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United States Patent [19]

Geidl et al.

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[54] MAT CUTTING SYSTEM

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[73] Assignee: **Arago Robotics Incorporated**, Anchorage, Ak.

[21] Appl. No.: **944,452**

[22] Filed: **Sep. 14, 1992**

[51] **Int. Cl.**[6] **B26D 3/00**; B26F 1/38

[52] **U.S. Cl.** **83/56**; 83/76.8; 83/455; 83/581; 83/940

[58] **Field of Search** 83/52, 56, 76.1, 76.6, 83/76.7, 76.8, 76.9, 455, 465, 581, 936–940

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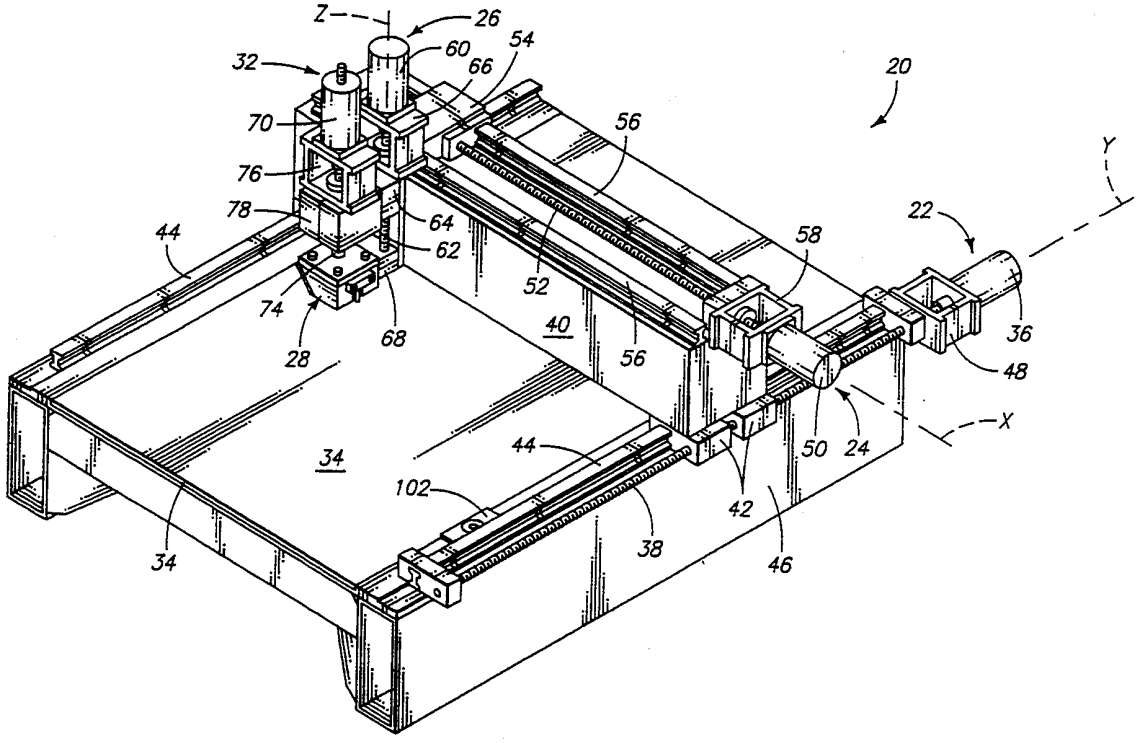
Primary Examiner—Eugenia Jones
Attorney, Agent, or Firm—Wells, St. John, Roberts, Gregory & Matkin

[57] **ABSTRACT**

A system for cutting windows or openings in mats used in framing works of art. The system involves the use of a variably positionable head to which a cutting blade is attached for cutting a beveled edge in the mat. A longitudinal drive means, transverse drive means, and orthogonal drive form a combined positioning device capable of moving the head in any direction. A rotational drive means may also form part of the combined positioning device for rotating and adjusting the position of the blade. A linear variable displacement transducer is coupled to the head and operatively coupled to the orthogonal drive to maintain the head a constant distance away from the mat so the blade cuts a continuously smooth beveled edge in the mat.

37 Claims, 9 Drawing Sheets



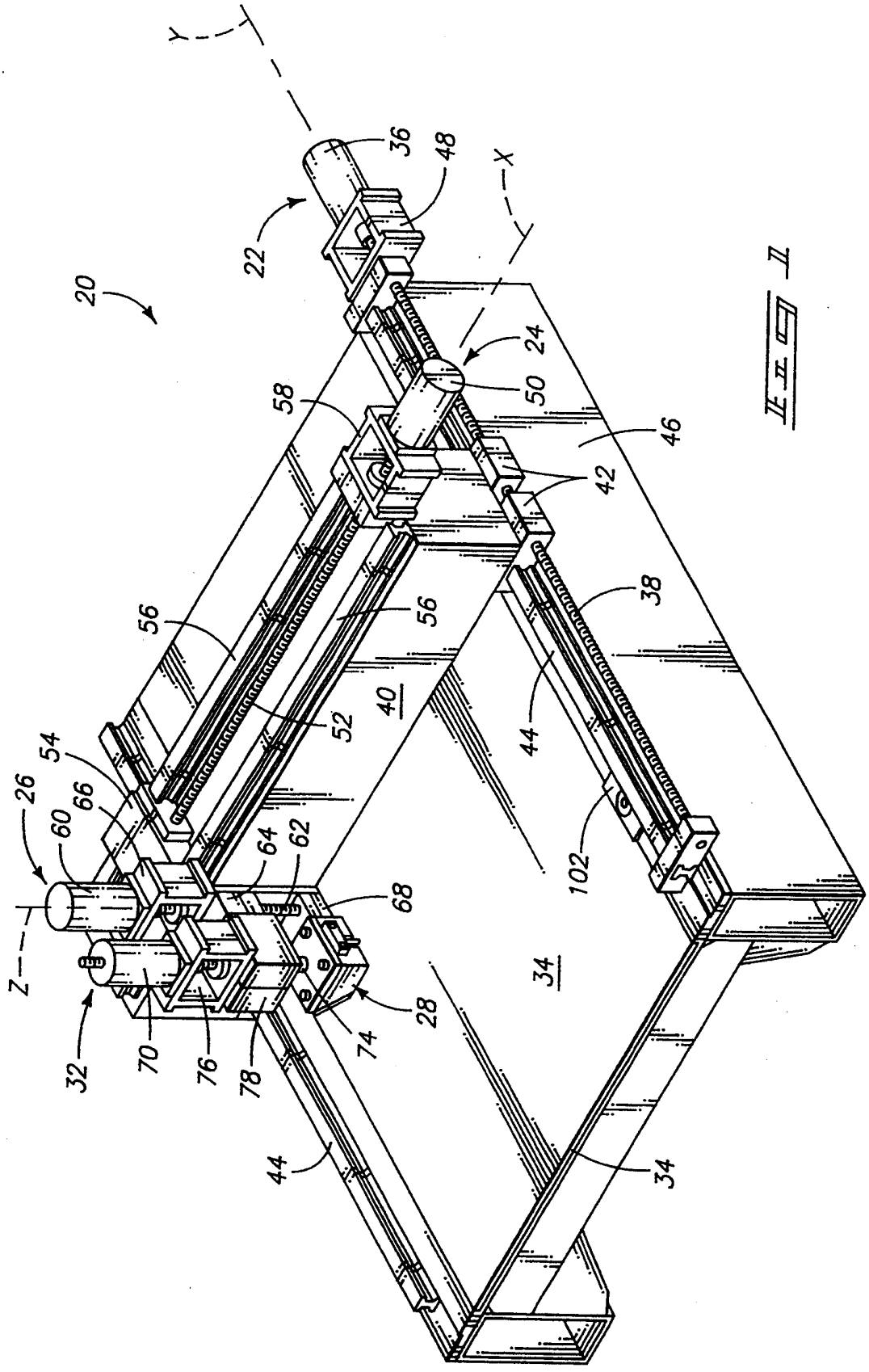

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FIG. 1

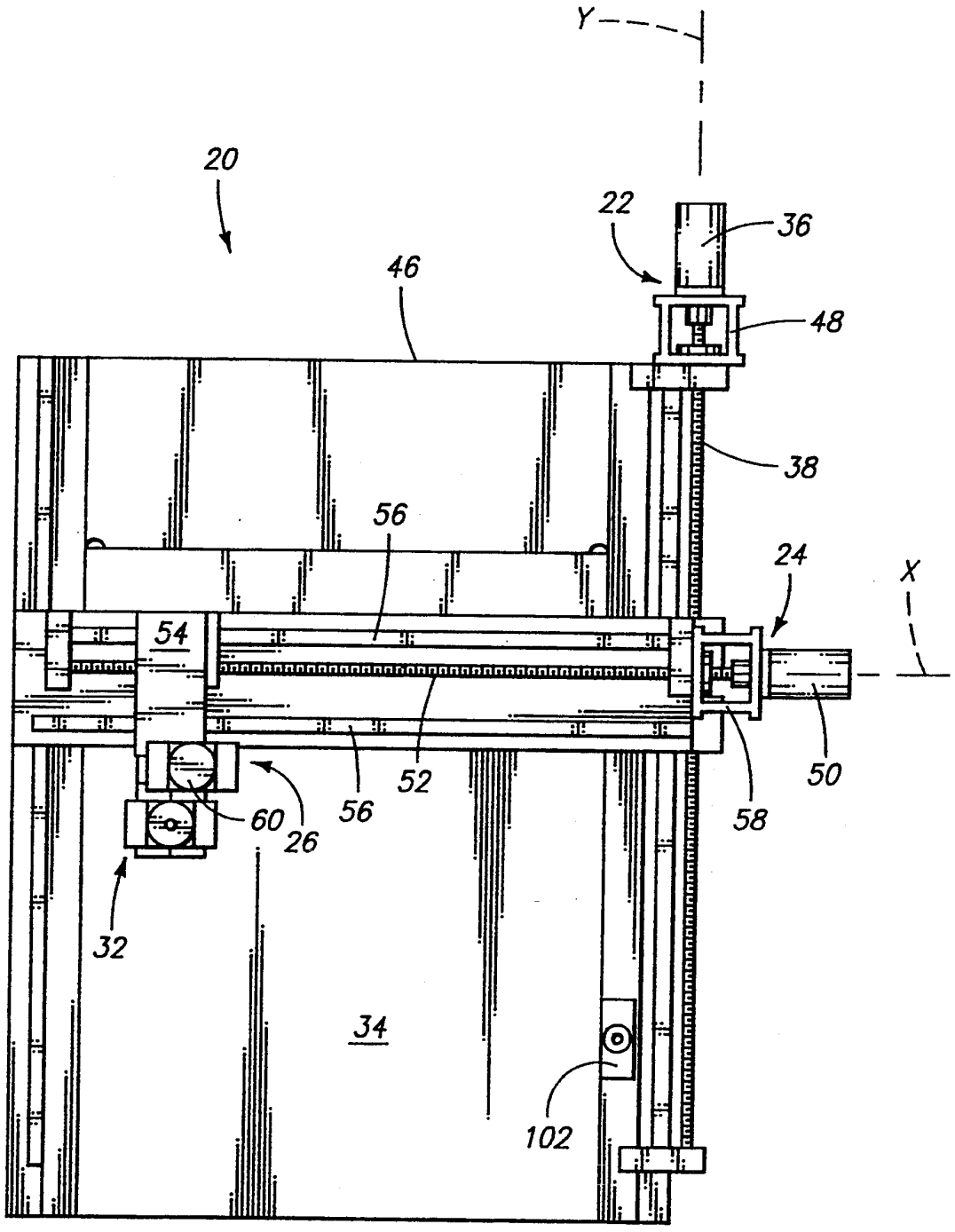

Fig 2

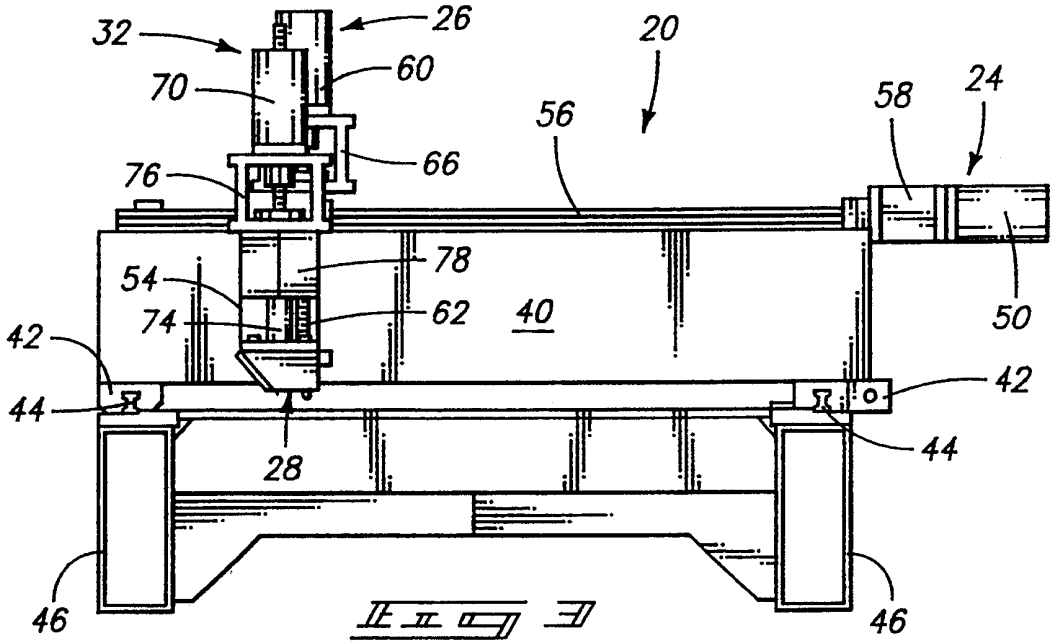
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Fig 3

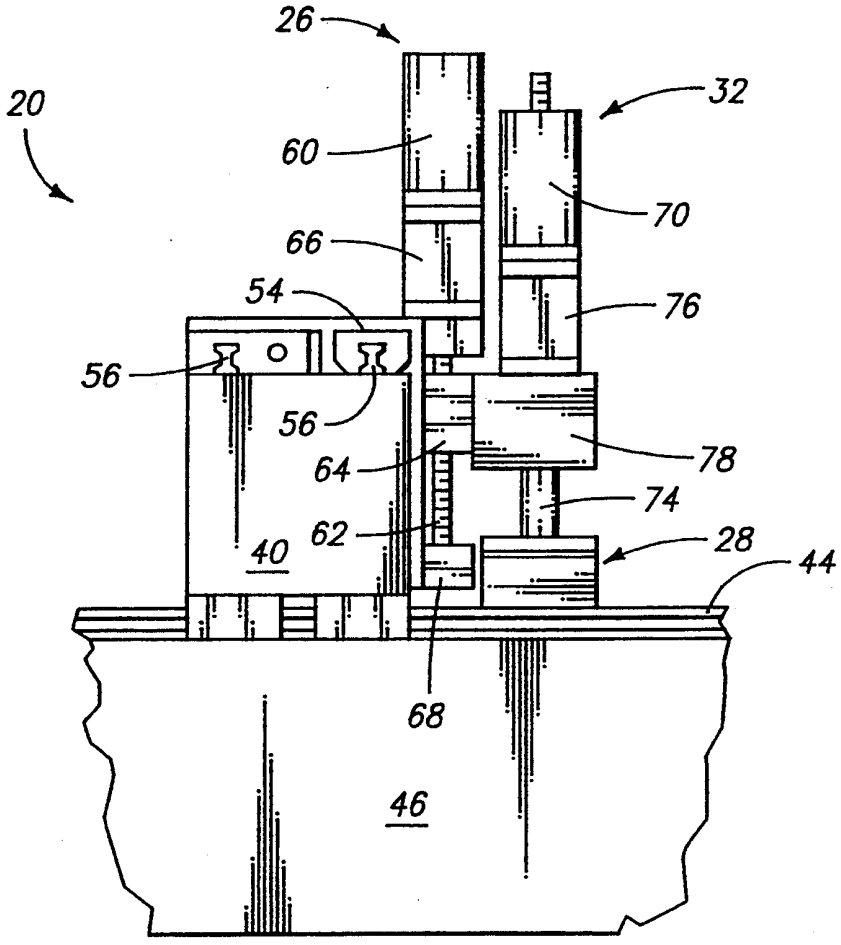
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Fig 5

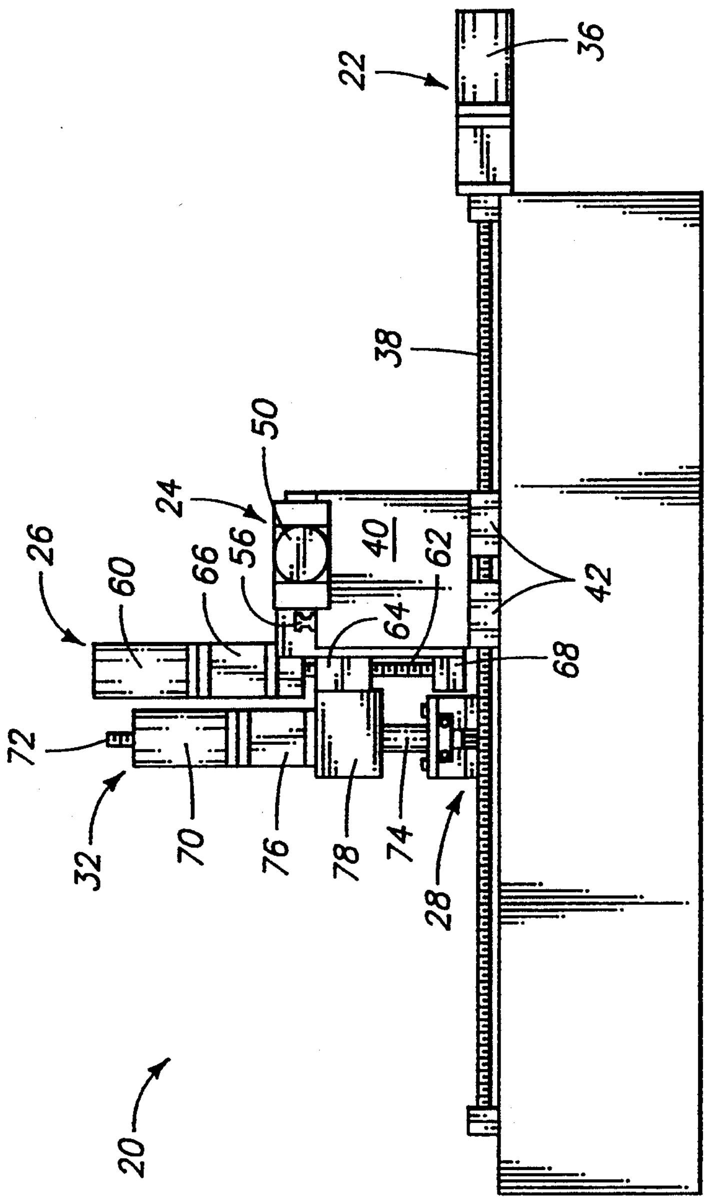


FIG. 4

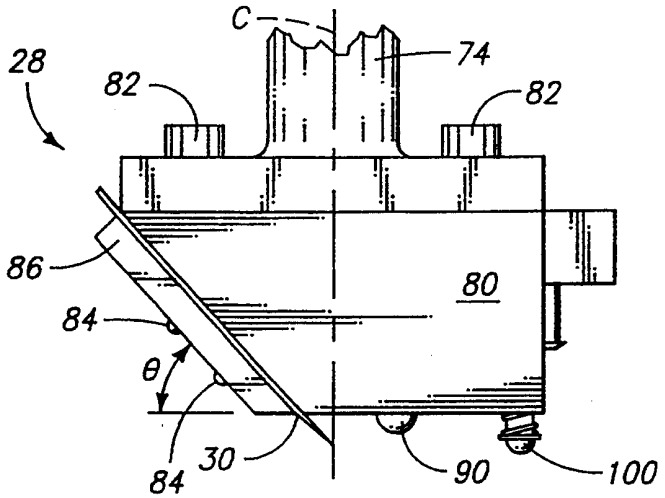
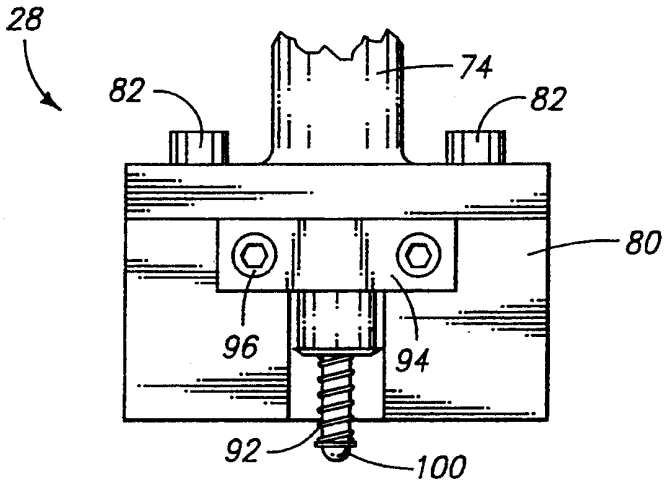


Fig 6



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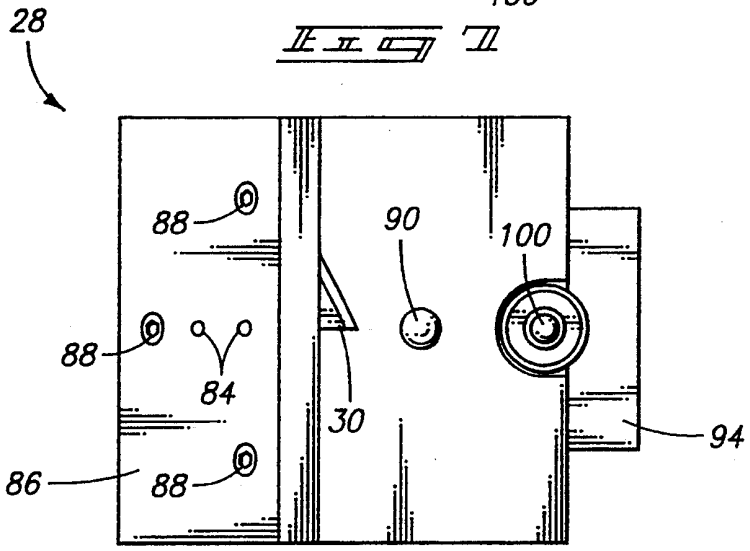

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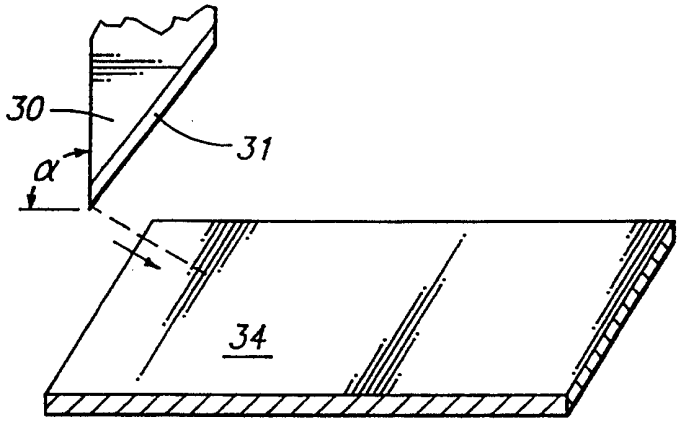


Fig. 9

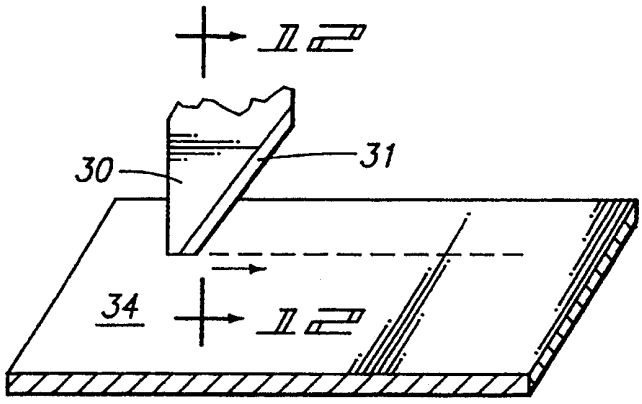
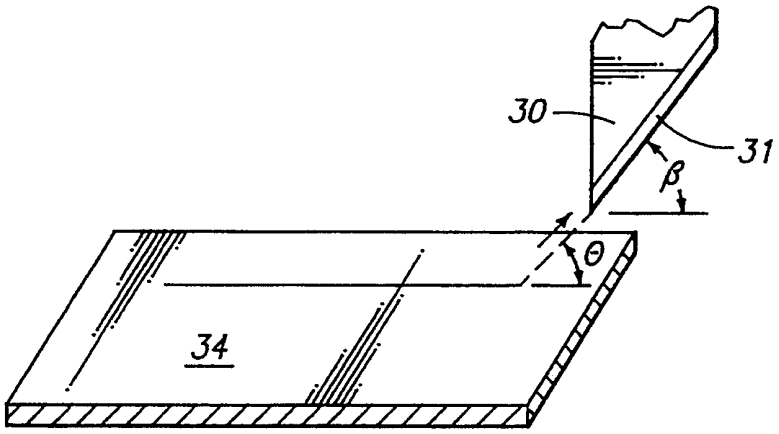


Fig. 10



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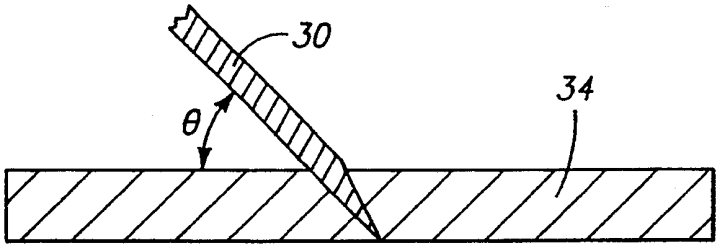

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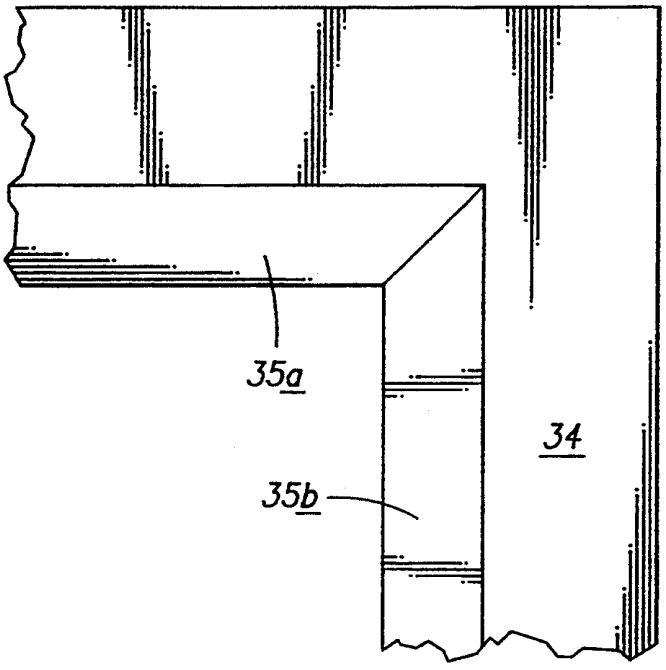

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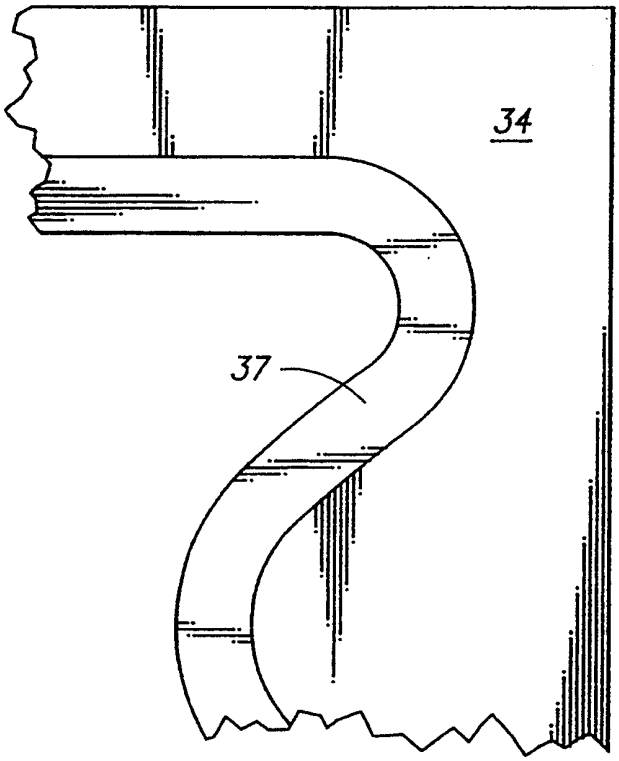

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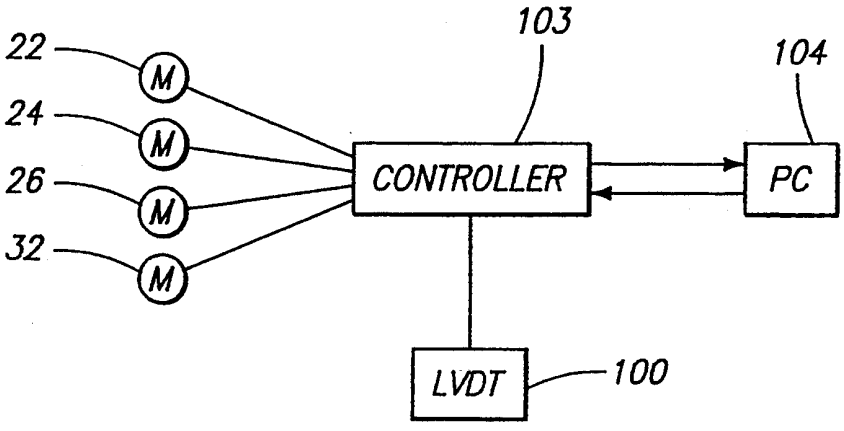

Fig 15

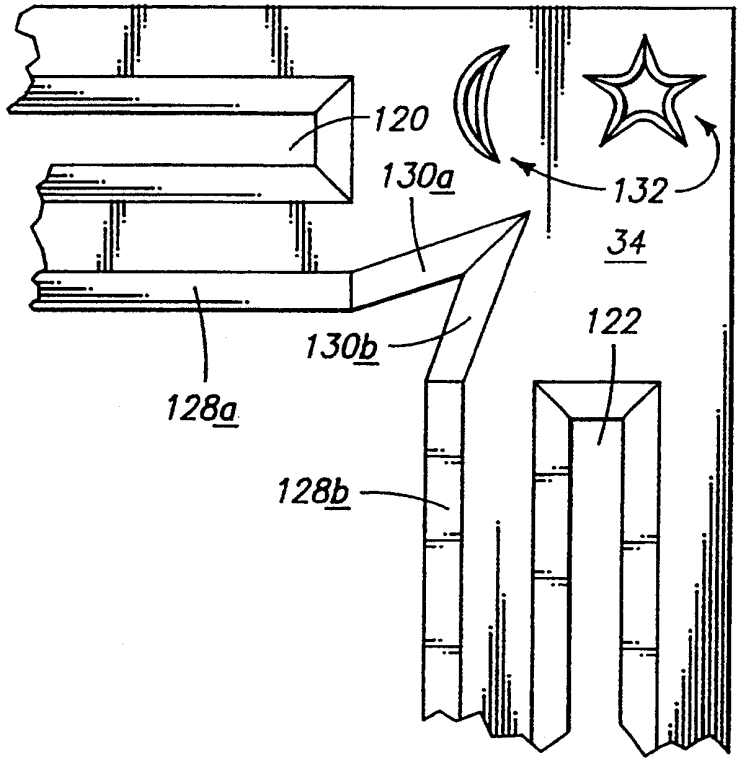

Fig 16