

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

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(45) **Date of Patent:** **May 8, 2001**

(54) **METHOD AND APPARATUS FOR FACILITATING USER INTERACTION WITH A MEASUREMENT INSTRUMENT USING A DISPLAY-BASED CONTROL KNOB**

5,485,600 \* 1/1996 Joseph et al. .... 703/13  
5,559,301 9/1996 Bryan, Jr. et al. .

**OTHER PUBLICATIONS**

(75) Inventors: **Kathryn A. Engholm**, Beaverton;  
**Larry Joe Huff**, Scappoose, both of  
OR (US)

ToolBox 4.3 OTDR Test Application Software Instruction  
Manual, Mar. 1997, pp. 25-26.

(73) Assignee: **Tektronix, Inc.**, Beaverton, OR (US)

\* cited by examiner

(\*) Notice: Subject to any disclaimer, the term of this  
patent is extended or adjusted under 35  
U.S.C. 154(b) by 0 days.

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Sponseller

(21) Appl. No.: **09/131,900**

(22) Filed: **Aug. 10, 1998**

(51) **Int. Cl.**<sup>7</sup> ..... **H03K 11/00**

(52) **U.S. Cl.** ..... **341/35; 341/34; 345/173;**  
345/974

(58) **Field of Search** ..... 341/34, 192, 35;  
345/173, 118, 434, 974

(57) **ABSTRACT**

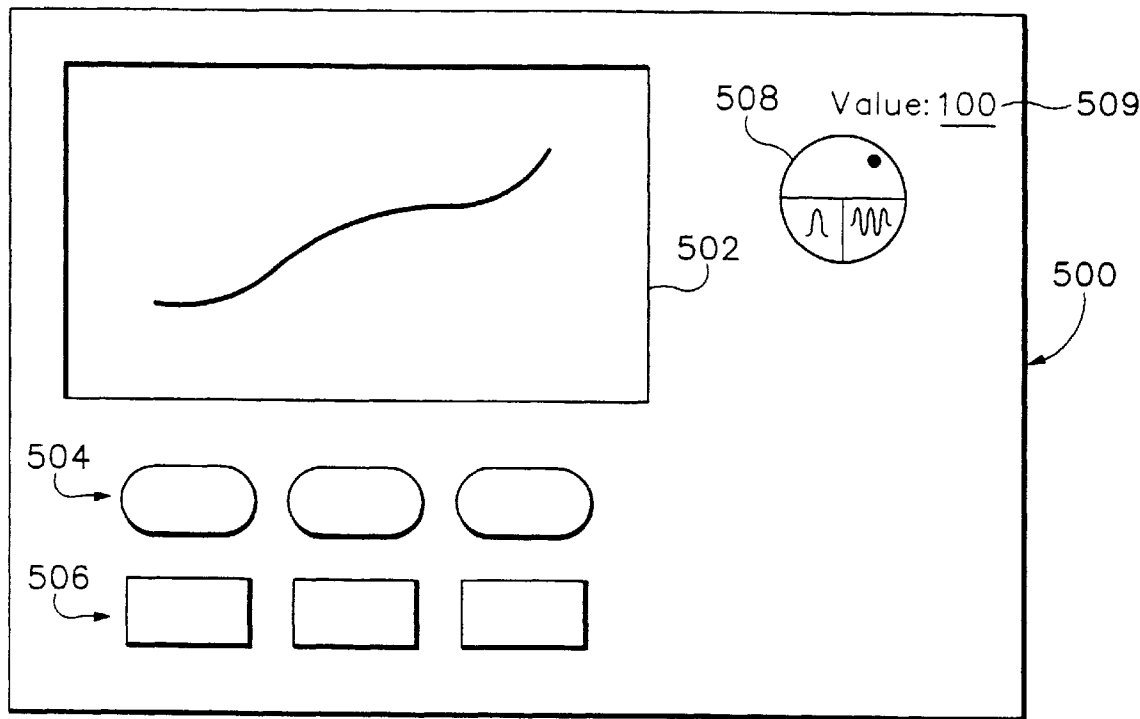
A method and apparatus for facilitating user interaction with a measurement instrument displays a control knob glyph corresponding to a user-adjustable parameter of the measurement instrument, the control knob glyph having an indicator and a partially circular drag area through which the indicator can be rotated. Inputs indicating amounts of rotational movement for the indicator can be received, and the location of the indicator within the drag area and the value of the parameter changed in response to such inputs.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

4,649,499 3/1987 Sutton et al. .

**17 Claims, 4 Drawing Sheets**



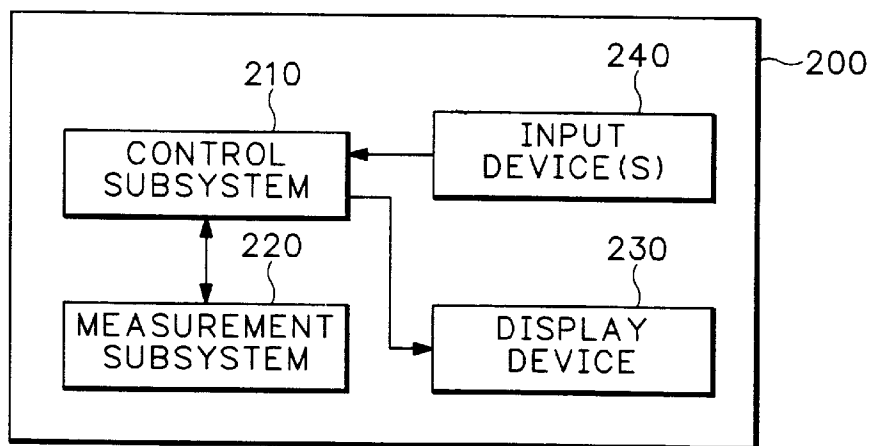
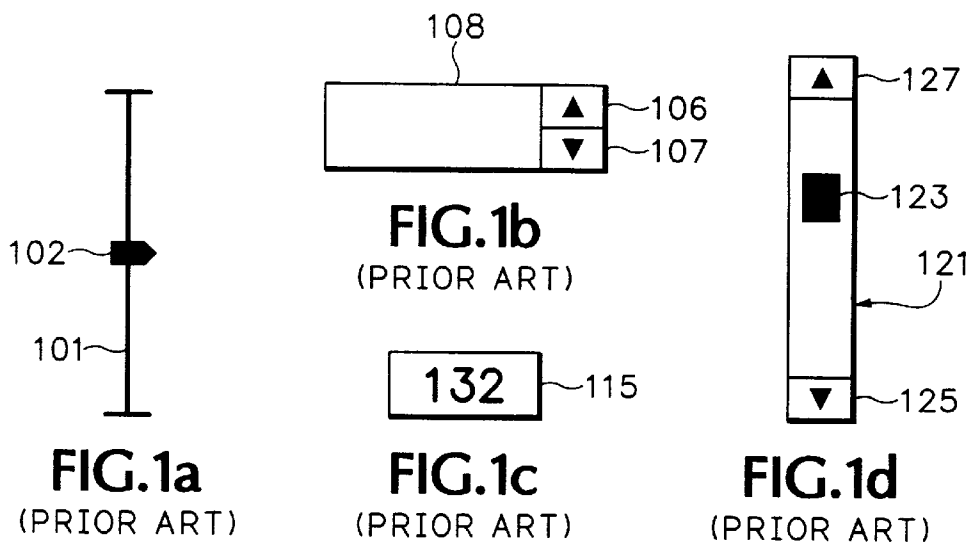


FIG. 2

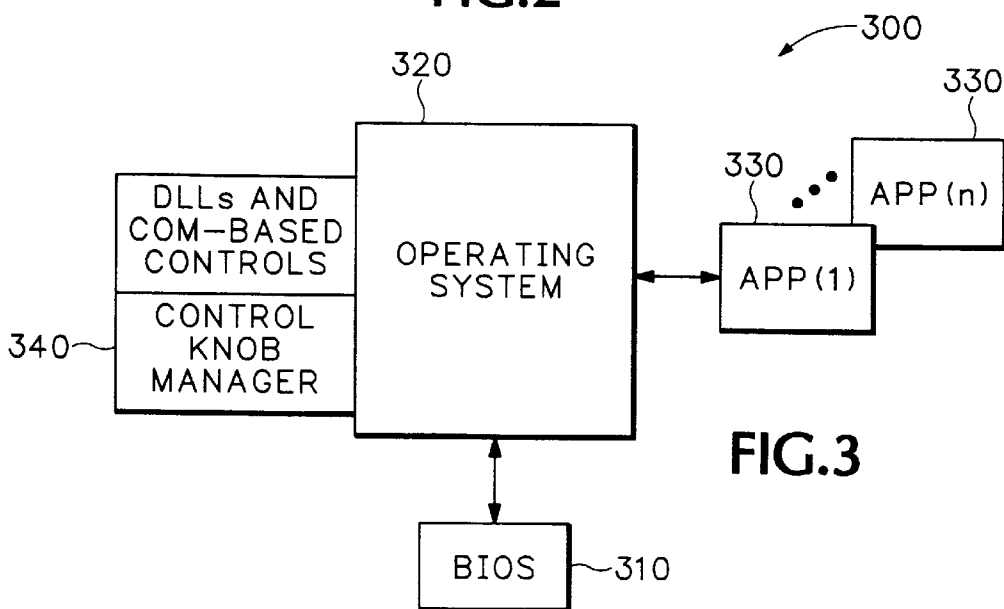


FIG. 3

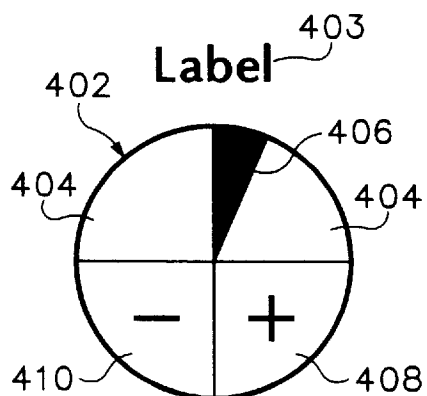


FIG. 4a

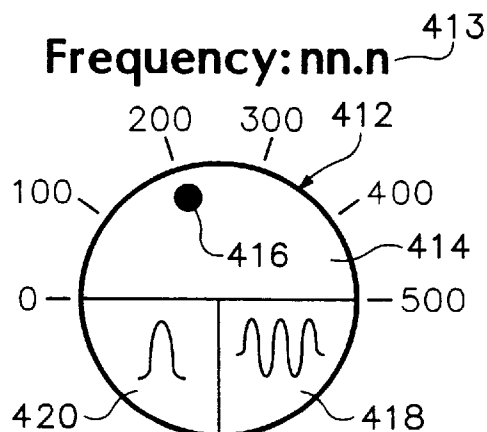


FIG. 4b

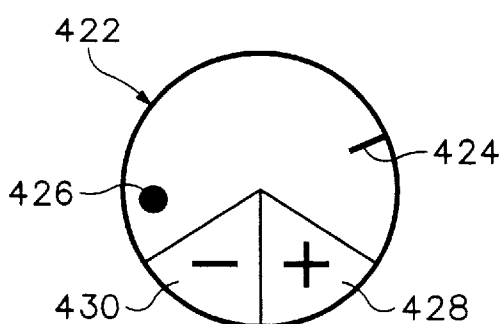


FIG. 4c

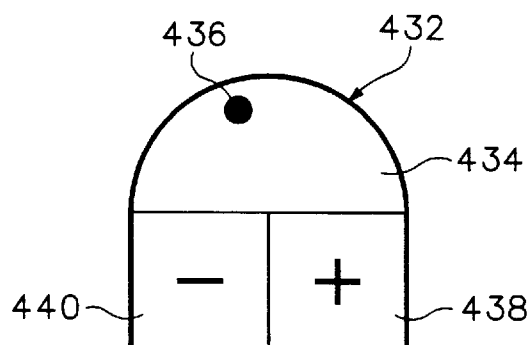


FIG. 4d

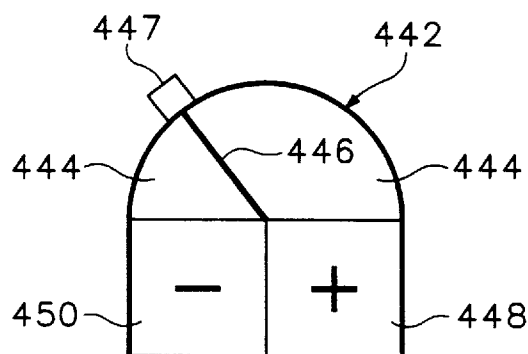


FIG. 4e

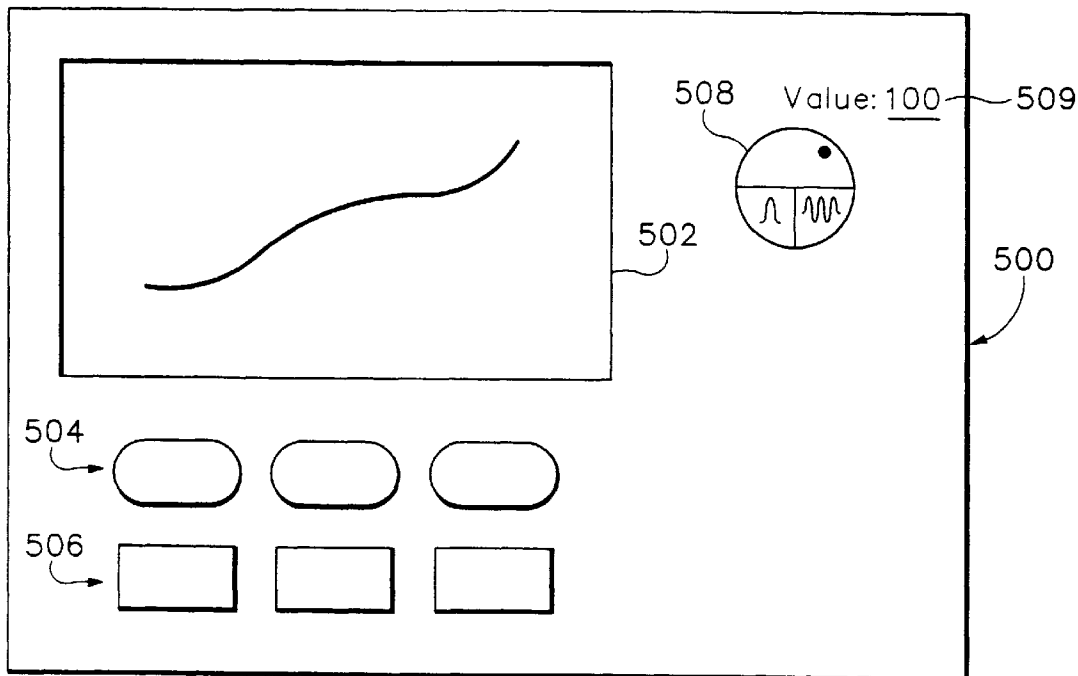


FIG. 5

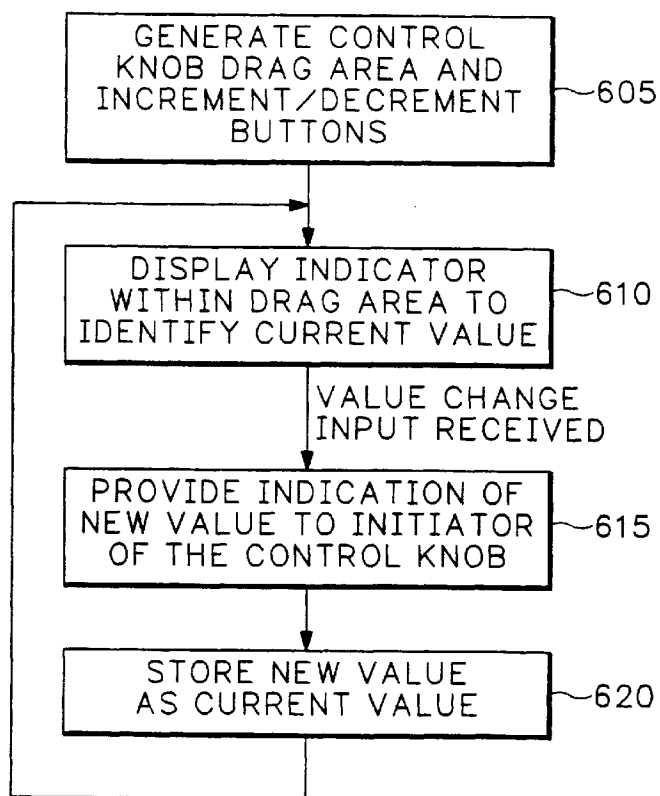


FIG. 6

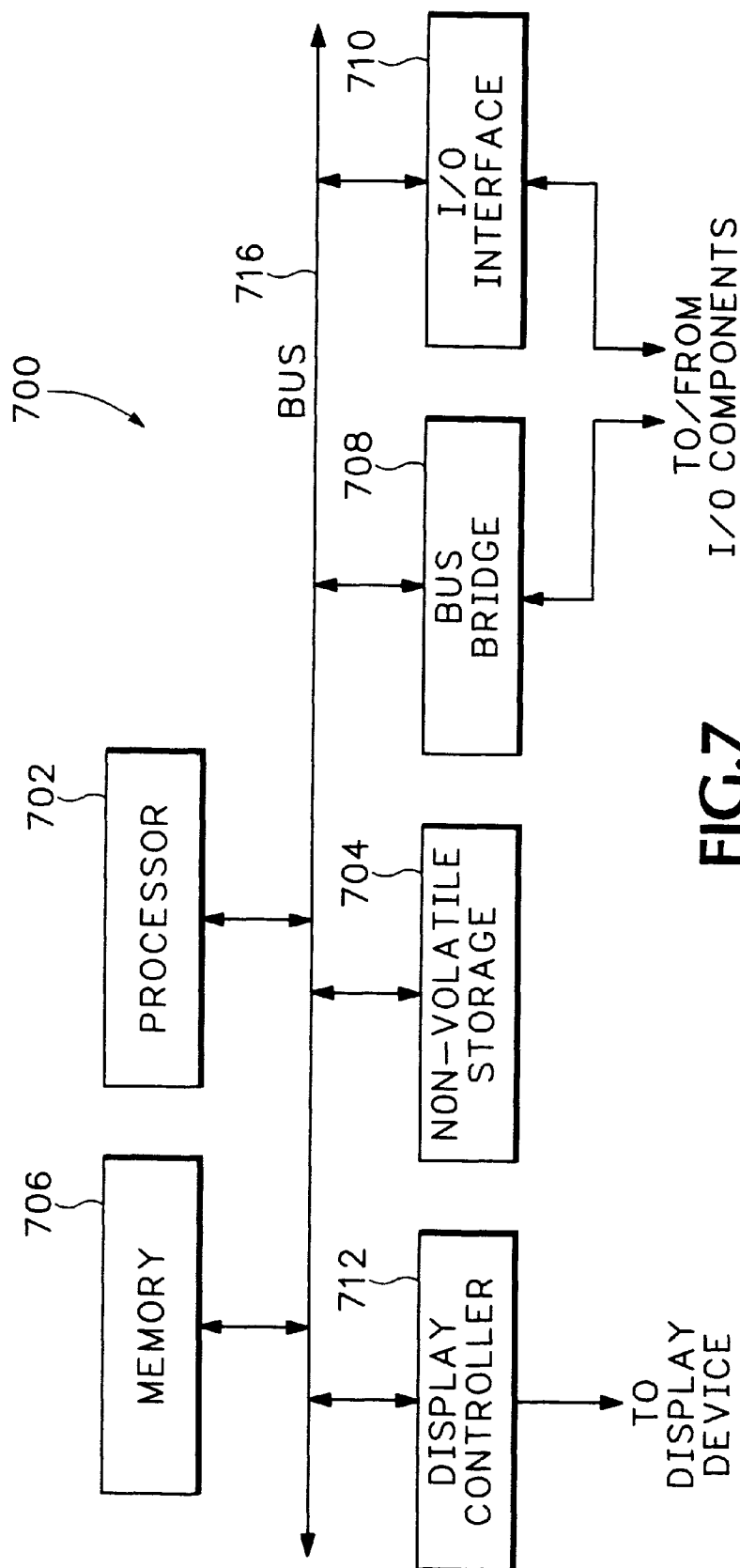


FIG.7

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