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# United States Patent [19] Lipkin

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- [54] **METHOD AND APPARATUS FOR IMPLEMENTING DYNAMIC VRML**
- [75] Inventor: **Daniel Lipkin**, Belmont, Calif.
- [73] Assignee: **Oracle Corporation**, Redwood Shores, Calif.
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*Primary Examiner*—Paul R. Lintz  
*Assistant Examiner*—Mark Terry  
*Attorney, Agent, or Firm*—McDermott, Will & Emery

### [57] ABSTRACT

Mechanisms and methods for storing, dynamically reconstructing, and navigating a three-dimensional virtual world using a database are disclosed. A virtual world is described in a source text according to the grammar of a modeling language. The source text is read, parsed, and decomposed into a database schema in which characteristics of the world are represented in database tables. In an embodiment, nodes and fields of the world are associated with database queries. When the world is to be displayed, values in the database schema are recomposed into a source text. The database queries are executed against a database, yielding values, in real time based on the current state of the data in the database, for the nodes associated with the queries. Thus, a large virtual world are efficiently displayed and easily modified, and the size, shape, or other aspects of elements of the virtual world can change as data in the database changes.

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**39 Claims, 10 Drawing Sheets**

