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**Amro et al.**

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(54) **TOUCH SCREEN WITH RANDOM FINGER PLACEMENT AND ROLLING ON SCREEN TO CONTROL THE MOVEMENT OF INFORMATION ON-SCREEN**

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(\*) 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.: **09/070,180**

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(52) **U.S. Cl.** ..... **345/173; 345/157; 178/18.01; 178/18.05; 178/18.06**

(58) **Field of Search** ..... **345/156, 157, 345/173, 159, 160, 172; 178/18.01, 18.03, 18.05, 18.06, 18.07**

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*Primary Examiner*—Bipin Shalwala

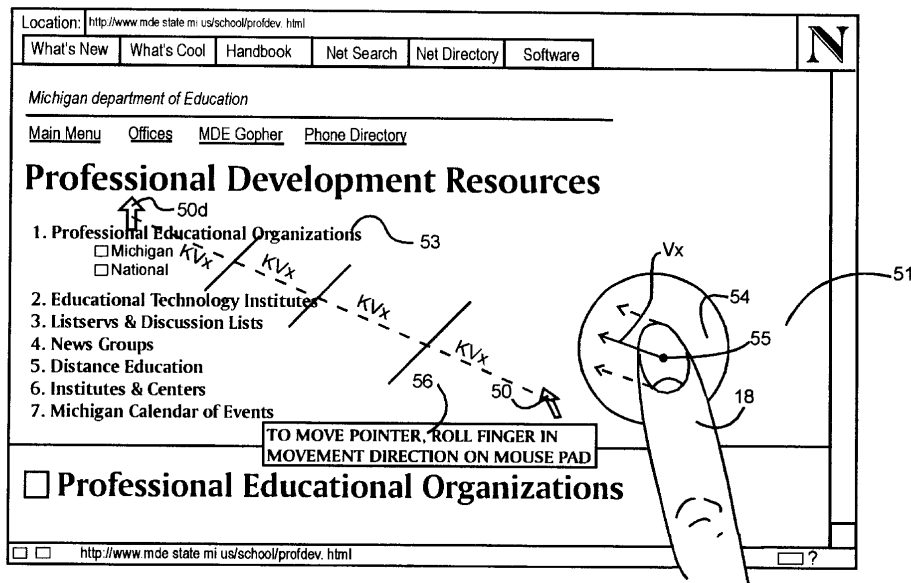
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(57) **ABSTRACT**

A computer controlled display system with a user interactive touch screen is provided with an on-screen mouse to which user input may be applied by rolling of the touch finger to thereby move displayed information: the pointer or scrolled information on the screen. Means are provided which are activated by the touching of the screen at any random position selected by the user for enabling the detection of any rolling of said placed fingertip in an orthogonal direction. Also provided are means responsive to the detection of said rolling of said placed fingertip for moving said displayed data in an orthogonal direction corresponding to the direction of said rolling. The data moved may be the cursor or pointer or, when scrolling, the whole screen of data may be moved.

**21 Claims, 9 Drawing Sheets**



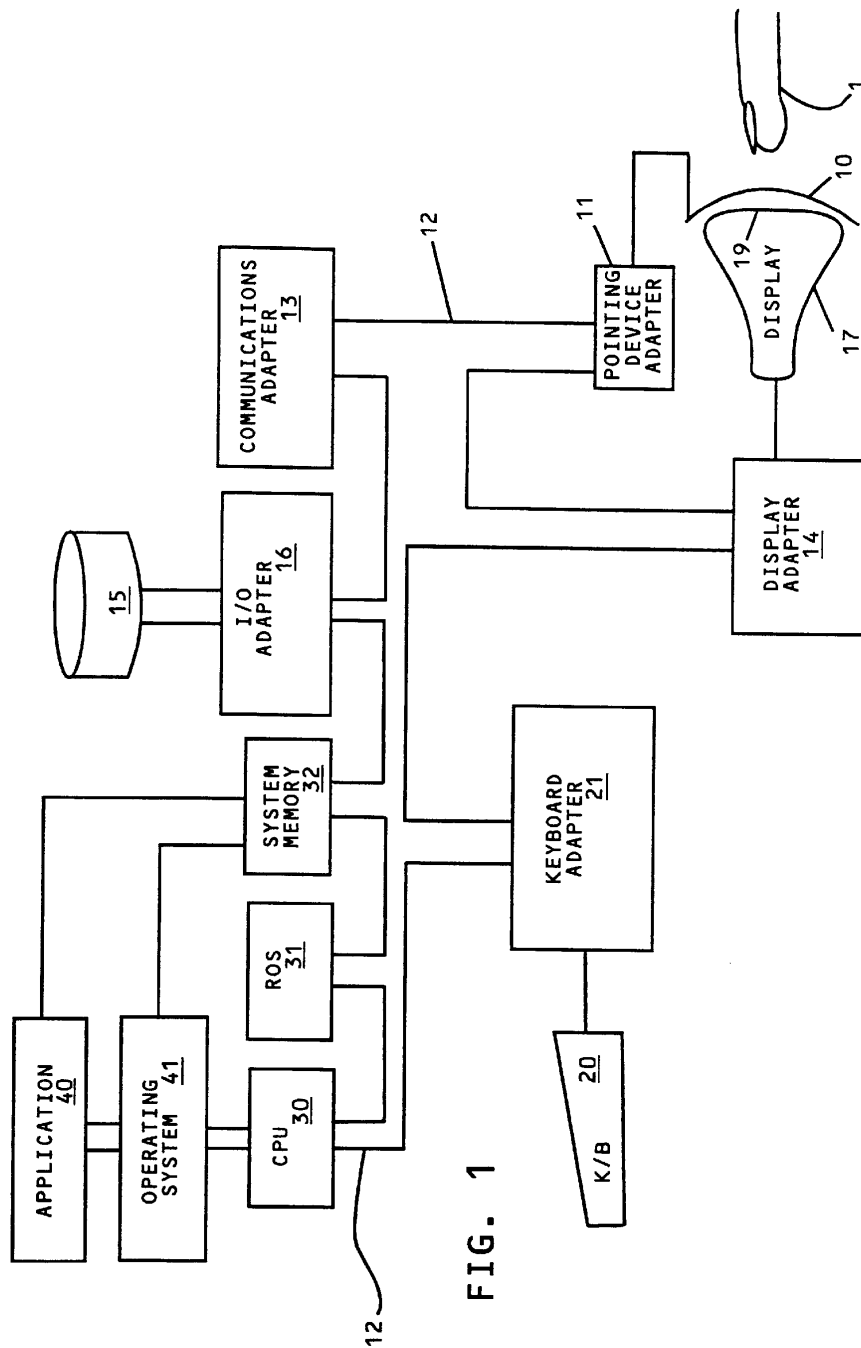


FIG. 1

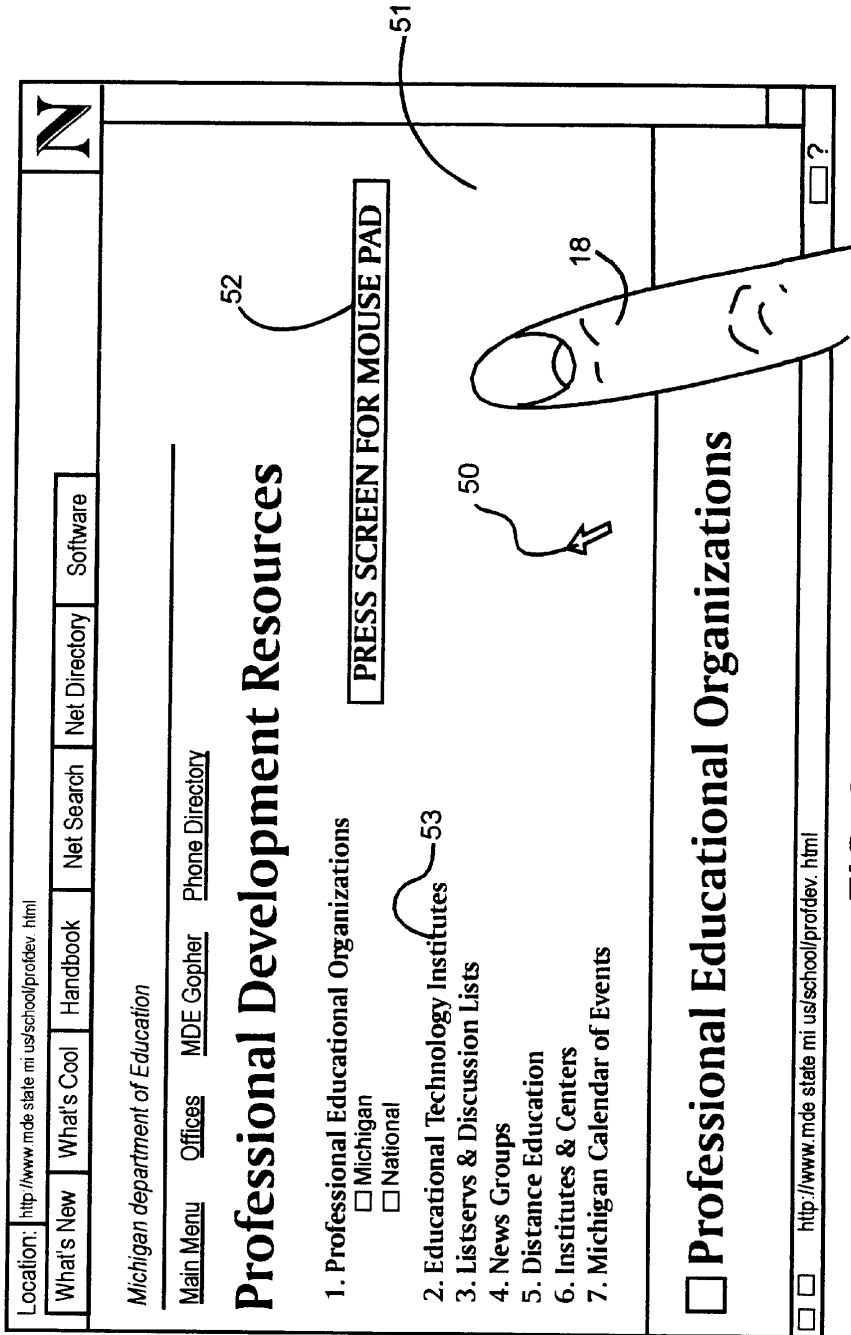


FIG. 2

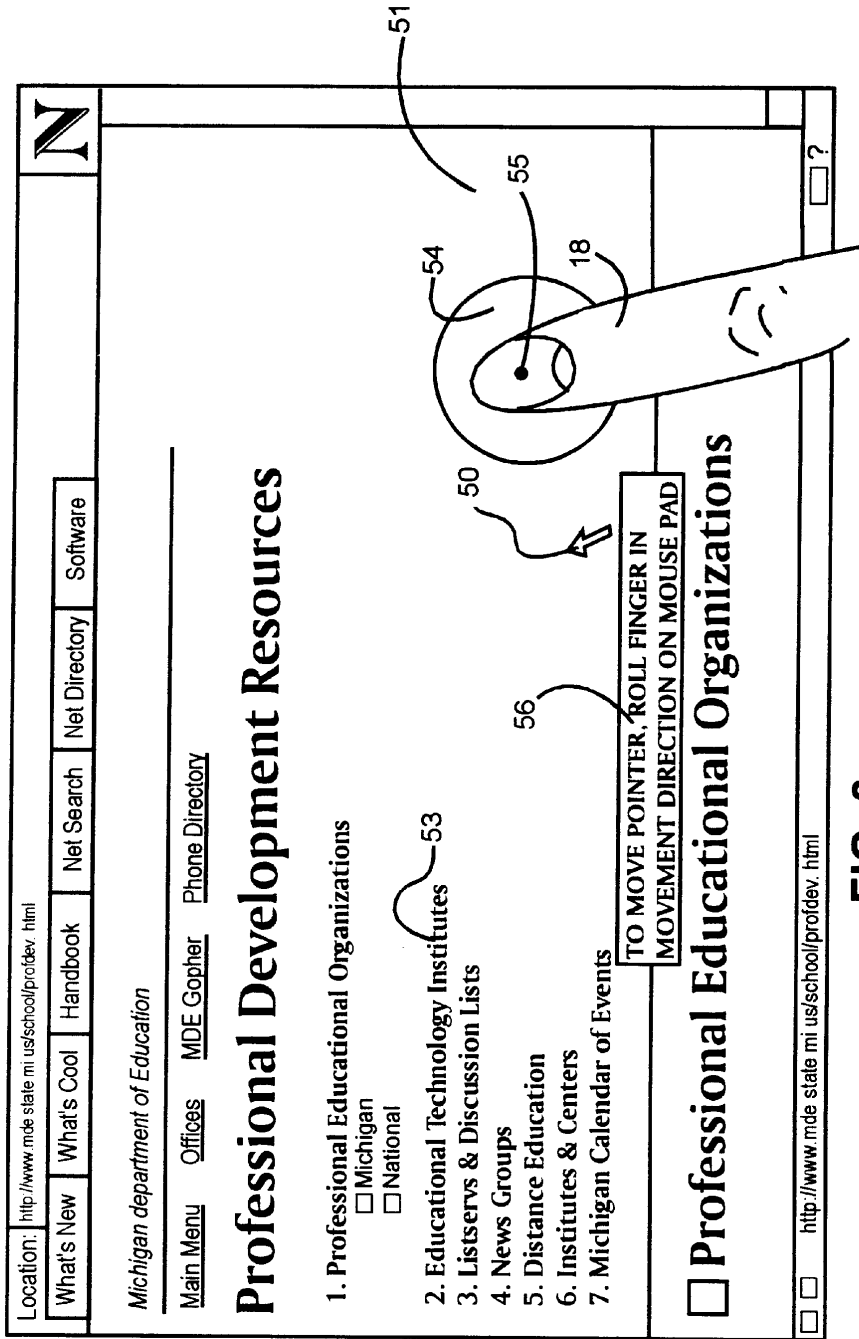


FIG. 3

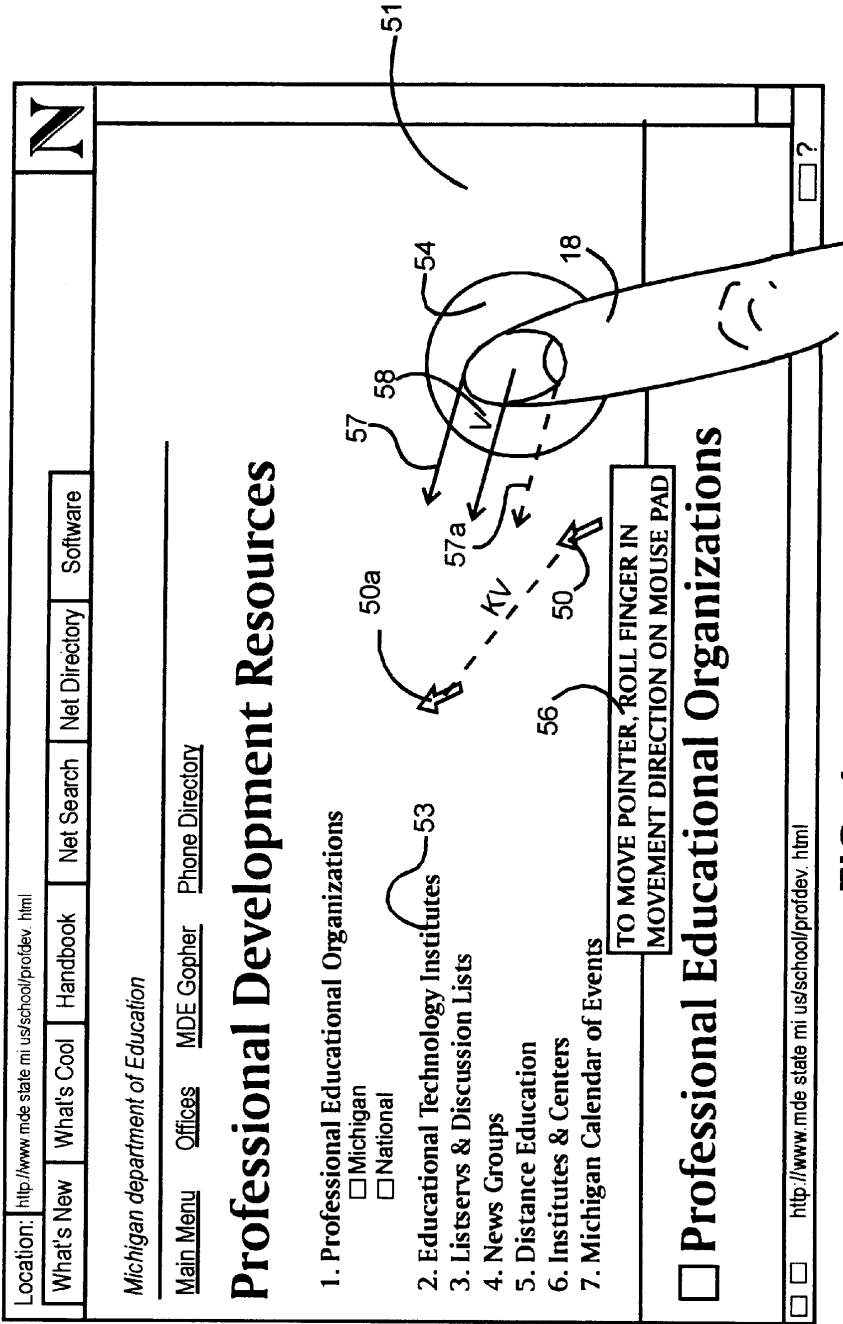


FIG. 4

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