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# United States Patent [19]

[11] Patent Number: **6,128,012**

Seidensticker, Jr. et al.

[45] Date of Patent: **\*Oct. 3, 2000**

[54] **USER INTERFACE FOR A PORTABLE DATA MANAGEMENT DEVICE WITH LIMITED SIZE AND PROCESSING CAPABILITY**

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[73] Assignee: **Microsoft Corporation**, Redmond, Wash.

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[\*] Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

[21] Appl. No.: **08/826,542**

### [57] ABSTRACT

[22] Filed: **Apr. 3, 1997**

#### Related U.S. Application Data

[60] Provisional application No. 60/025,748, Sep. 19, 1996.

A user interface for a combination pager and personal information management (PIM) data device provides considerable versatility in accessing the data and in controlling how the data are displayed to the user. The user interface includes a display screen having only a few rows of lines of data are displayed, and four control buttons, including an Up button, a Down button, an Action button, and a Back button. Since the device maintains data in a hierarchical directory structure and starts at the highest (root) level, the Action button is used to move to a lower level in the directory hierarchy, while the Back button is used to move back up to a higher level. In addition, the Action button is employed to initiate a selected function. If a line (or entry) of a list is above the top line displayed on the screen, an upwardly pointing arrowhead is displayed to the user adjacent the top line. Similarly, a downwardly pointing arrowhead is displayed if a line in the list is below the last line on the screen currently displayed. The user can select an application to execute in the root node of the hierarchy when the device is initially turned on, reset, or after a predefined time interval has elapsed. In addition, the user can selectively actuate a faster scroll rate to move up or down through a list that is relatively long. The format applied to data presented to the user in the display screen is user selectable.

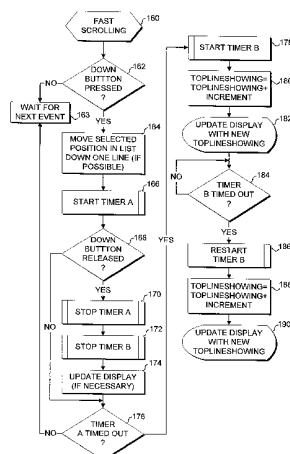
[51] **Int. Cl.**<sup>7</sup> ..... **G06F 3/14**  
 [52] **U.S. Cl.** ..... **345/336; 345/341**  
 [58] **Field of Search** ..... 345/326-358,  
 345/123-125, 963, 973, 169

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28 Claims, 8 Drawing Sheets



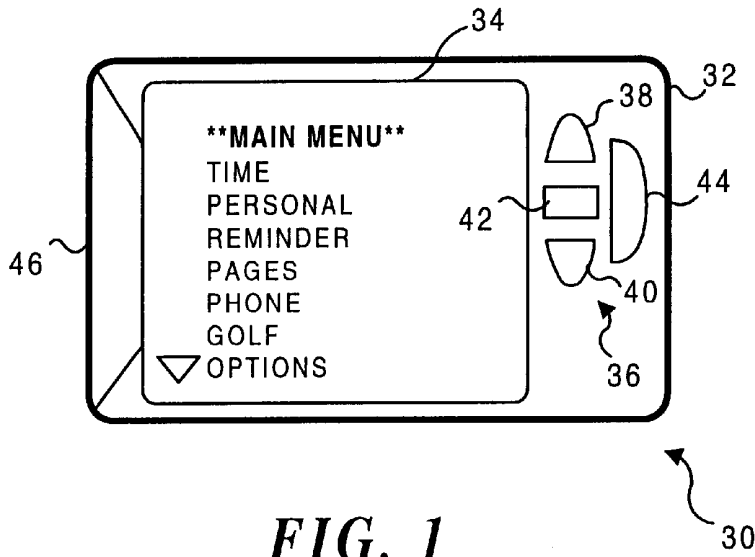


FIG. 1

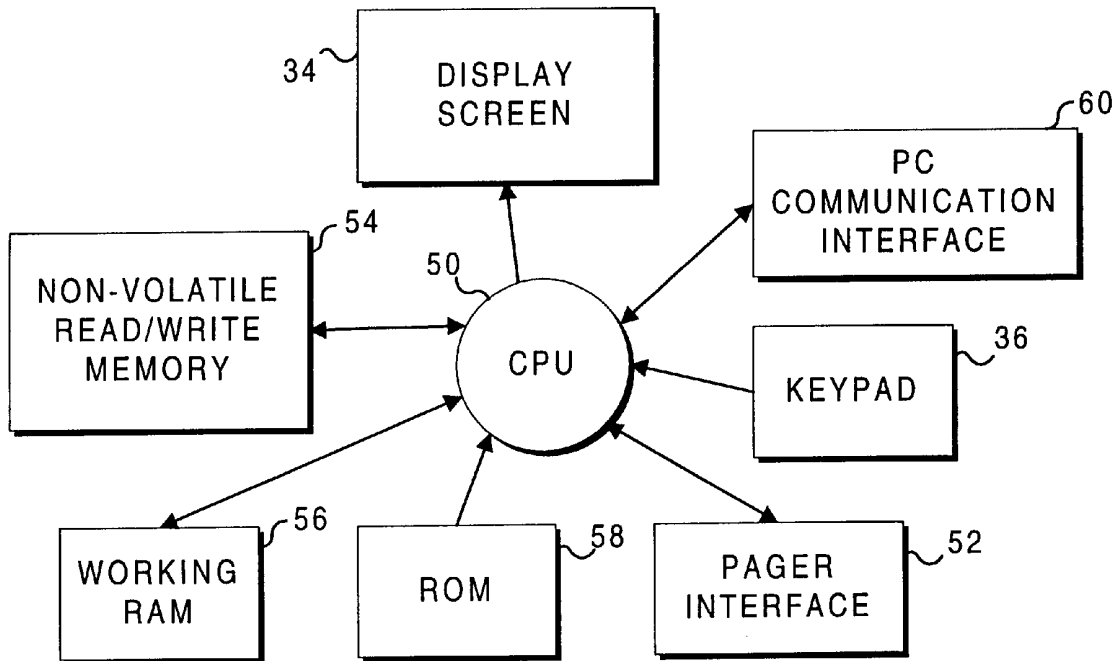


FIG. 2

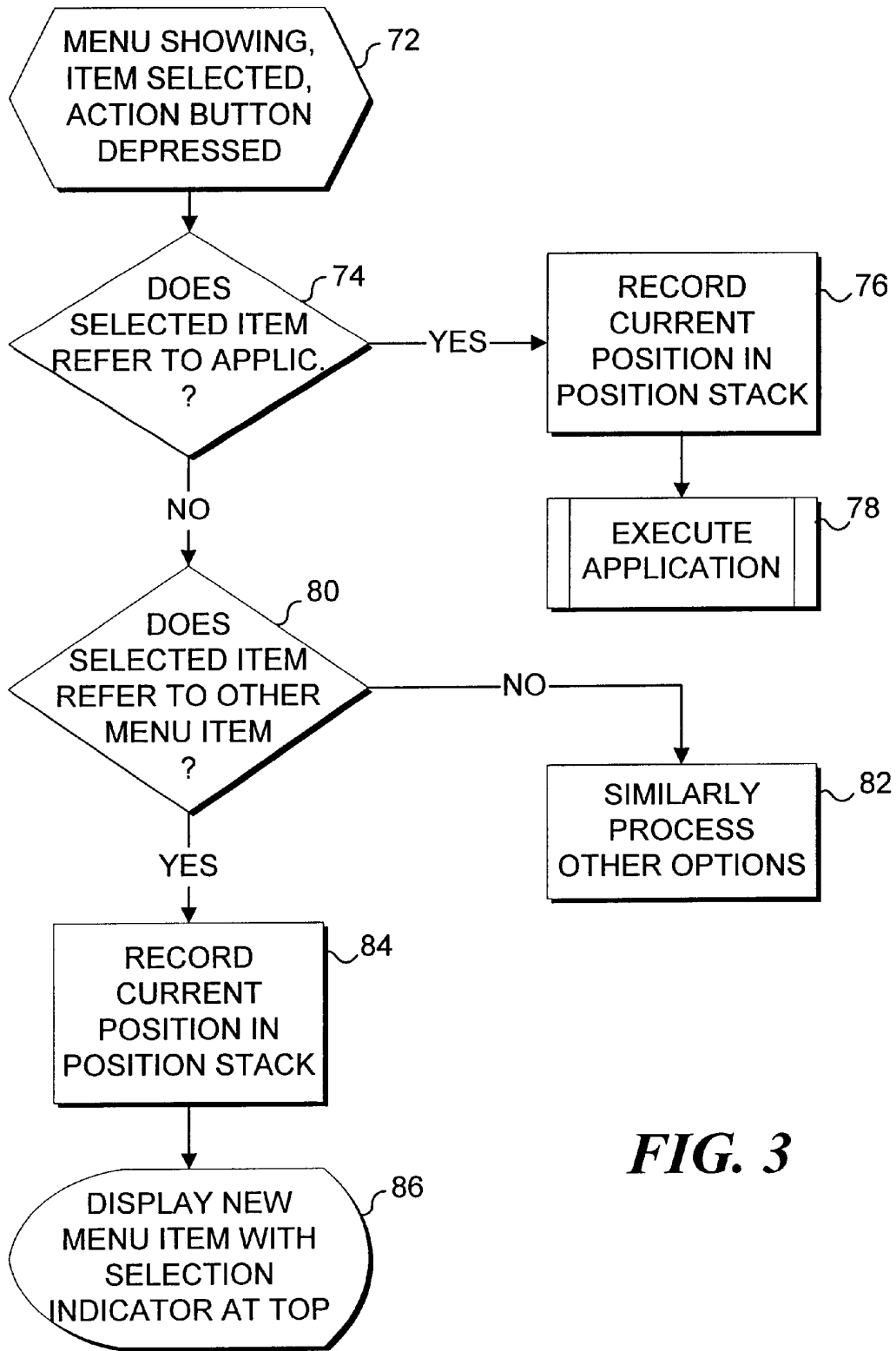


FIG. 3

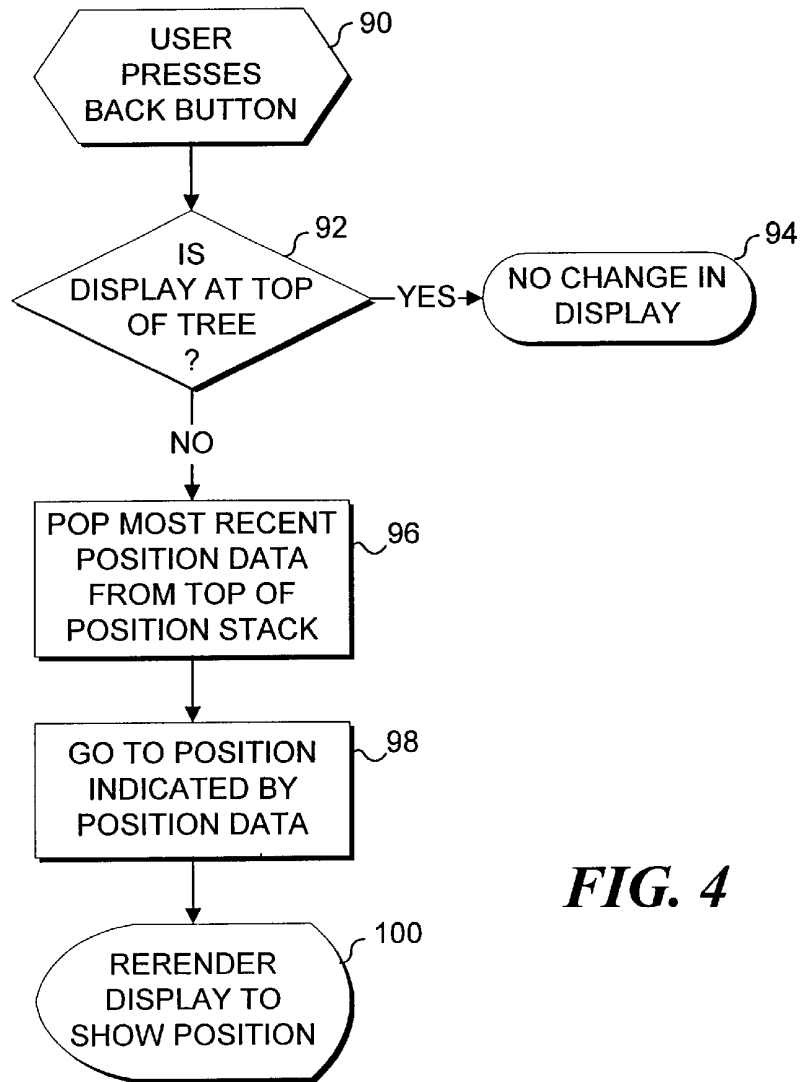


FIG. 4

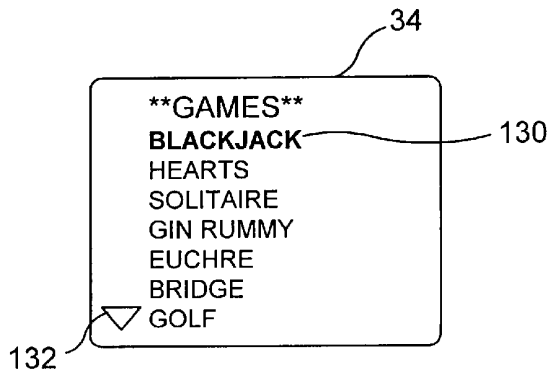


FIG. 6A

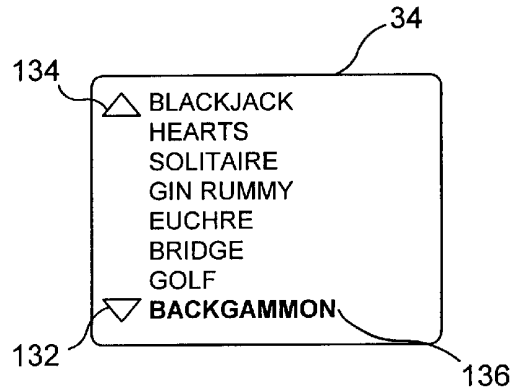


FIG. 6B

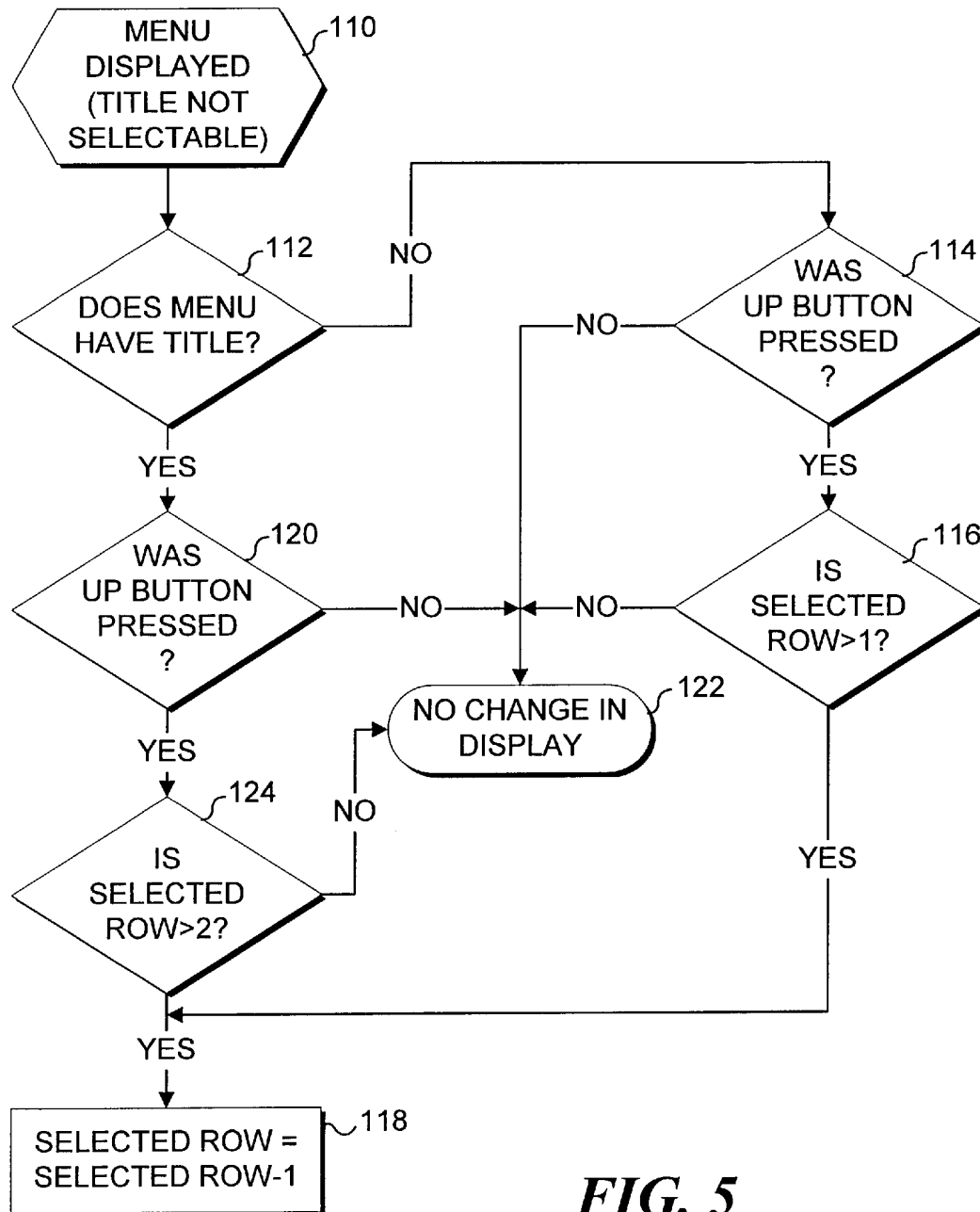


FIG. 5

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