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United States Patent [19] Lipsker

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[54] **RAPID PROTOTYPING**[75] Inventor: **Daniel Lipsker**, Atlit, Israel[73] Assignee: **Micromod R.P. LTD**, Granot, Israel[21] Appl. No.: **09/128,100**[22] Filed: **Aug. 3, 1998**[30] **Foreign Application Priority Data**

Aug. 3, 1997 [IL] Israel 121458

[51] **Int. Cl.**⁷ **B32B 31/16**[52] **U.S. Cl.** **156/73.1; 156/167; 156/510; 156/580.1**[58] **Field of Search** **156/73.1, 73.2, 156/250, 256, 510, 580.1, 580.2, 166, 167**[56] **References Cited****U.S. PATENT DOCUMENTS**

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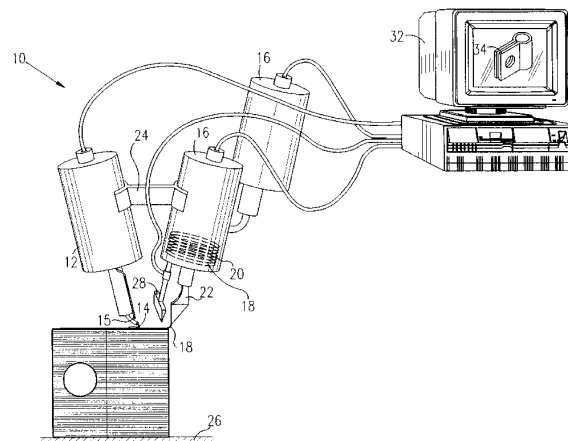
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Primary Examiner—James Sells*Attorney, Agent, or Firm*—Darby & Darby[57] **ABSTRACT**

Rapid prototype apparatus including an adhesive dispenser for dispensing an adhesive and an actuator which moves the adhesive dispenser in at least one of six degrees of freedom (preferably in at least four degrees of freedom, and most preferably in six degrees of freedom) in accordance with a geometry of an object. The adhesive dispenser then dispenses the adhesive in accordance with the geometry of the object, applying successive layers of adhesive one on top of the previous layer. The adhesive layers cure and bond to each other, thus forming a prototype of the object.

11 Claims, 4 Drawing Sheets

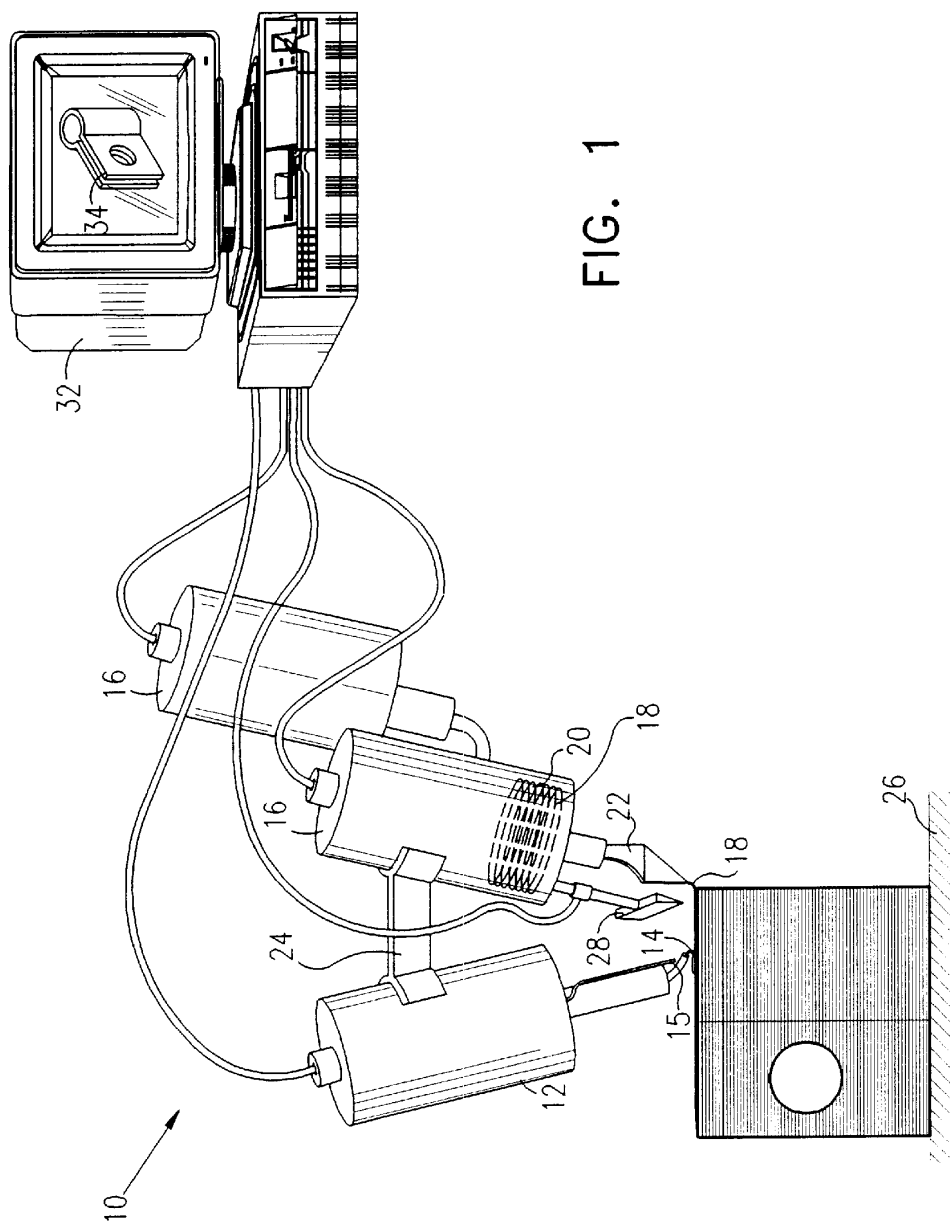


FIG. 2

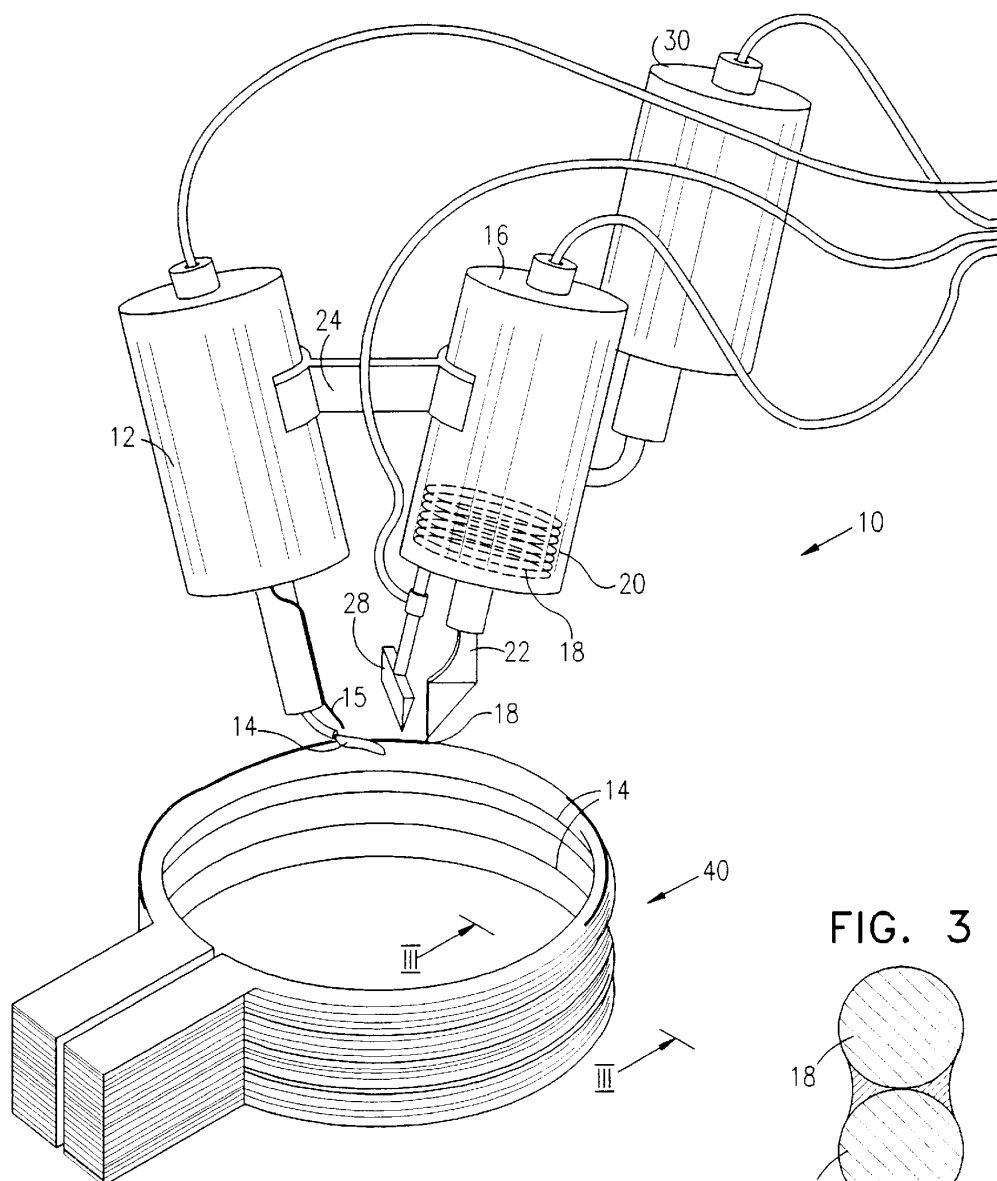
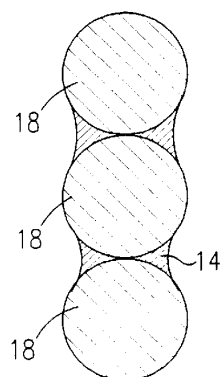


FIG. 3



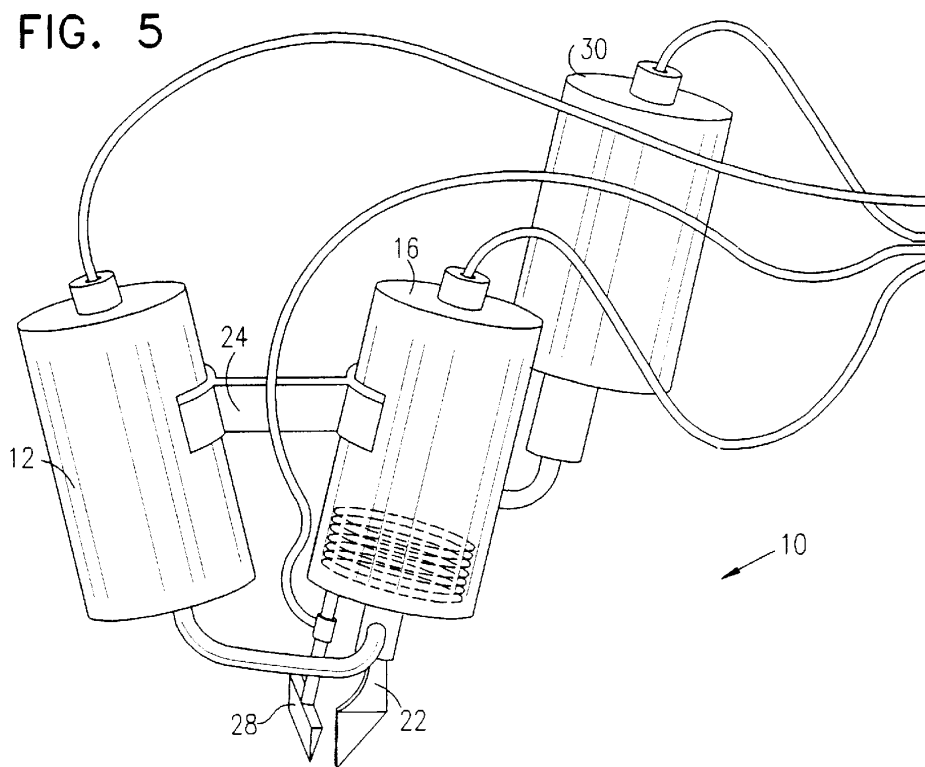
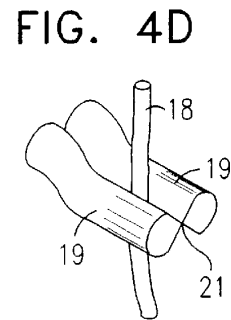
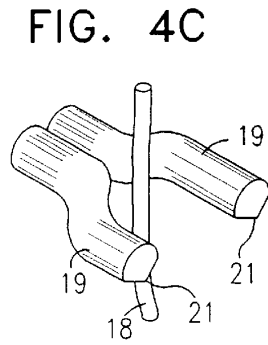
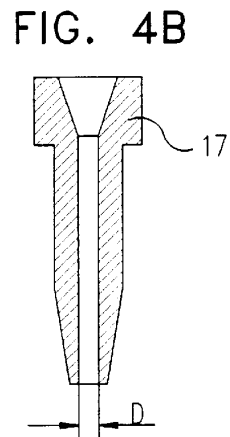
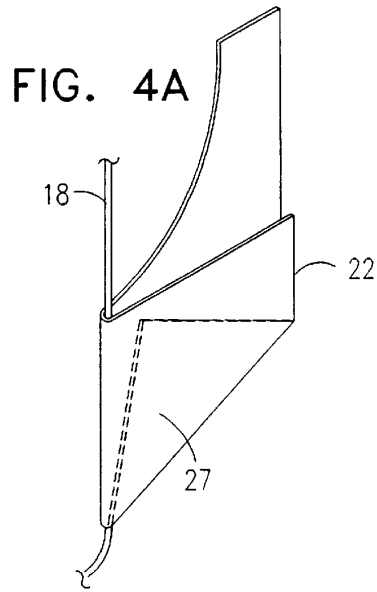
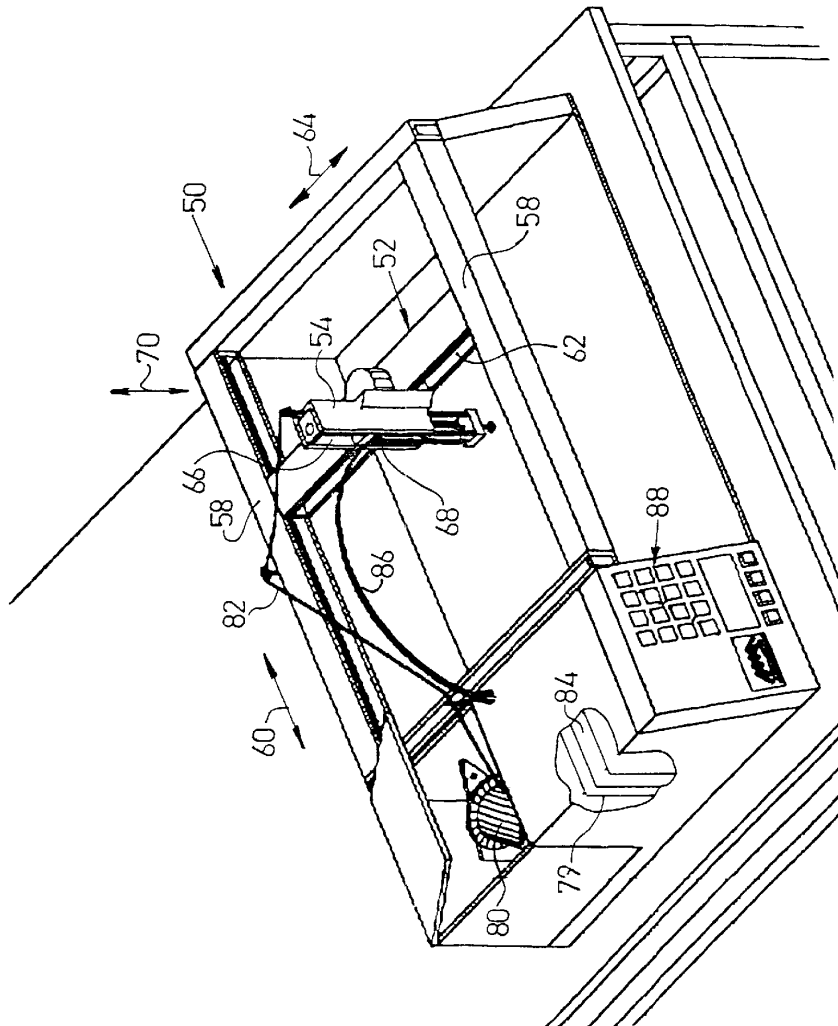


FIG. 6



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