



- [54] **CHECKING AND ENABLING DATABASE UPDATES WITH A DYNAMIC, MULTI-MODAL, RULE BASED SYSTEM**
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Related U.S. Application Data

- [63] Continuation-in-part of application No. 08/977,018, Nov. 27, 1997, Pat. No. 6,014,657, and a continuation-in-part of application No. 08/976,652, Nov. 24, 1997, Pat. No. 5,953,726, and a continuation-in-part of application No. 08/977,092, Nov. 24, 1997.
- [51] **Int. Cl.⁷** **G06F 17/30**
- [52] **U.S. Cl.** **707/203; 707/200; 707/1; 707/2; 707/4; 709/302**
- [58] **Field of Search** **707/200, 1, 2, 707/203, 4; 709/302**

[57] **ABSTRACT**

Software modules which are not part of a database systems source code is provided for interactively maintaining the semantics of concept hierarchies when concept properties and concept interrelationships are modified. These separate modules include command and rules modules. Each of the commands in the command module are linked to the appropriate rules in the rules module. The rules module is bifurcated into a check section and an action section. If the command does not violate any applicable rule in the rules section, the action section implements the command. If the command violates one or more applicable rules, the action section suggests alternate action. If no suitable action can be found, the action section implements reverse commands to return the database to its unaltered state.

[56] **References Cited**

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19 Claims, 11 Drawing Sheets

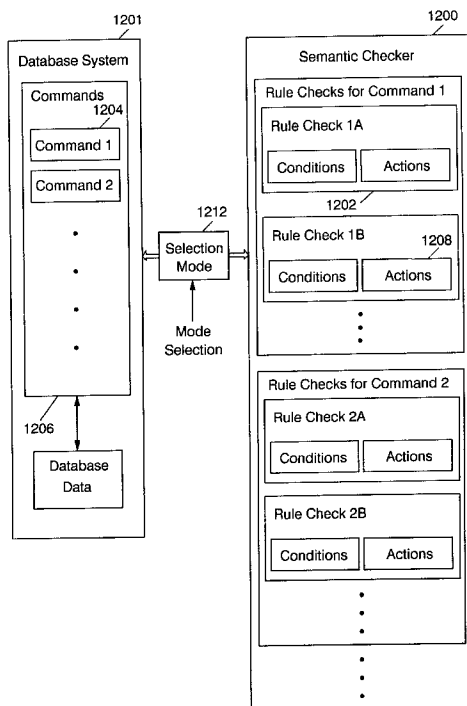


FIG. 1

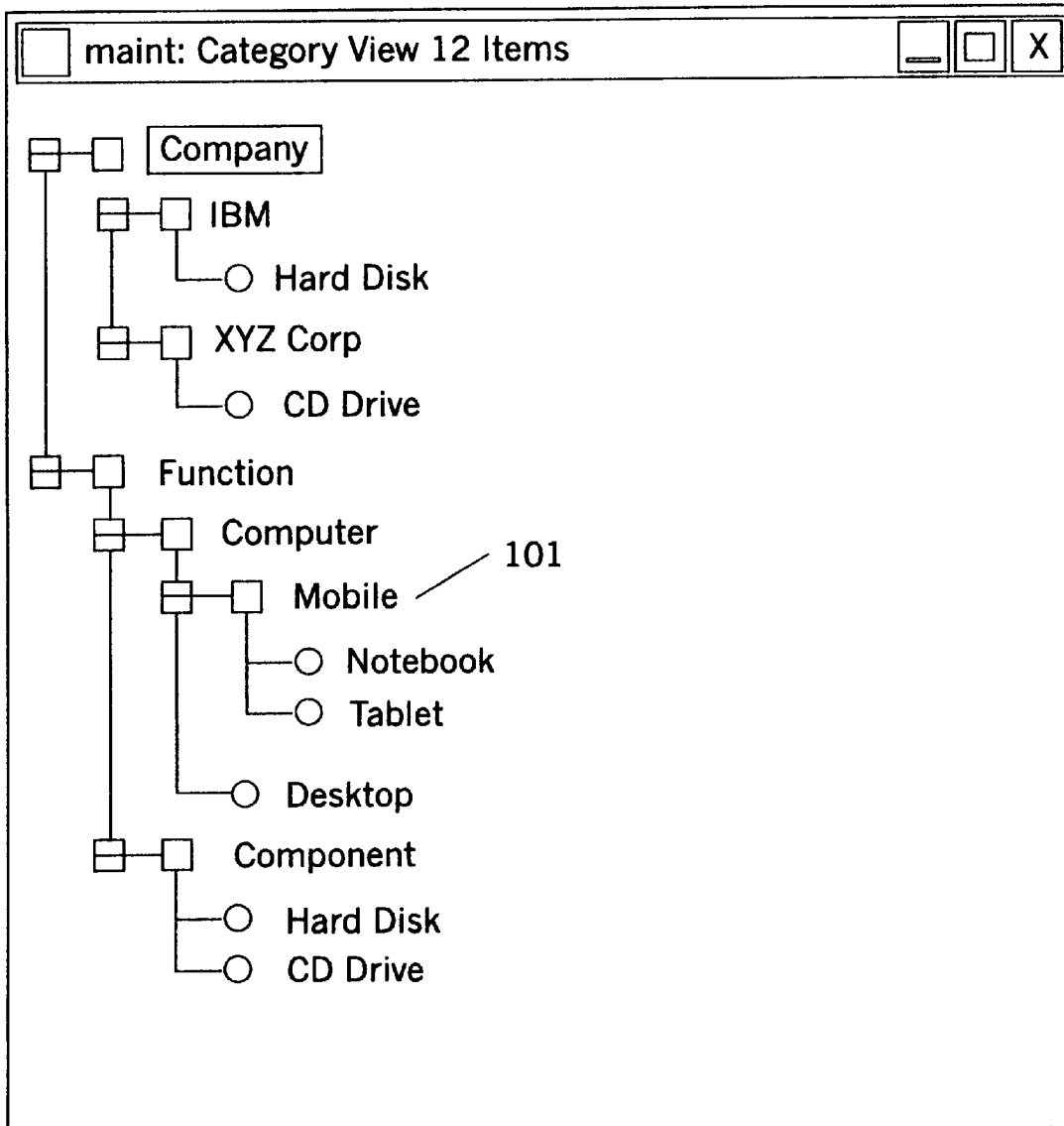
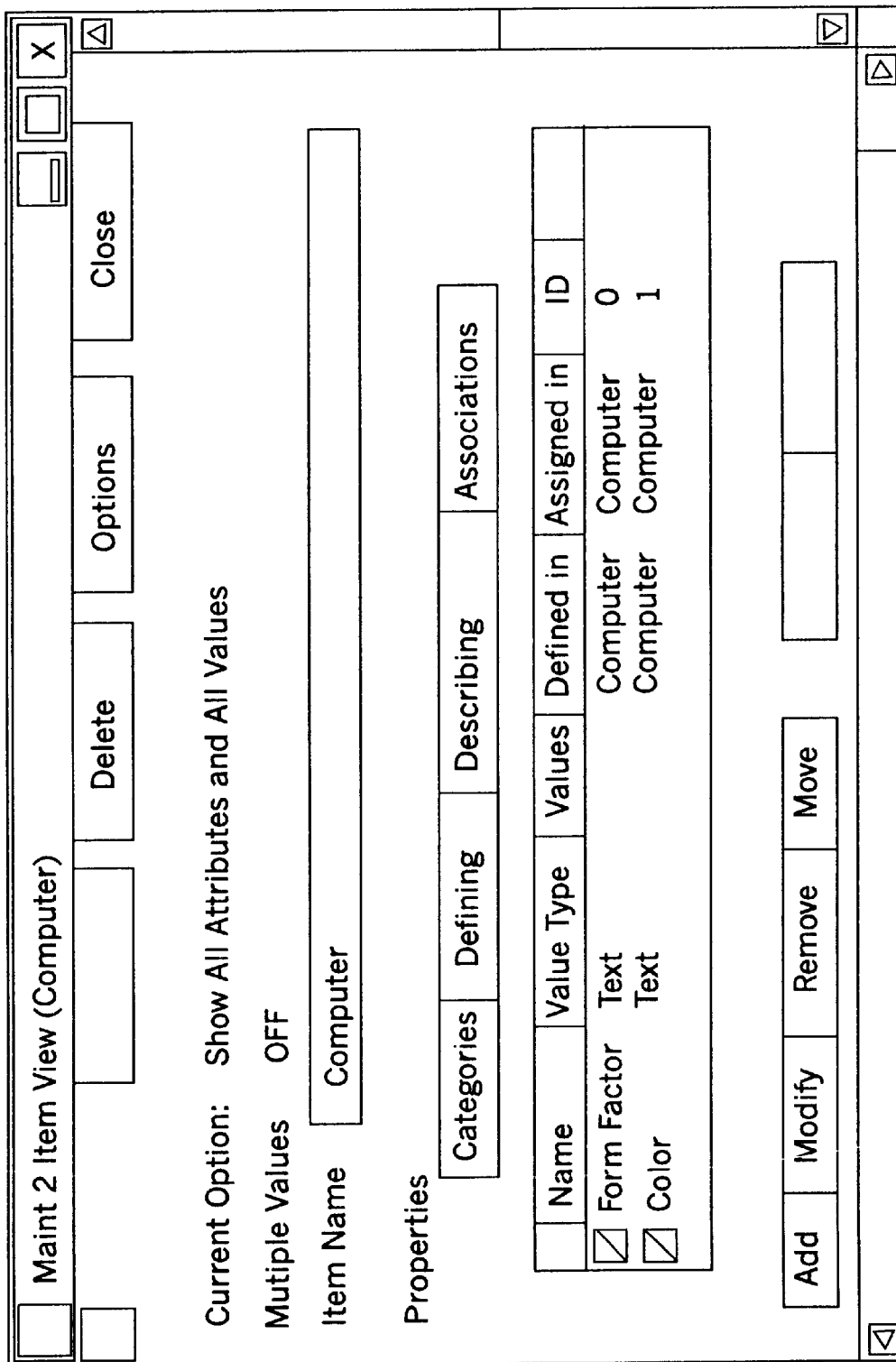


FIG. 2



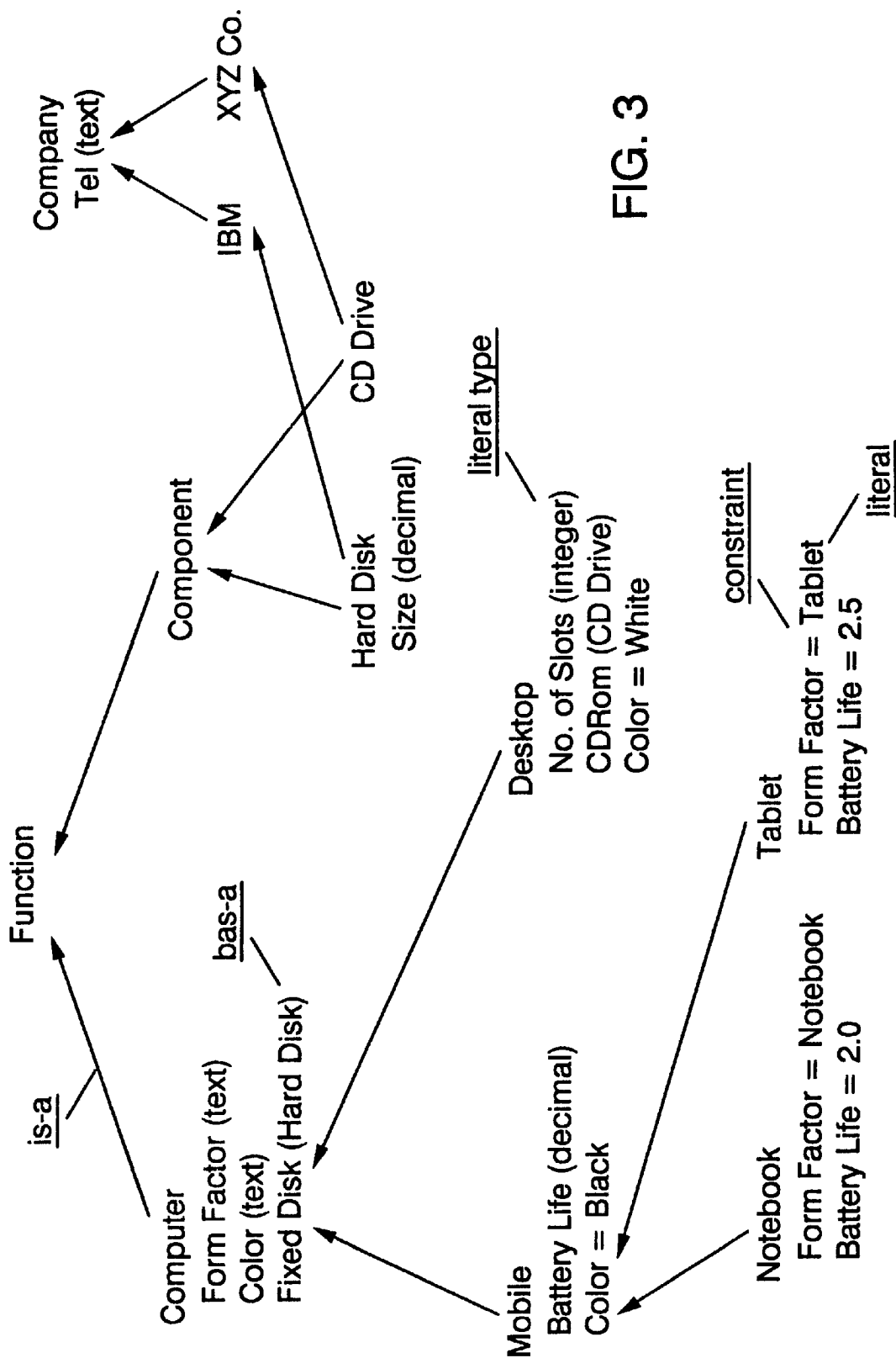
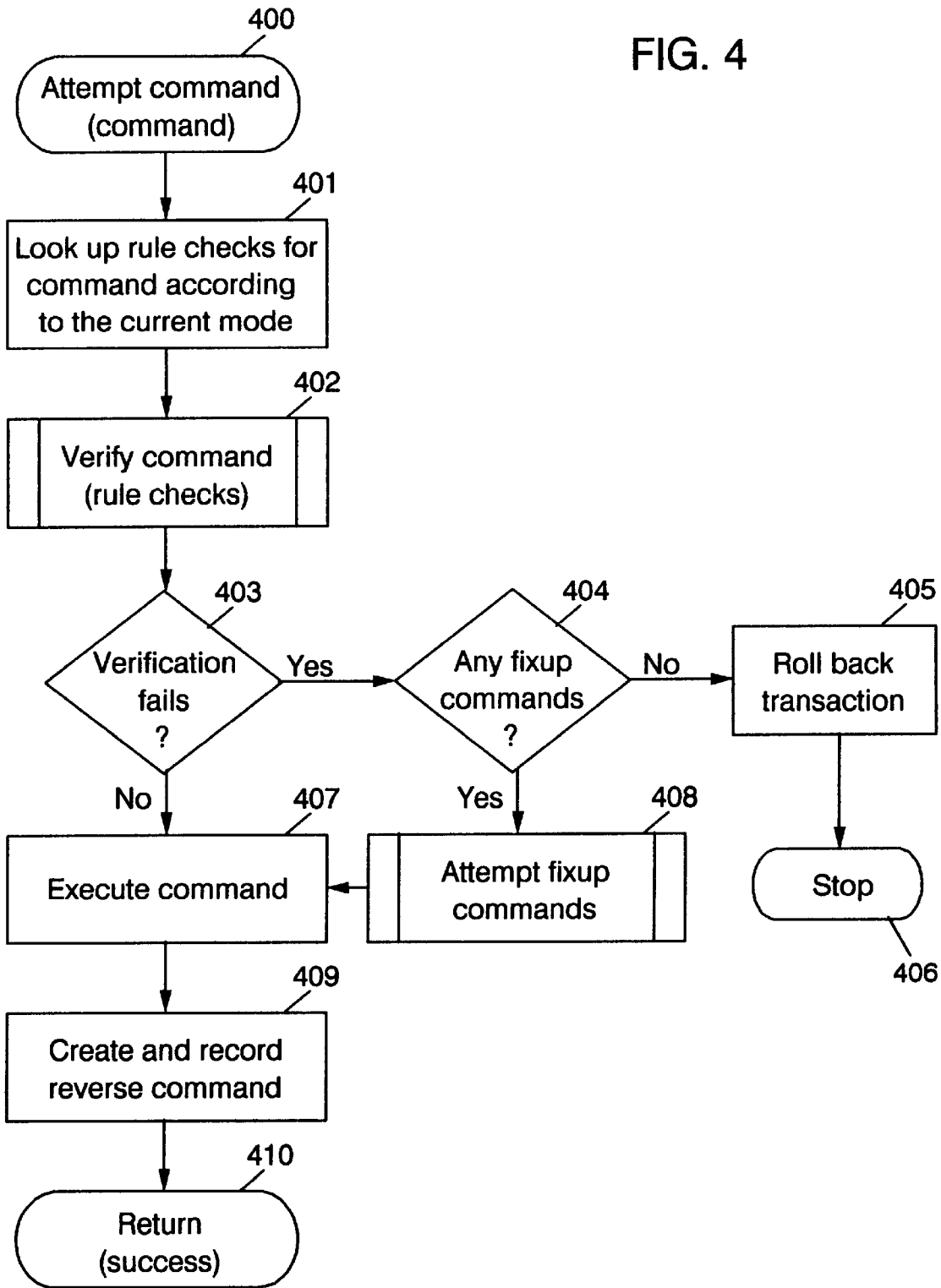


FIG. 3

FIG. 4



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