

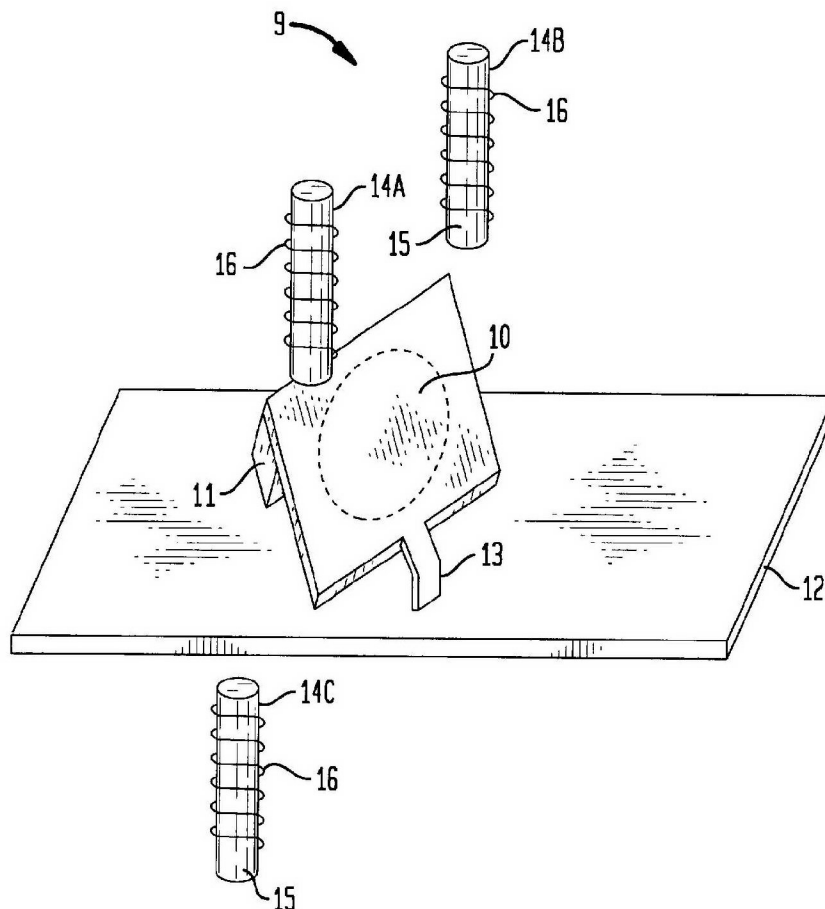
(54) **OPTICAL CROSSCONNECT SYSTEM  
COMPRISING RECONFIGURABLE LIGHT-  
REFLECTING DEVICES**(75) Inventors: **Sungho Jin**, Millington; **Neal Henry  
Thorsten**, Lebanon, both of NJ (US)(73) Assignee: **Agere Systems Inc.**, Miami Lakes, FL  
(US)(\*) Notice: Subject to any disclaimer, the term of this  
patent is extended or adjusted under 35  
U.S.C. 154(b) by 0 days.(21) Appl. No.: **09/197,800**(22) Filed: **Nov. 23, 1998**(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(56) **References Cited****U.S. PATENT DOCUMENTS**

5,042,889	*	8/1991	Benzoni	.....	385/16
5,581,643	*	12/1996	Wu	.....	385/18
5,974,207	*	10/1999	Aksyuk et al.	.....	385/24
5,999,546	*	12/1999	Espindola et al.	.....	385/37
5,999,671	*	12/1999	Jin et al.	.....	385/37

\* cited by examiner

*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**

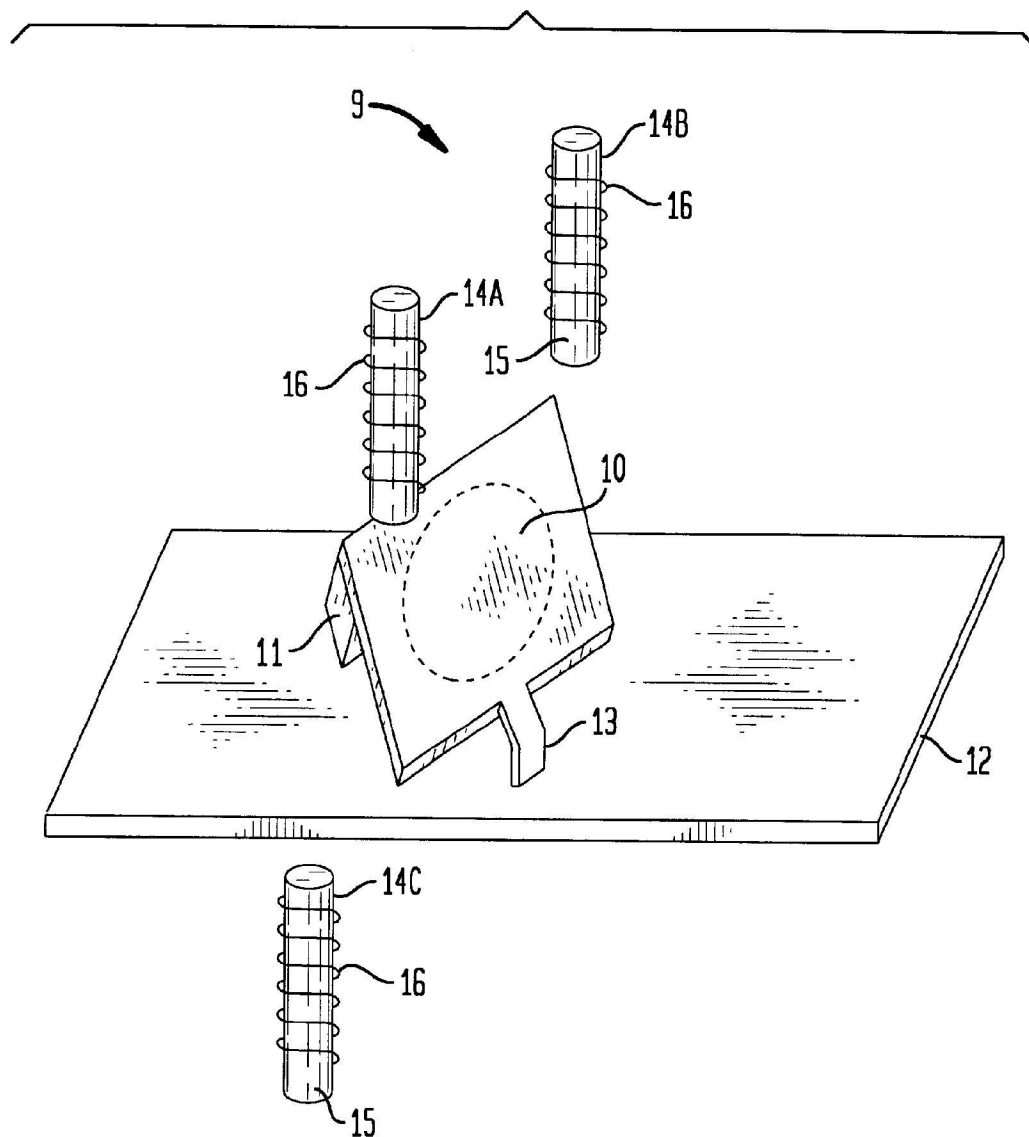
**FIG. 1**

FIG. 2C

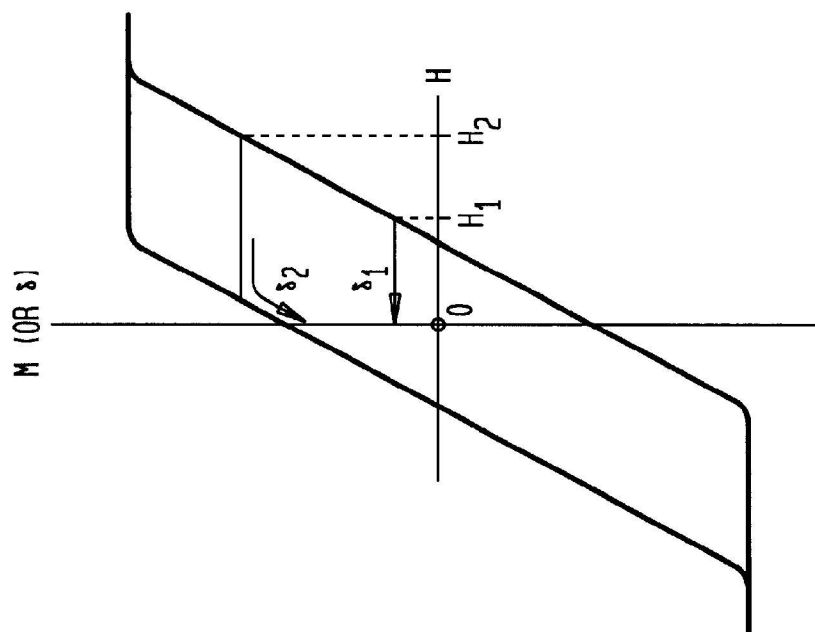


FIG. 2B

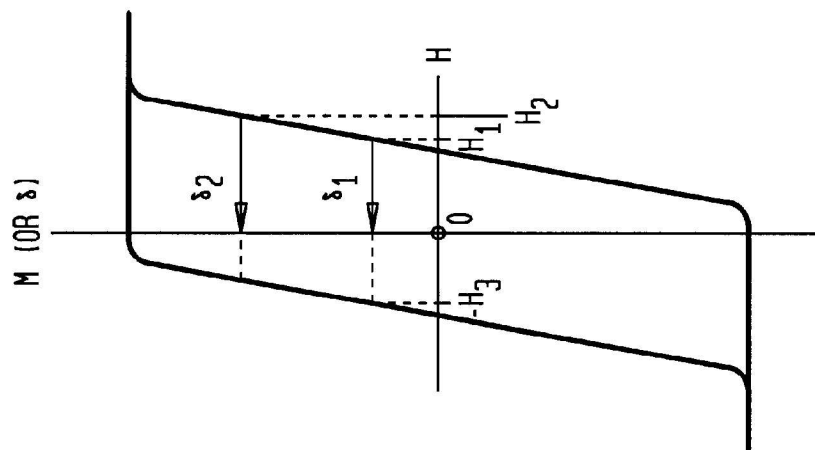
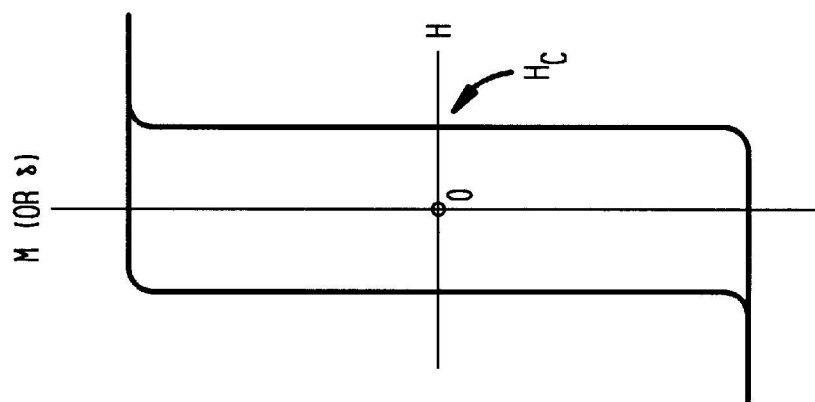


FIG. 2A



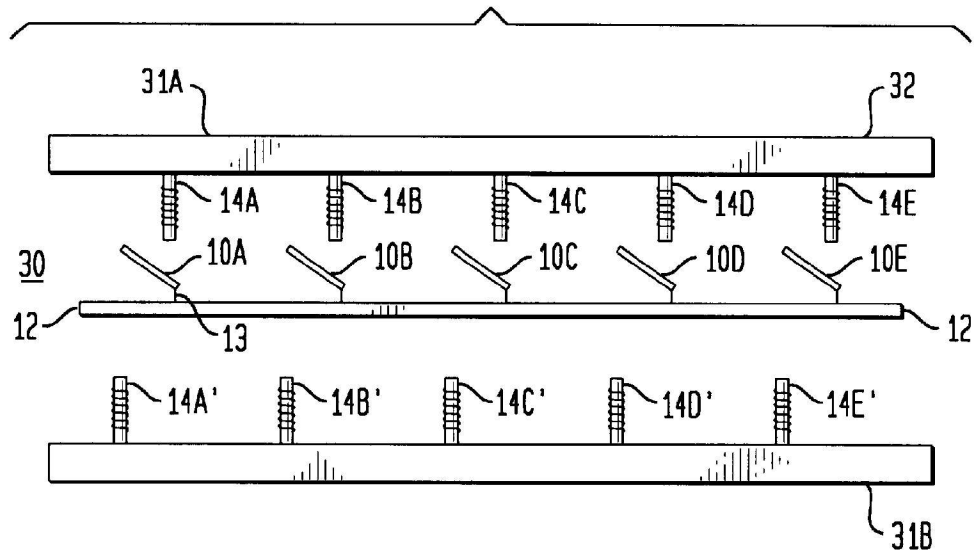
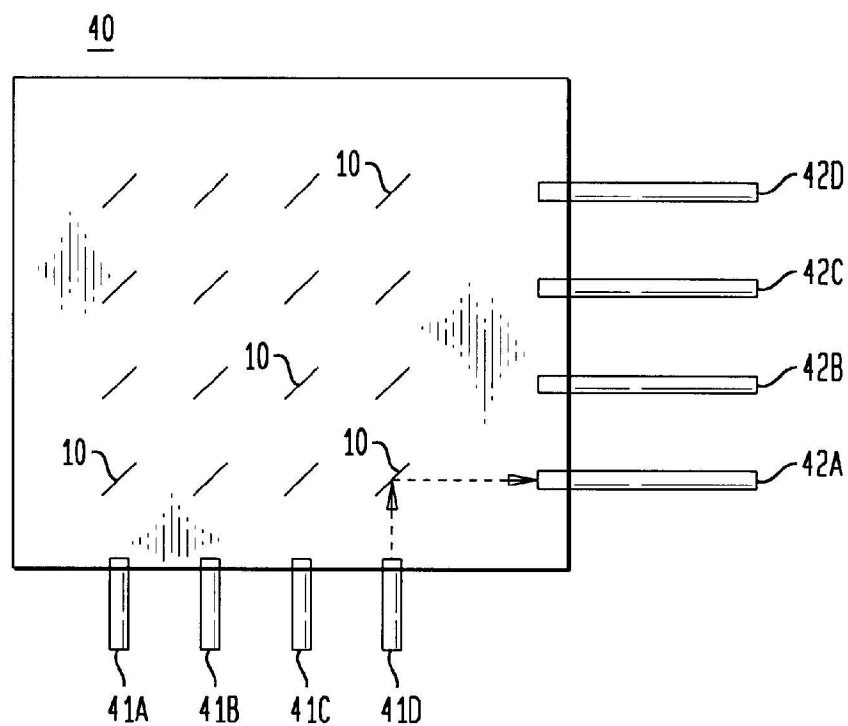
**FIG. 3****FIG. 4A**

FIG. 4B

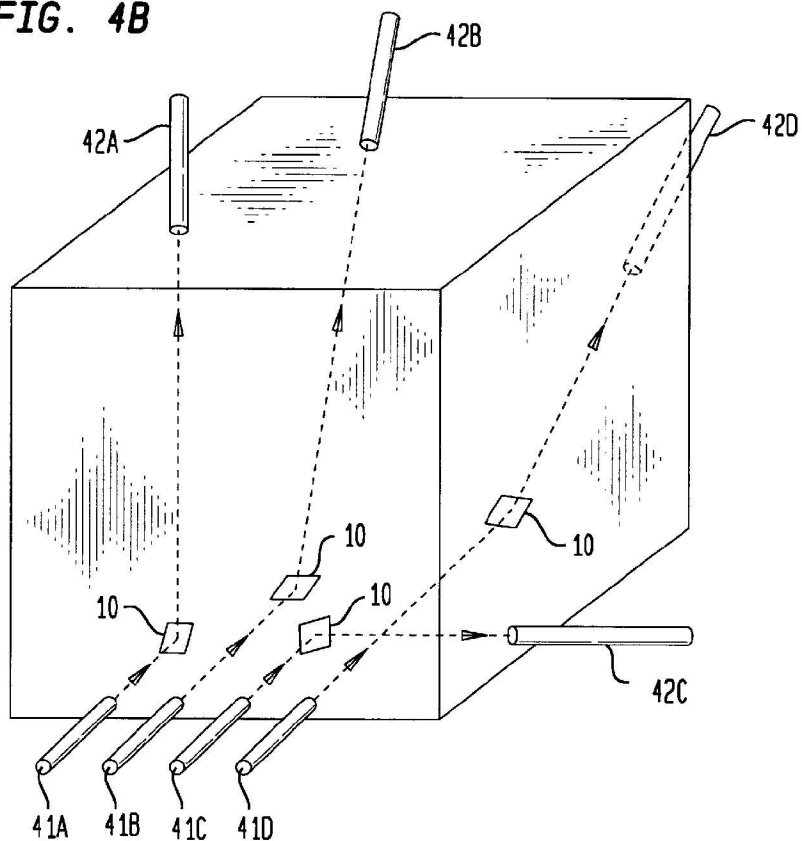
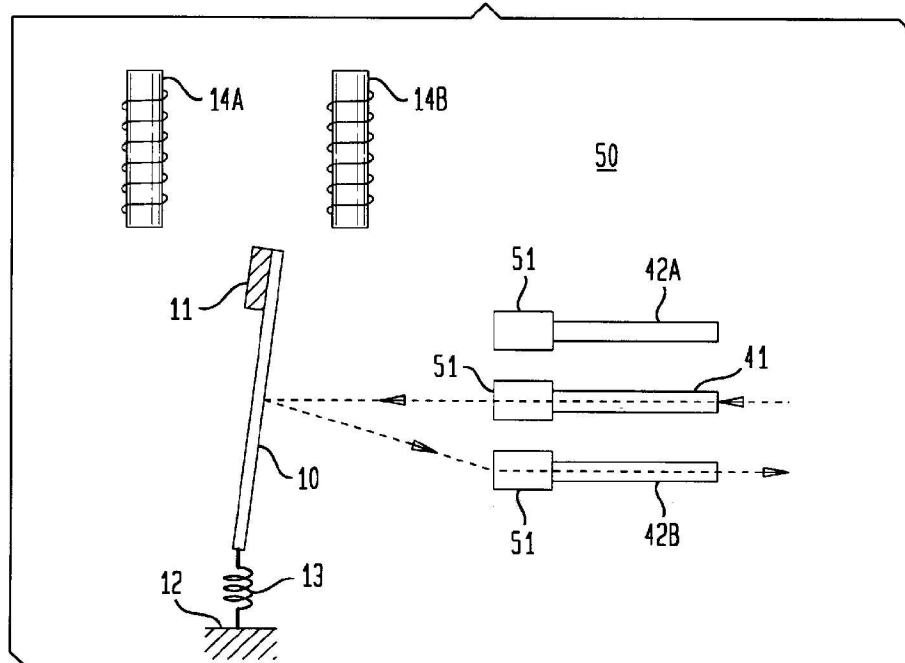


FIG. 5



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