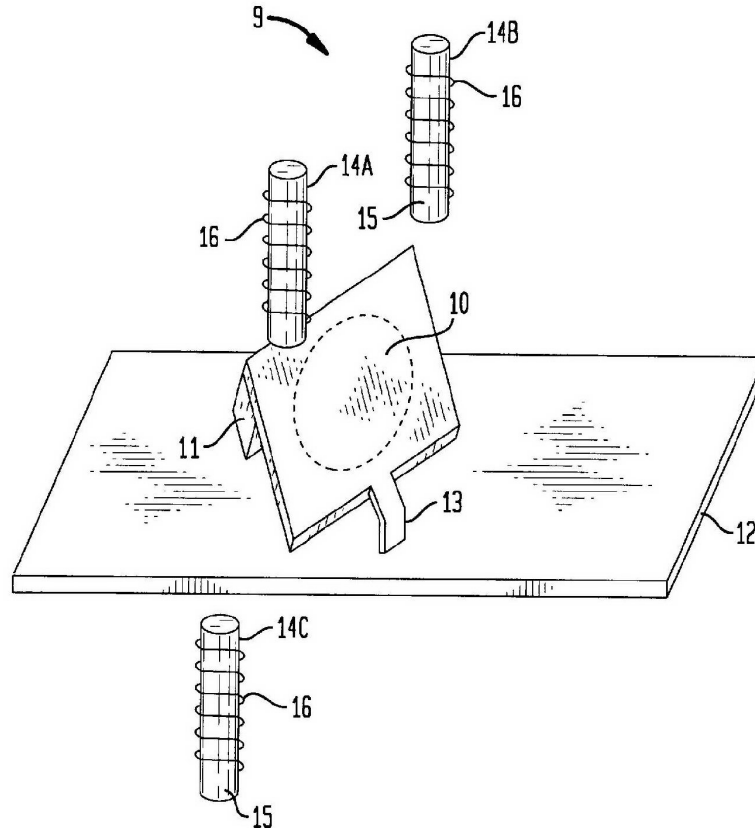


FIG. 1

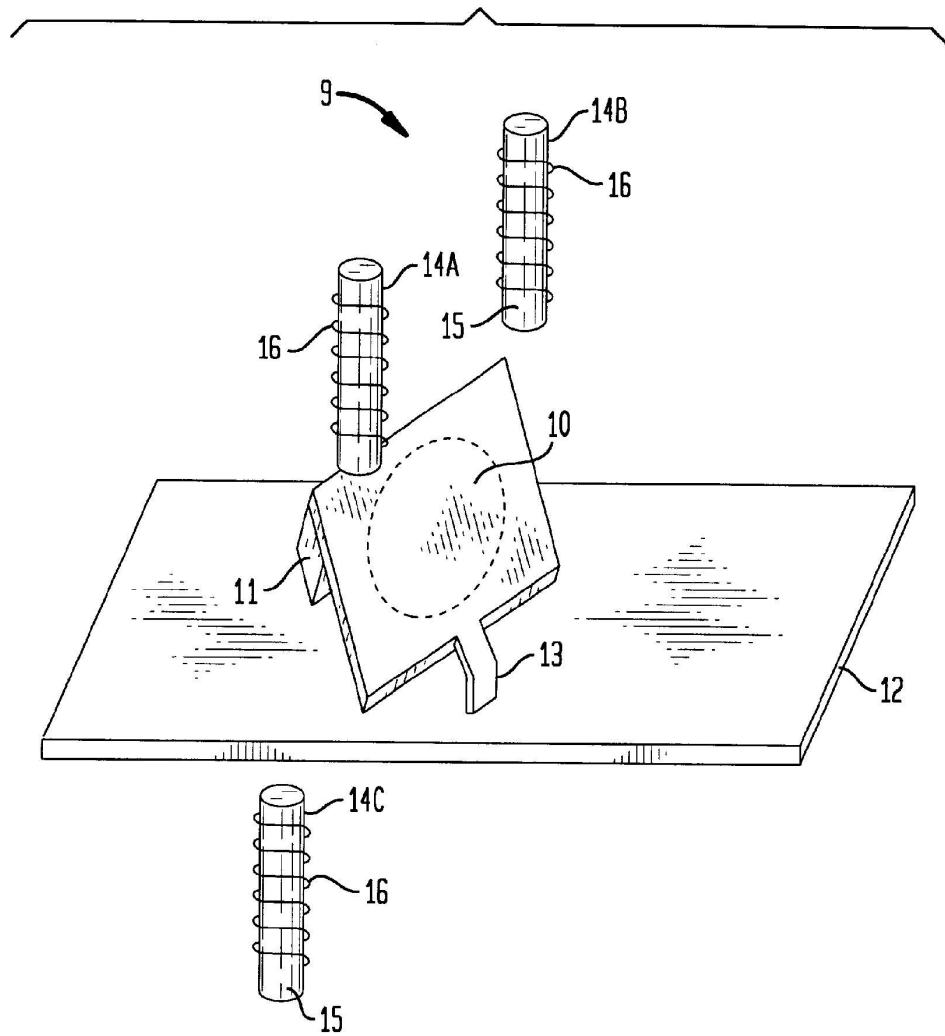


FIG. 2C

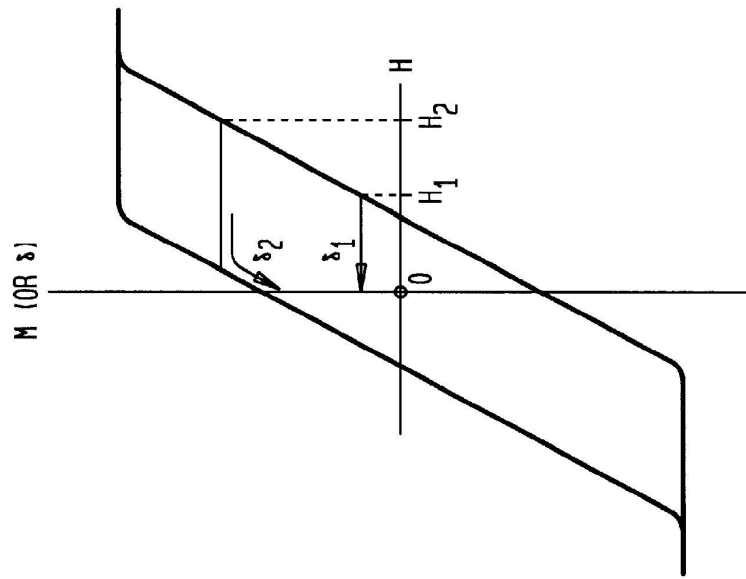


FIG. 2B

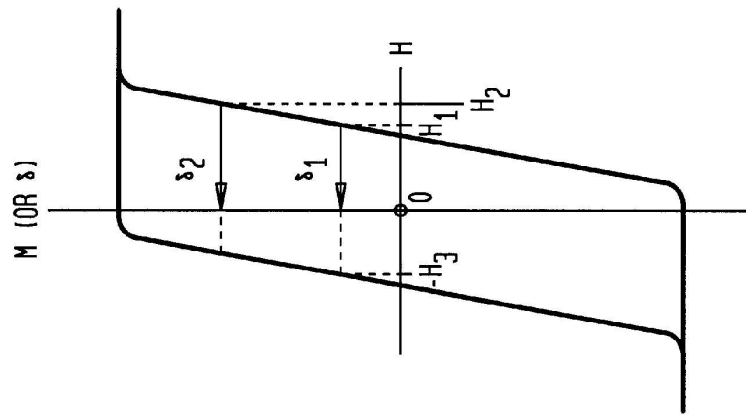


FIG. 2A

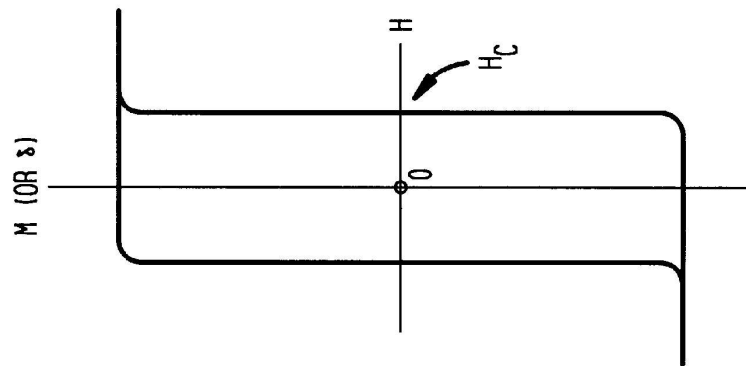


FIG. 3

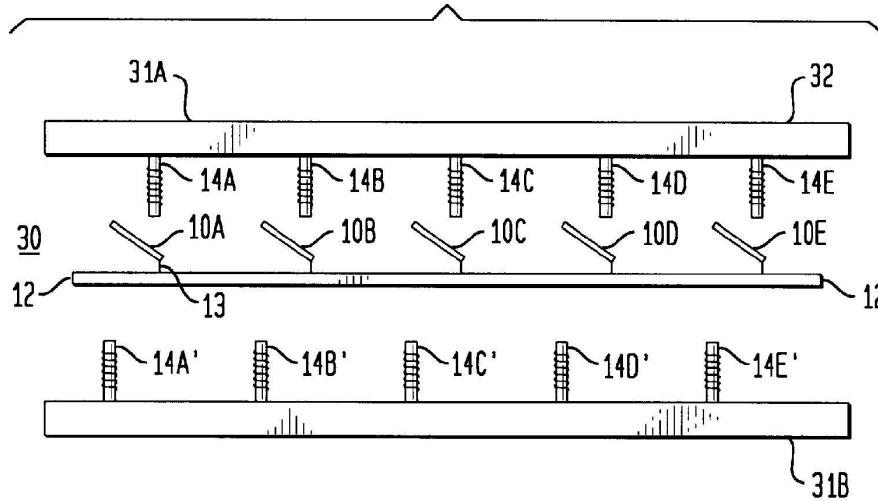


FIG. 4A

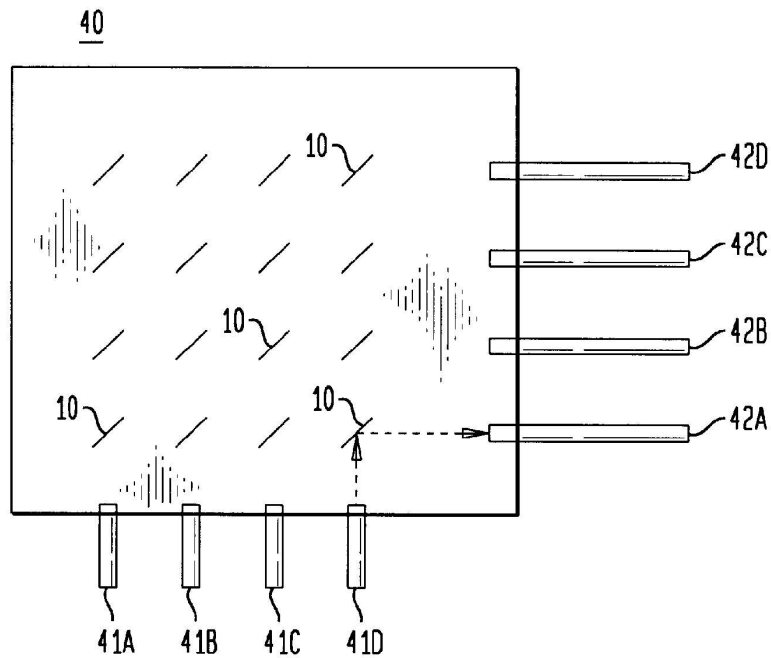


FIG. 4B

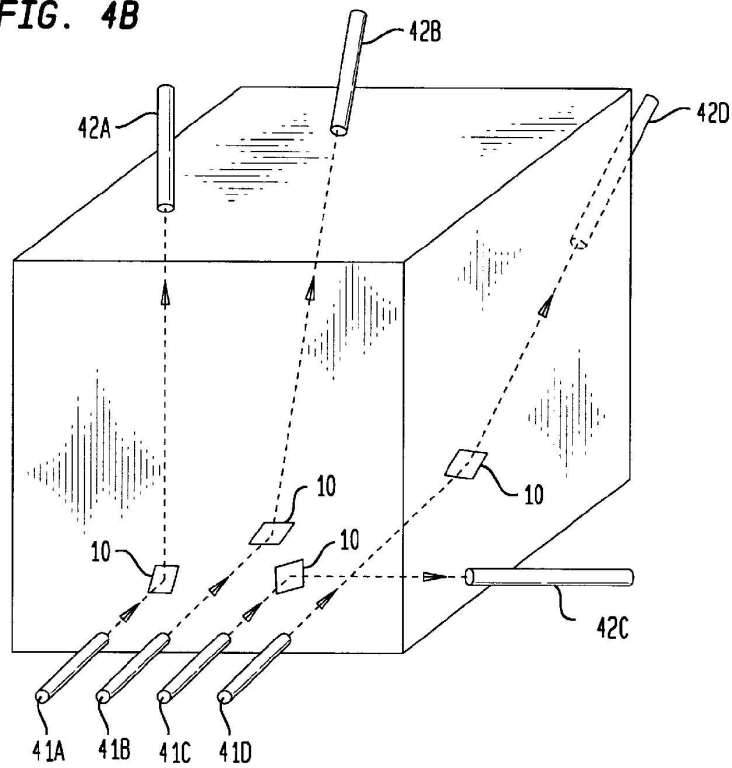
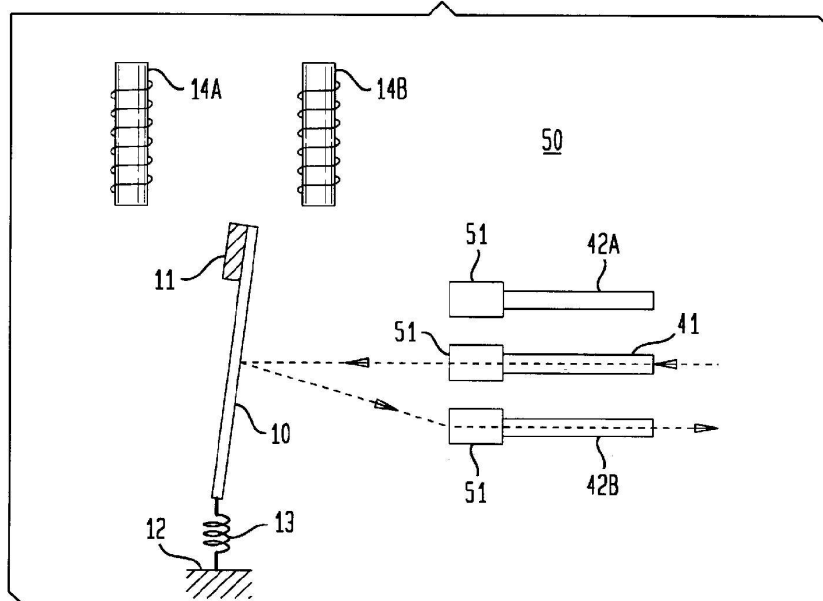


FIG. 5



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