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United States Patent [19]

[11] Patent Number: **5,733,081**

Dowdle et al.

[45] Date of Patent: *Mar. 31, 1998

[54] APPARATUS FOR CUTTING MAT BOARD

[76] Inventors: **Barton K. Dowdle; Robert K. Dowdle**, both of 751 S. East Mountain Cir., Alpine, Utah 84004

[*] Notice: The portion of the term of this patent subsequent to Mar. 31, 2009, has been disclaimed.

[21] Appl. No.: **218,895**

[22] Filed: **Mar. 28, 1994**

Related U.S. Application Data

[60] Division of Ser. No. 839,395, Feb. 20, 1992, Pat. No. 5,317,943, which is a continuation-in-part of Ser. No. 490,045, Mar. 6, 1990, Pat. No. 5,100,270.

[51] Int. Cl.⁶ **B23Q 11/00; B23C 9/00**

[52] U.S. Cl. **409/137; 29/DIG. 56; 83/168; 408/61**

[58] Field of Search 409/132, 189, 409/190, 191, 197, 136, 137, 192, 202, 203, 205, 217, 232, 233, 79; 83/56, 100, 168; 29/577, DIG. 86, DIG. 56; 408/56, 58, 61; 144/252 R, 365; 269/303

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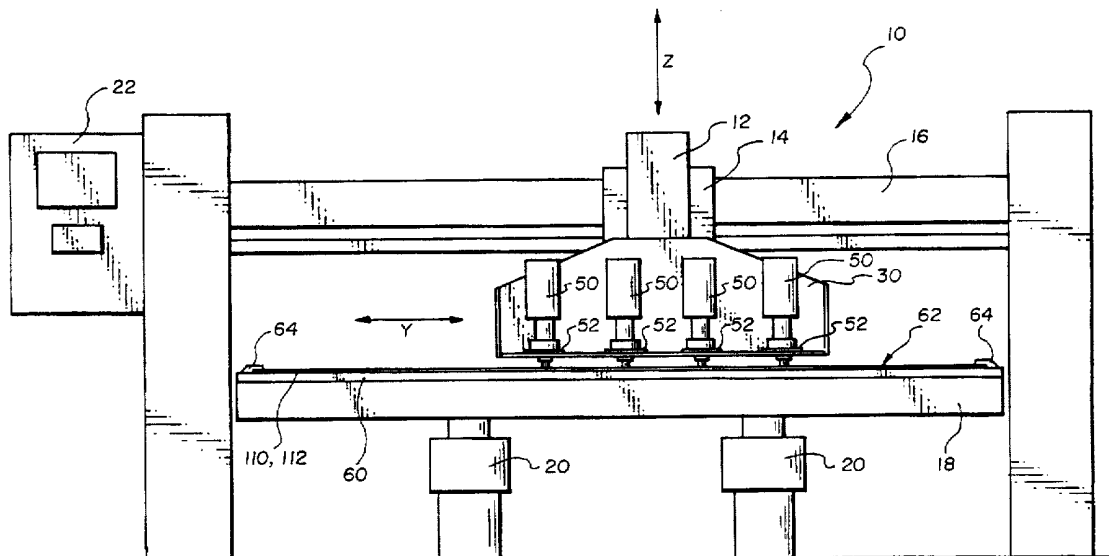
3734127 4/1989 Germany

Primary Examiner—William R. Briggs
Attorney, Agent, or Firm—Trask, Britt & Rossa

[57] ABSTRACT

A method and apparatus for cutting mat board, and more specifically for cutting apertures including non-linear boundaries in mat board. The preferred embodiment of the apparatus of the present invention includes an automatically controlled cutting tool for cutting apertures having bevelled boundaries according to a predetermined pattern. The preferred embodiment of the method of the present invention includes stacking a mat board on a planar substrate and cutting through the mat board into but not through the underlying substrate.

9 Claims, 6 Drawing Sheets



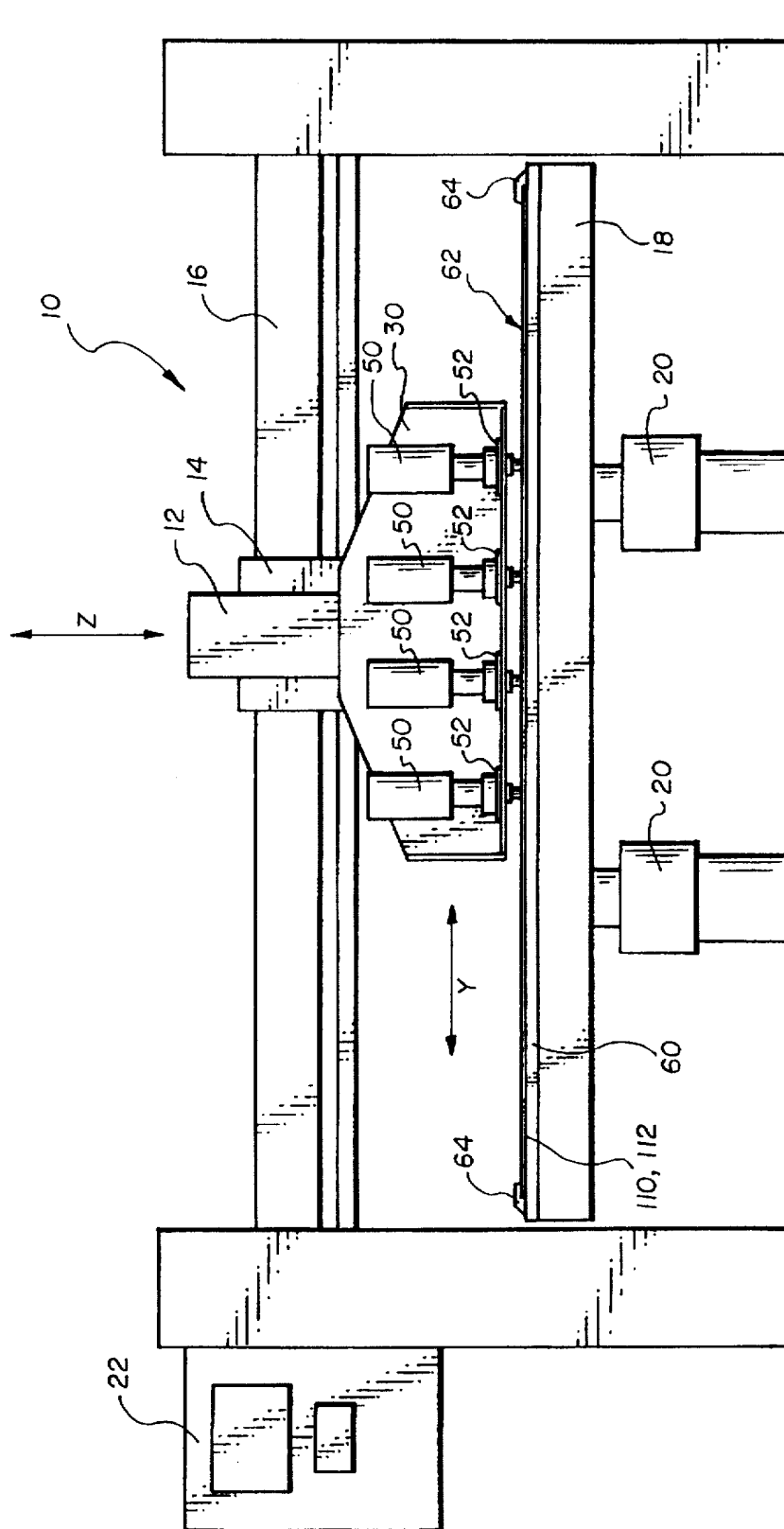


Fig. 1

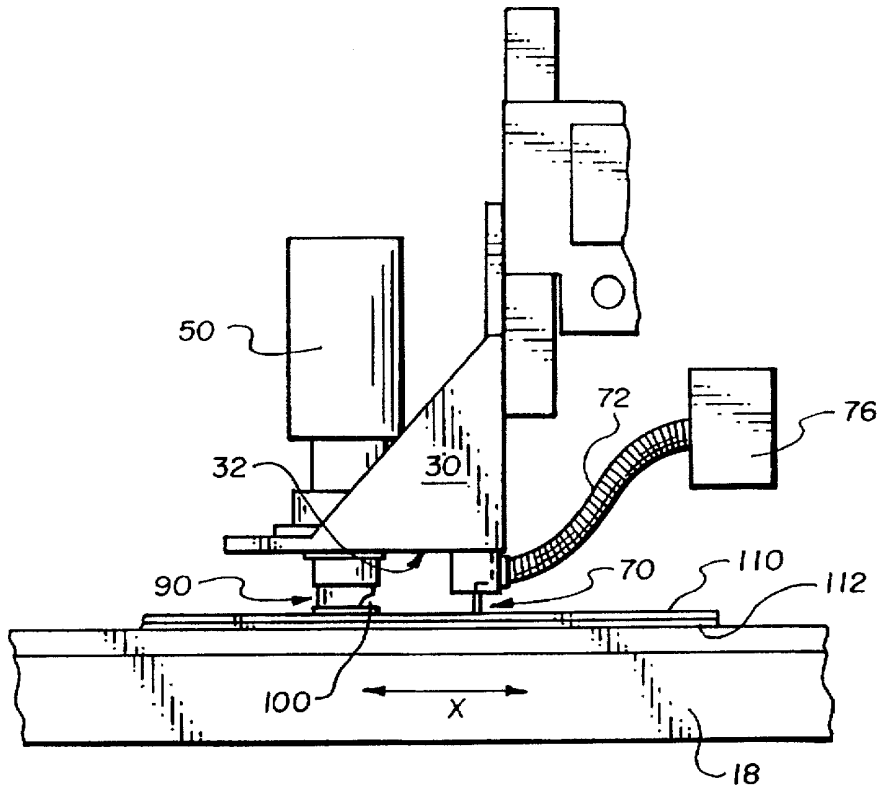


Fig. 2

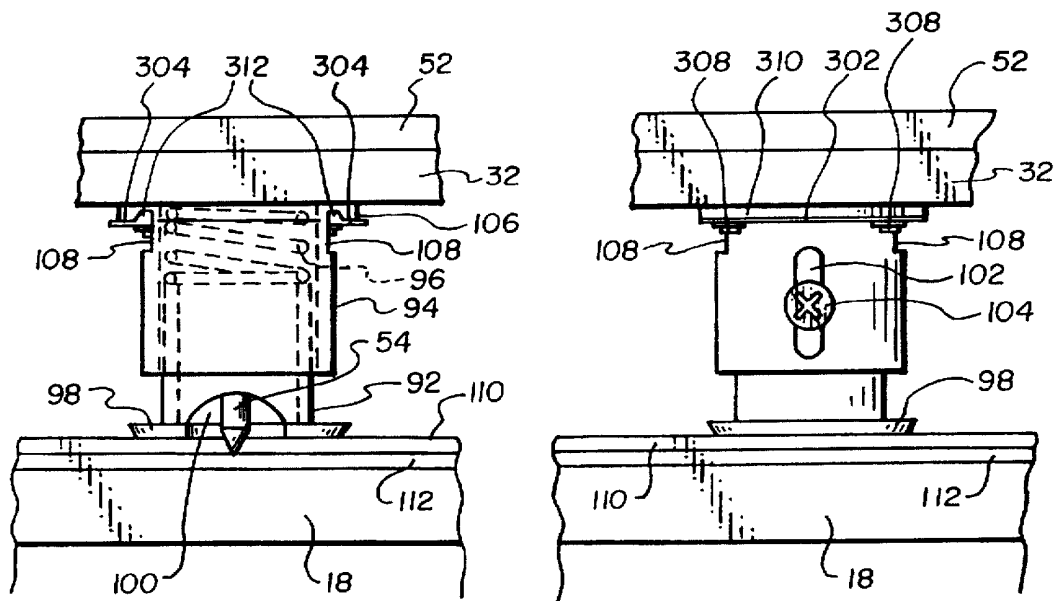


Fig. 3

Fig. 4

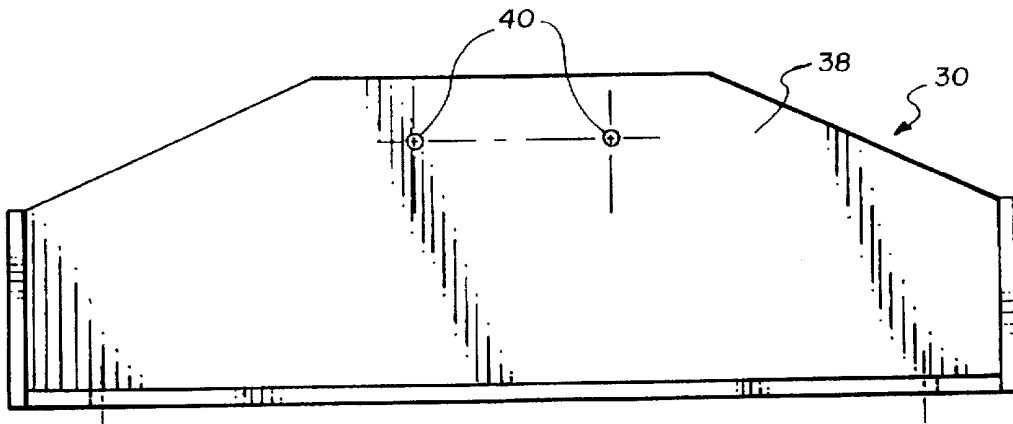


Fig. 5

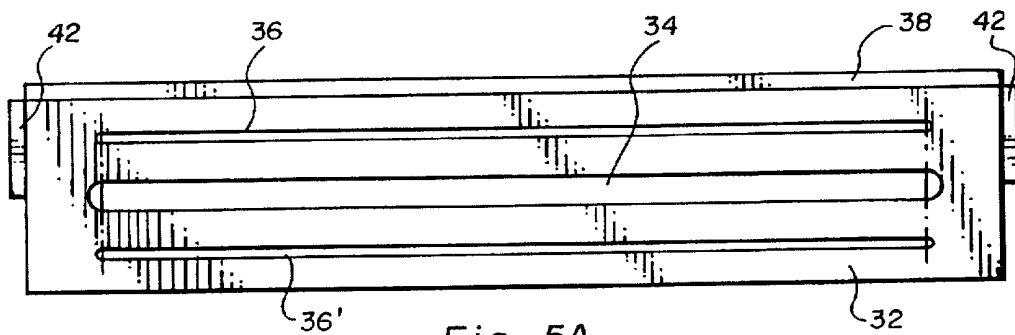


Fig. 5A

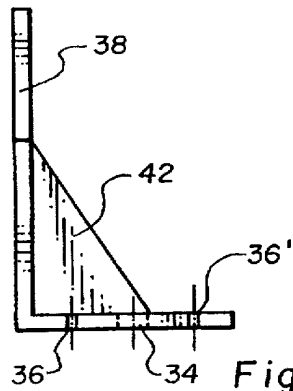


Fig. 5B

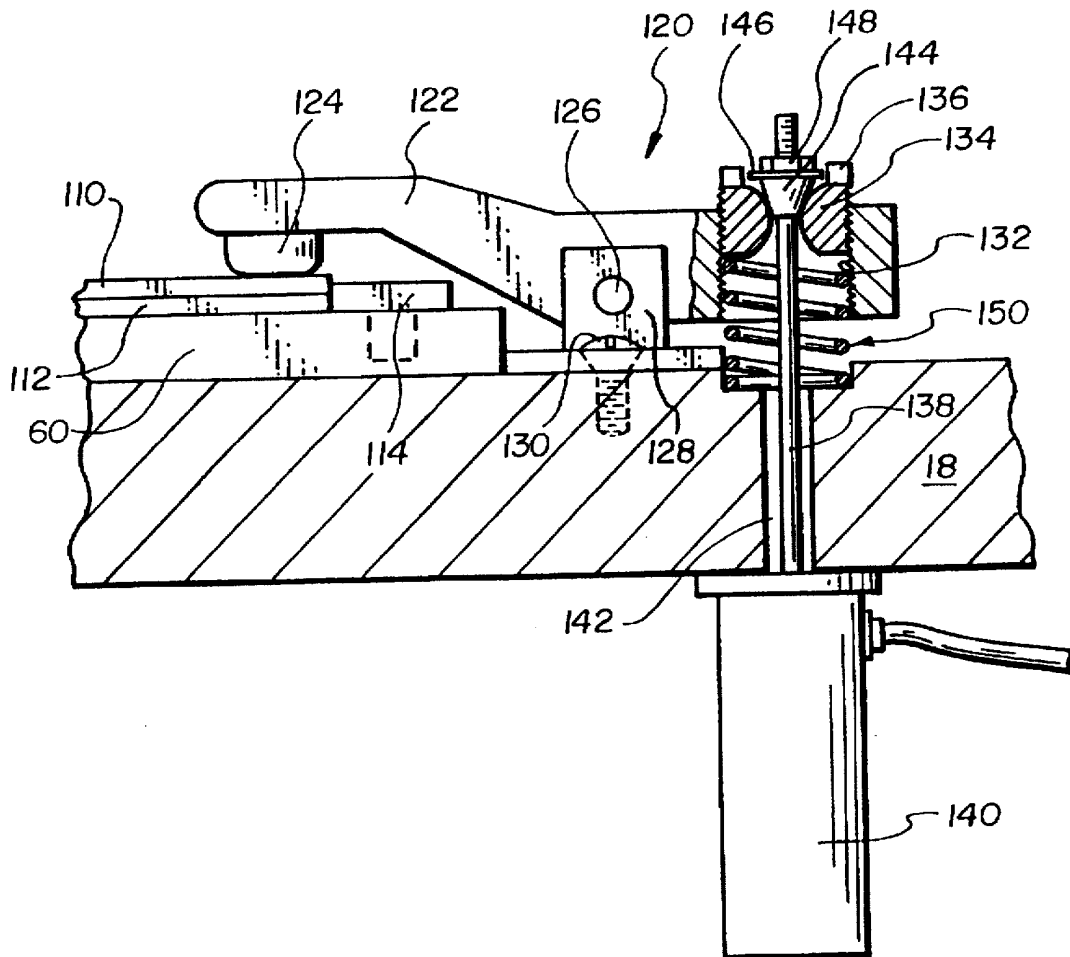


Fig. 6

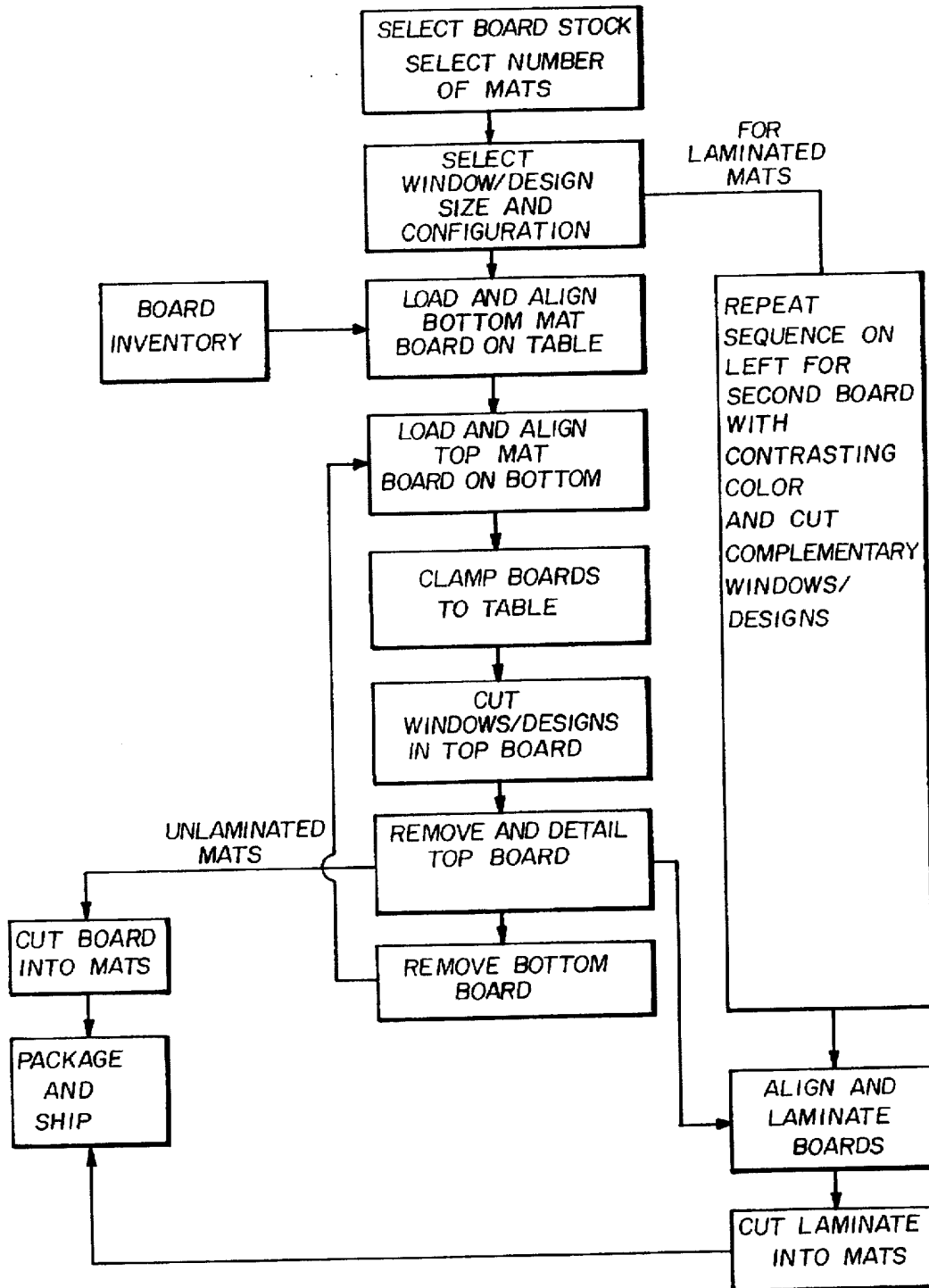
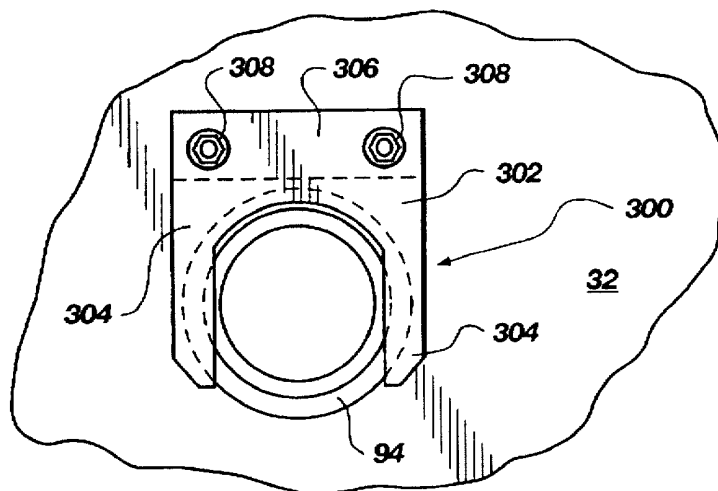
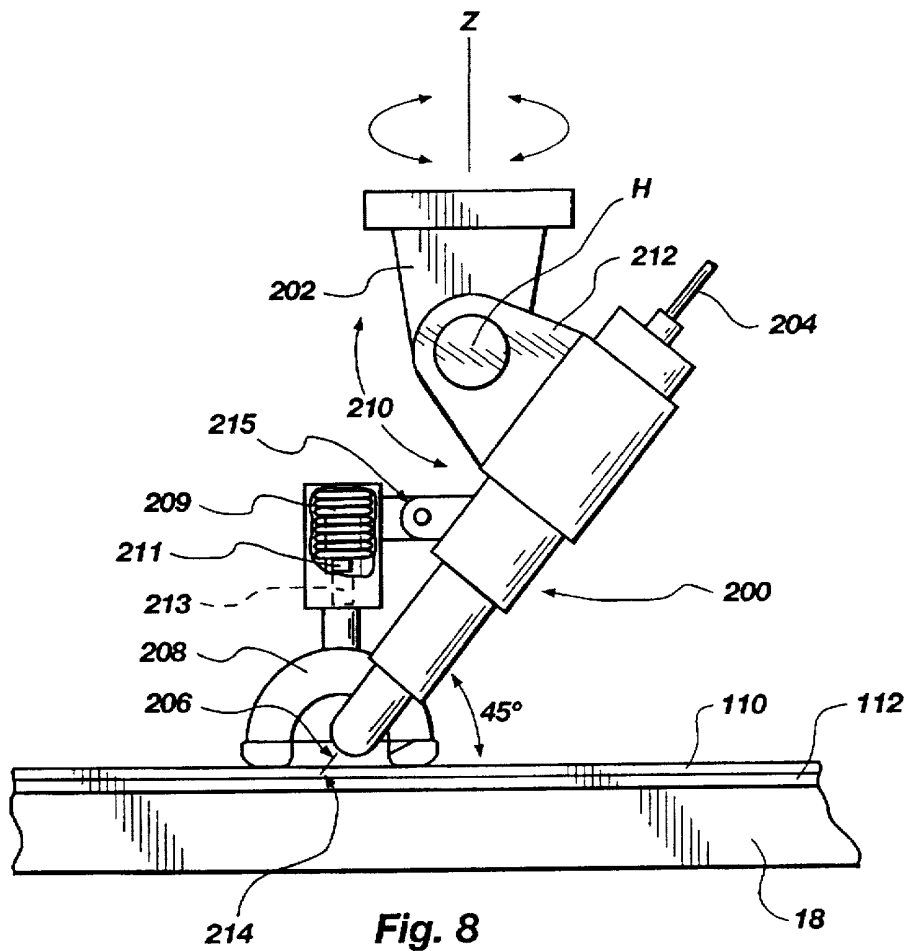


Fig. 7



UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 5,733,081
DATED : March 31, 1998
INVENTOR(S) : Dowdle et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On the Title Page:

[*] Notice: should read--The term of this patent shall not extend beyond the expiration date of Pat. No. 5,100,270.

Column 1, line 34, before "window" insert --a--;
Column 3, line 61, change "mils" to --rails--;
Column 5, line 12, delete "74";
Column 7, line 10, after "9!N40" change "602" to --G02--;
Column 7, line 20, change "J0.7383" to --J.7383--;
Column 7, line 21, change "J3.5661" to --3.5661--;
Column 7, line 57, change "comers" to --corners--;
Column 9, line 34, change "free" to --fine--; and
Column 9, line 37, change "free" to --fine--.

Signed and Sealed this
Twentieth Day of July, 1999

Attest:



Q. TODD DICKINSON

Attesting Officer

Acting Commissioner of Patents and Trademarks