

[54] **METHOD AND APPARATUS FOR DATA ALTERATION BY MANIPULATION OF REPRESENTATIONAL GRAPHS**

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[51] **Int. Cl.⁶** **G06F 15/00**

[52] **U.S. Cl.** **395/140**

[58] **Field of Search** 395/140, 135, 395/133, 155, 161; 345/113, 114

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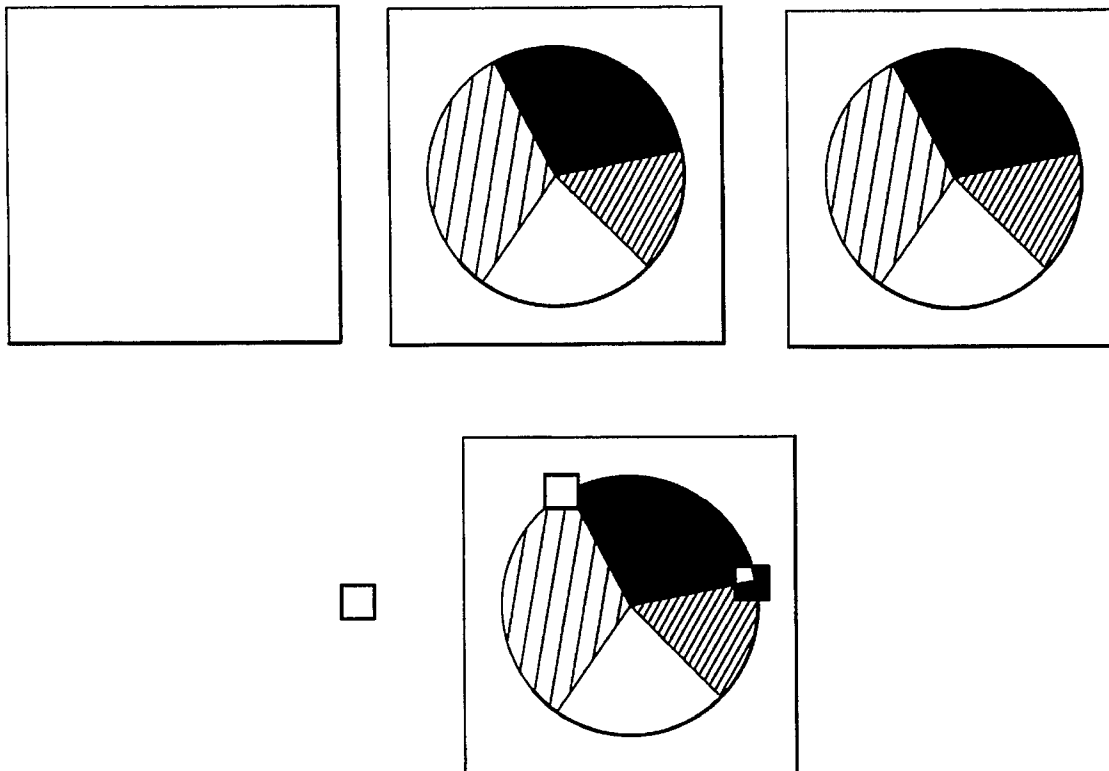
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Attorney, Agent, or Firm—Christensen, O'Connor, Johnson & Kindness PLLC

[57] **ABSTRACT**

A method and apparatus are provided for altering data by manipulation of representational dynamic graphs. Specifically, a method and apparatus are provided for using dynamic graphs wherein the computer user is able to manipulate the graph shape directly, which in turn not only modifies the graph, but also alters the corresponding and underlying tabularized data, as well as any associated numeric representations of the data that may be presented to the computer user. The method and apparatus are provided for use with a computer system having a processing unit, system memory, a user manipulation device, and a video display, wherein a dynamic graph is created having at least one data representation element which may be focused or unfocused. Creation of the dynamic graph includes creating and saving graphical and statistical characteristics of the dynamic graph. Manipulation of a data representation element via the user manipulation device may include reconfiguring the dynamic graph to select a focused data representation element desired to be manipulated. Modification of the dynamic graph according to user manipulation includes altering not only the graphical display, but also the underlying graph data corresponding to the dynamic graph. The method and apparatus thereby provide a simple and easy way for users to alter their data and modify the interrelationship between associated data by intuitive manipulation of representational dynamic graphs.

46 Claims, 36 Drawing Sheets



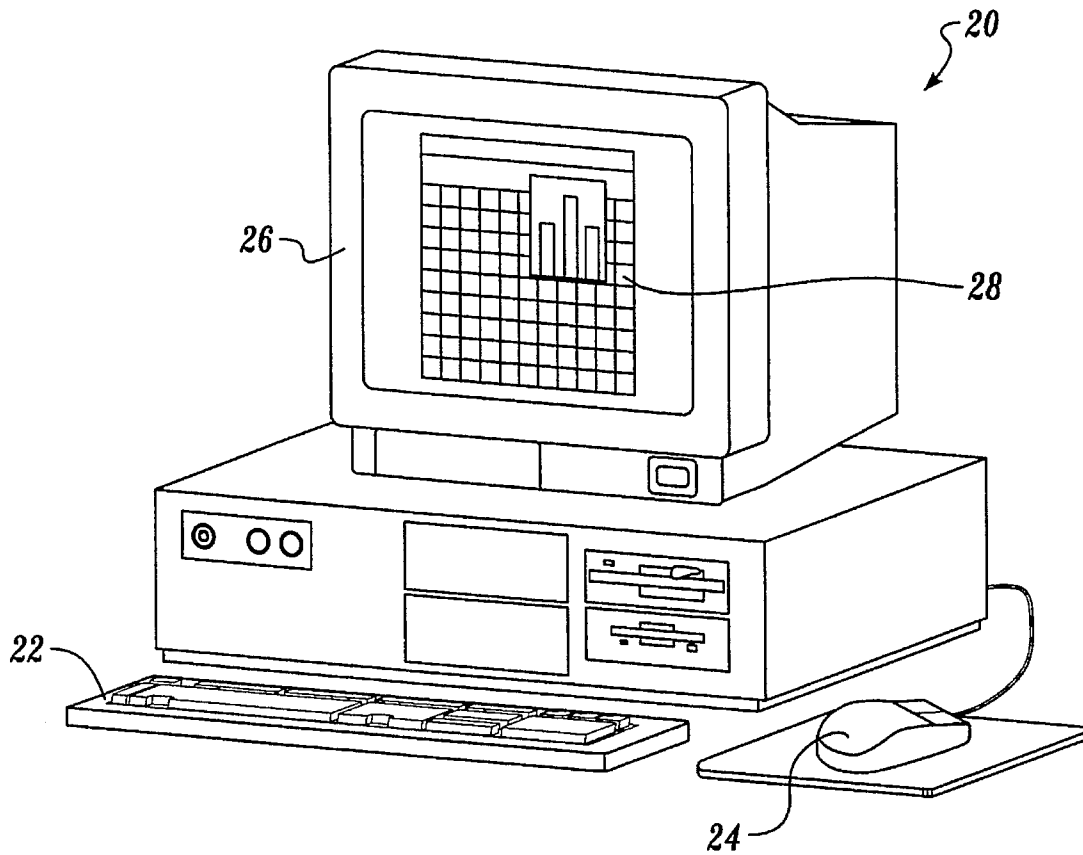


Fig. 1.

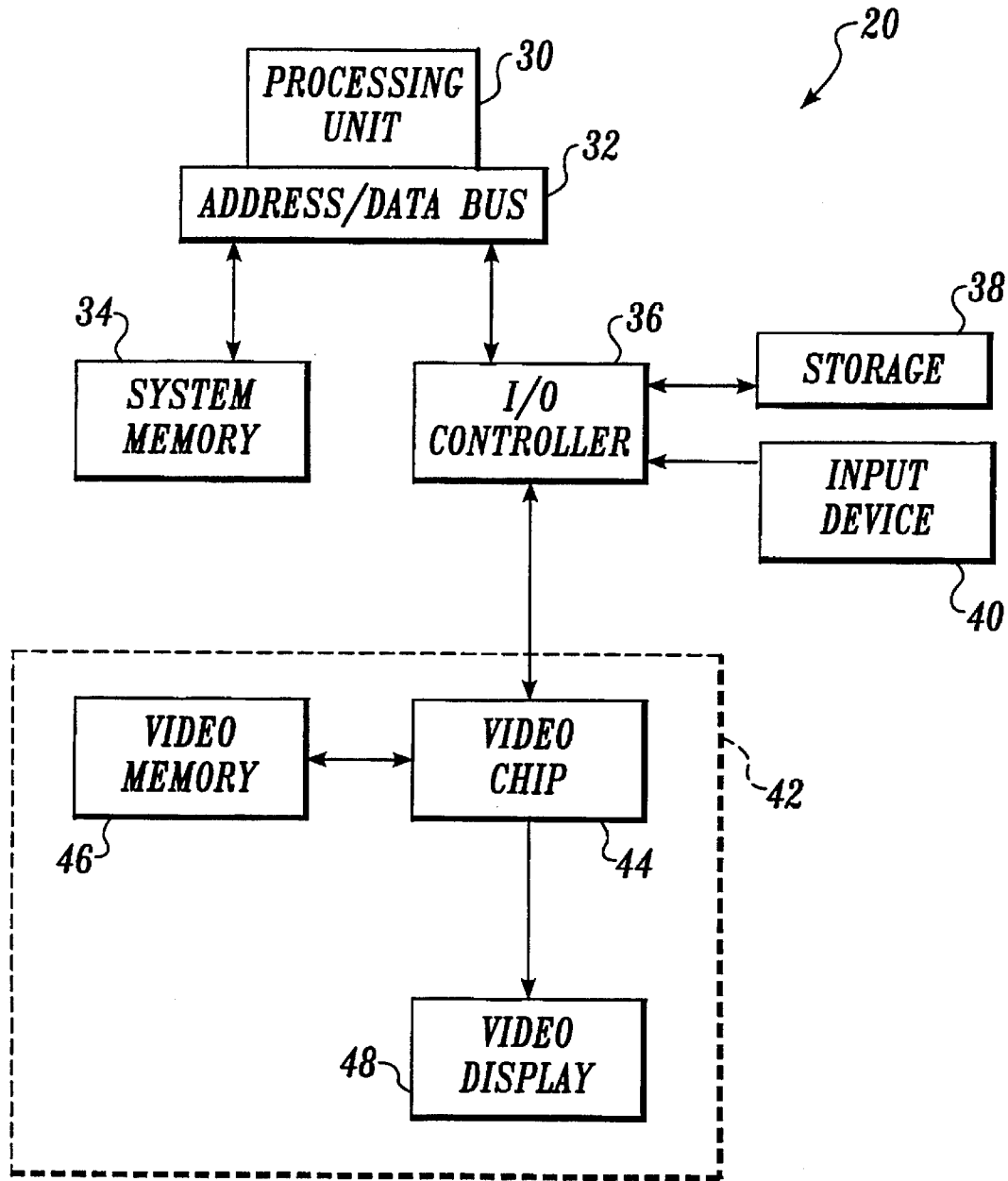


Fig. 2.

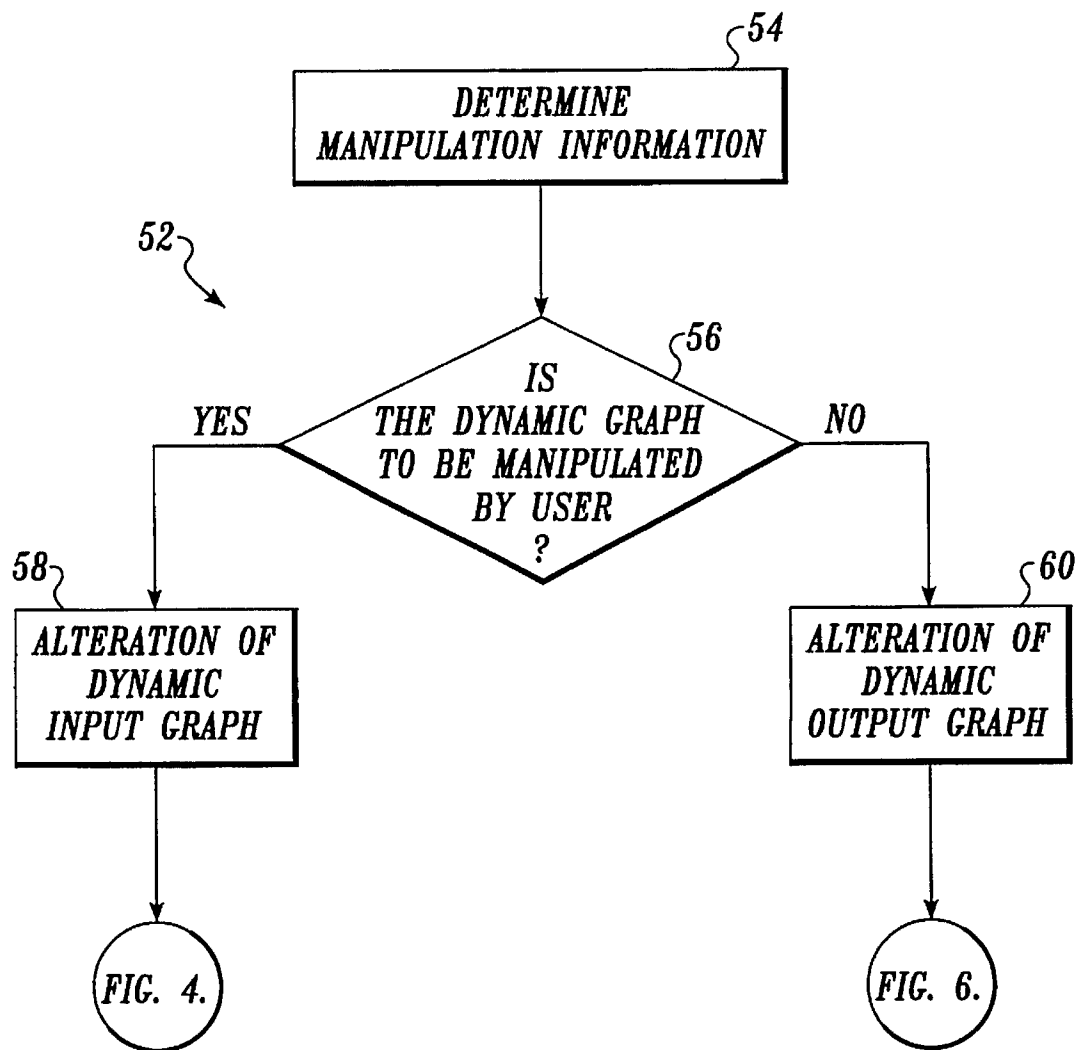


Fig. 3.

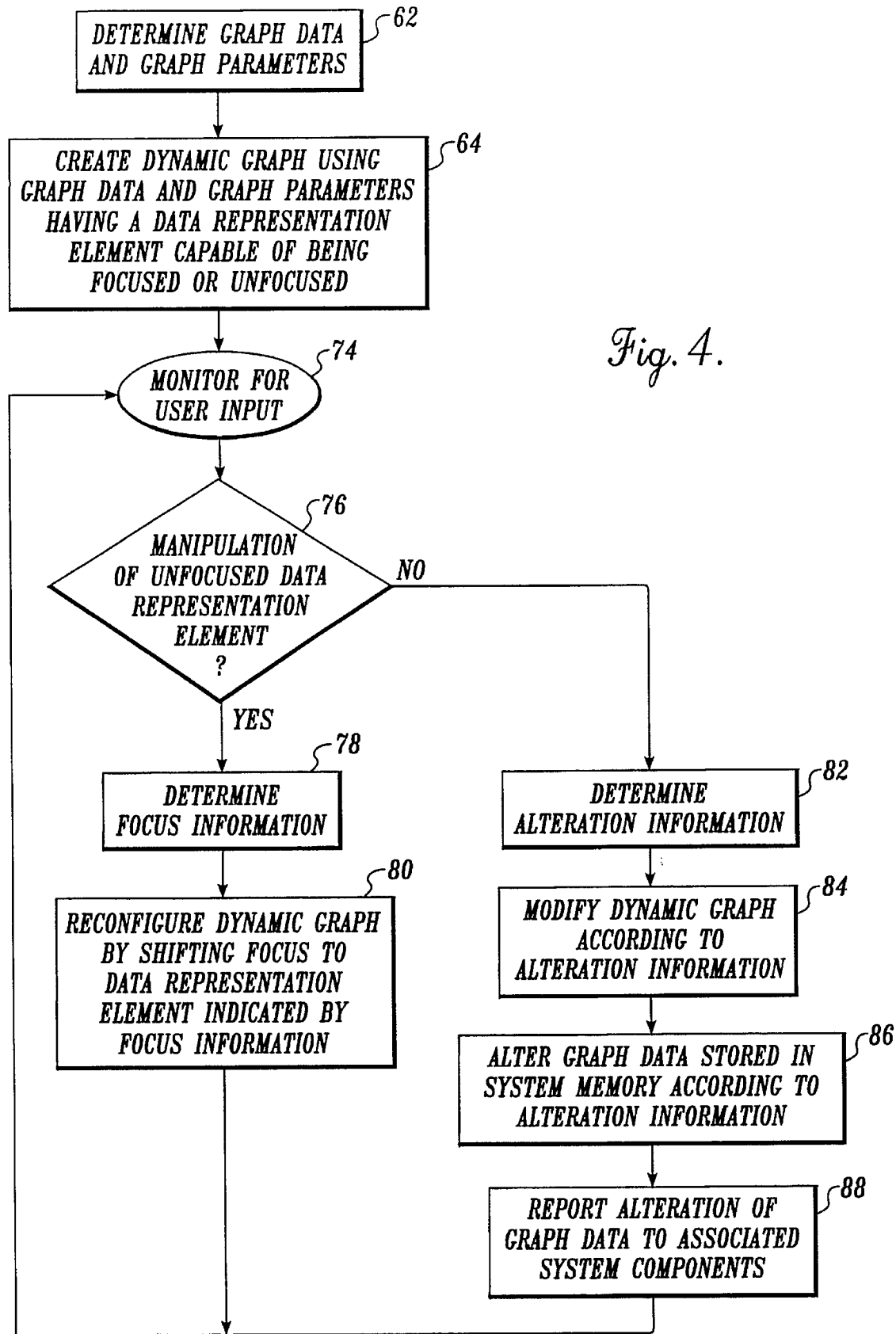


Fig. 4.

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