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**De Bellis**

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(54) **SEARCH-ON-THE-FLY WITH MERGE FUNCTION**

(75) Inventor: **Joseph De Bellis**, Southampton, NY (US)

(73) Assignee: **Pedestrian Concepts LLC**, Dover, DE (US)

(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1028 days.

This patent is subject to a terminal disclaimer.

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**Related U.S. Application Data**

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(60) Provisional application No. 60/227,305, filed on Aug. 24, 2000.

(51) **Int. Cl.**  
**G06F 17/30** (2006.01)

(52) **U.S. Cl.** ..... 707/3; 707/104.1; 345/663

(58) **Field of Classification Search** ..... 707/3, 707/4, 7, 10, 102, 104.1; 709/203, 219; 345/663  
See application file for complete search history.

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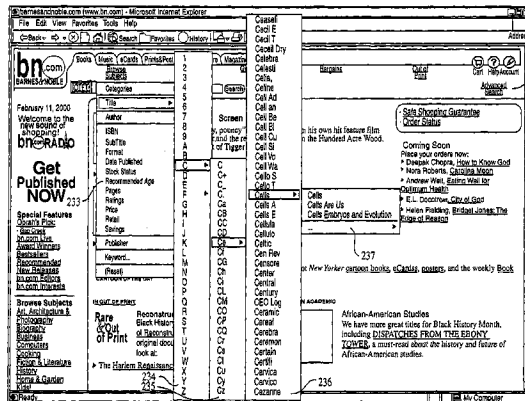
Primary Examiner—Leslie Wong

(74) Attorney, Agent, or Firm—Andrew Kurth LLP

(57) **ABSTRACT**

Sort-on-the-Fly/Search-on-the-Fly data retrieval or analysis provides an intuitive mechanisms for accessing databases, allowing a user to access or obtain information about data in the database without having to know anything about the database structure. A user selects a desired term, and the method or apparatus delivers all instances of the desired term, even if a specific file or table does not contain the instance. The database need not have a specific file (in a flat database) or a table (in a relational database) of names. The user may specify other criteria, or constraints to narrow the search results, or for other reasons. The method or apparatus then conducts further analysis or searching using this criteria and produces a second result. Further narrowing or broadening of the process is permitted, with search-on-the-fly returning results based on any new constraints. If the returned information would be too large to be conveniently displayed at a terminal, the process executes a truncation routine so that the returned data is easily displayed.

**23 Claims, 55 Drawing Sheets**



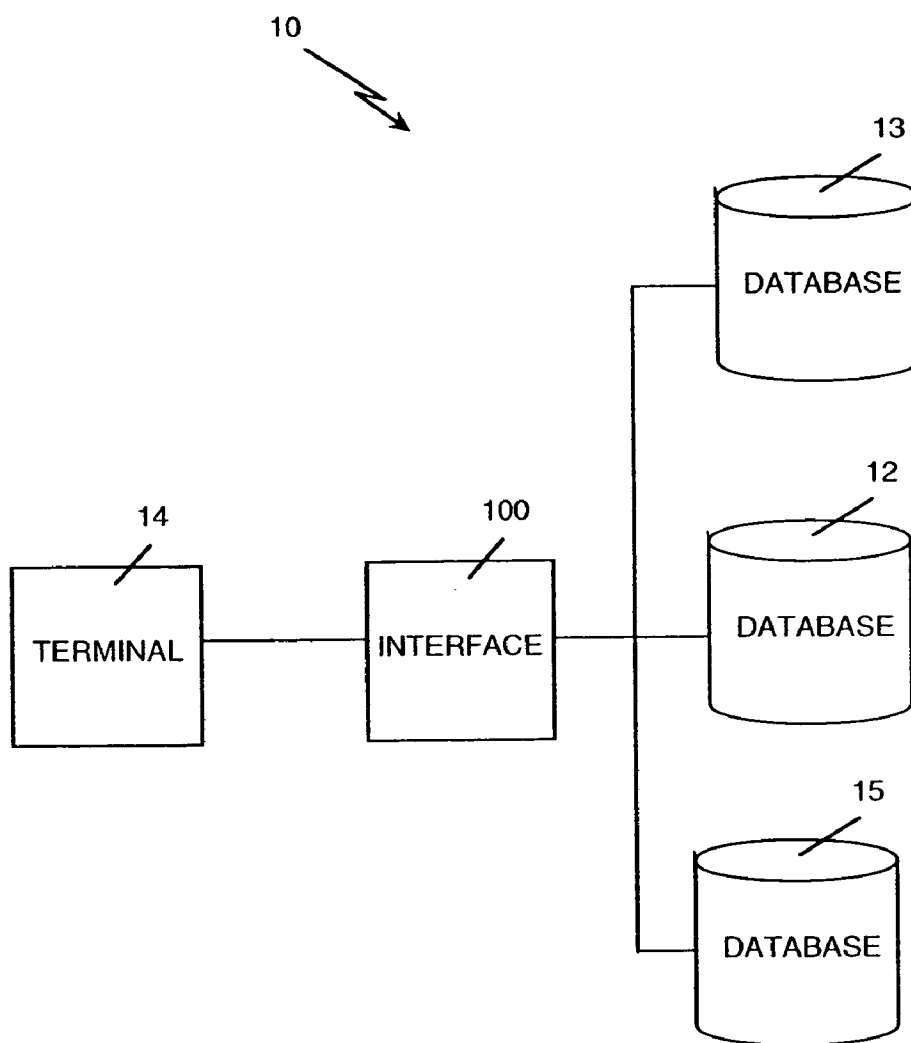


FIG. 1

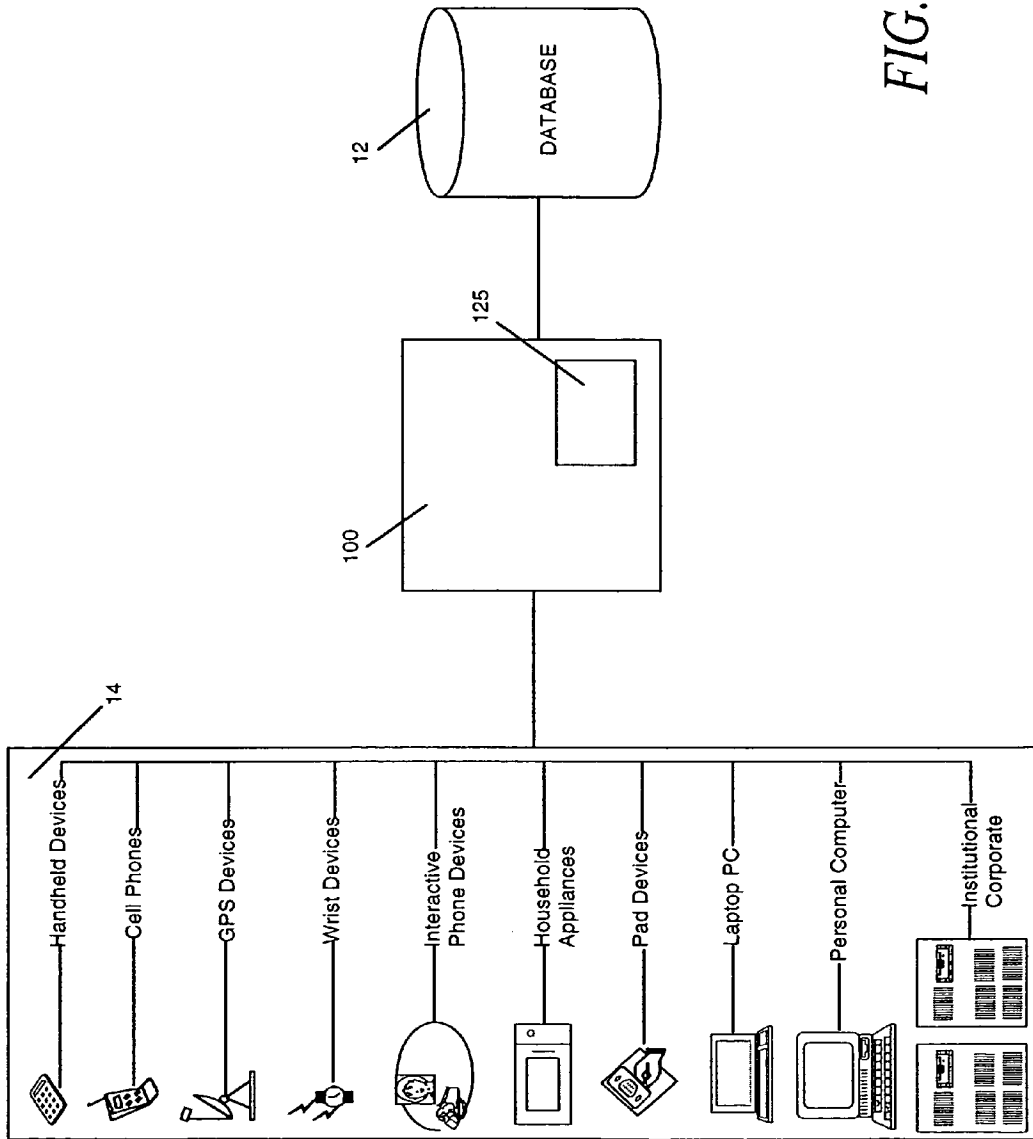


FIG. 2

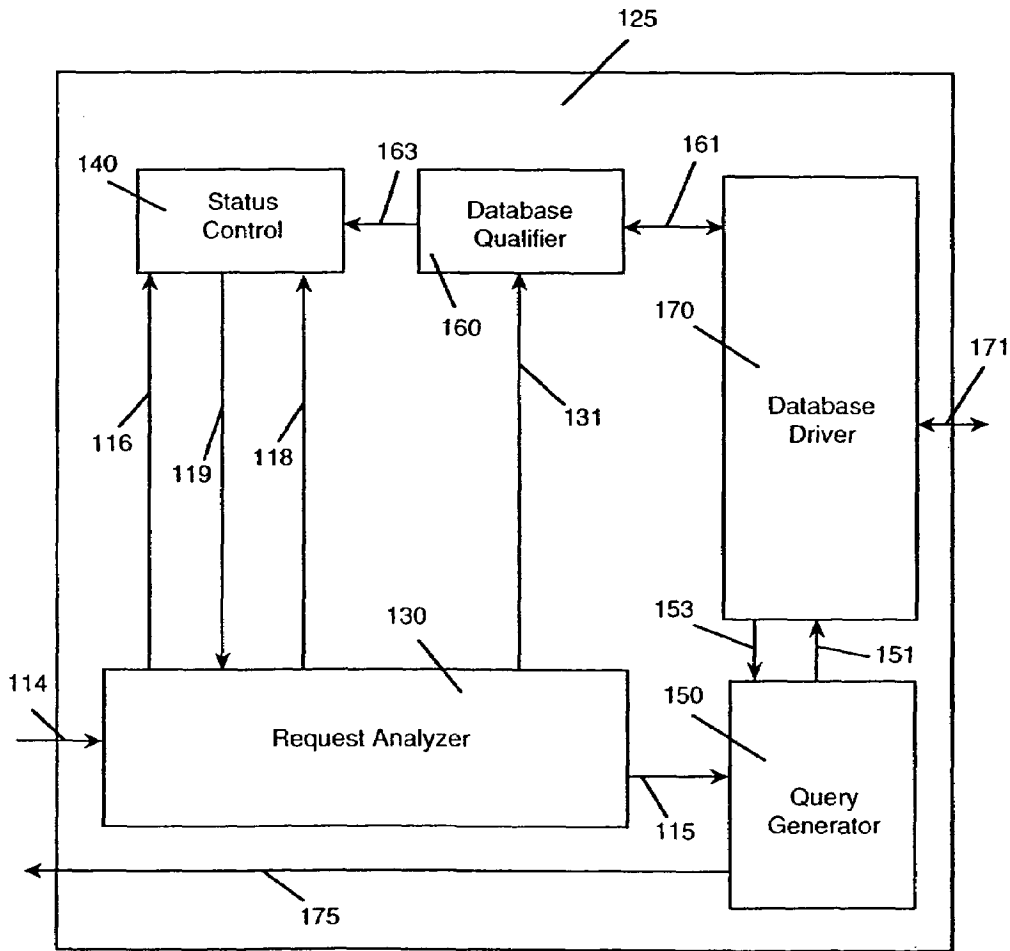


FIG. 3

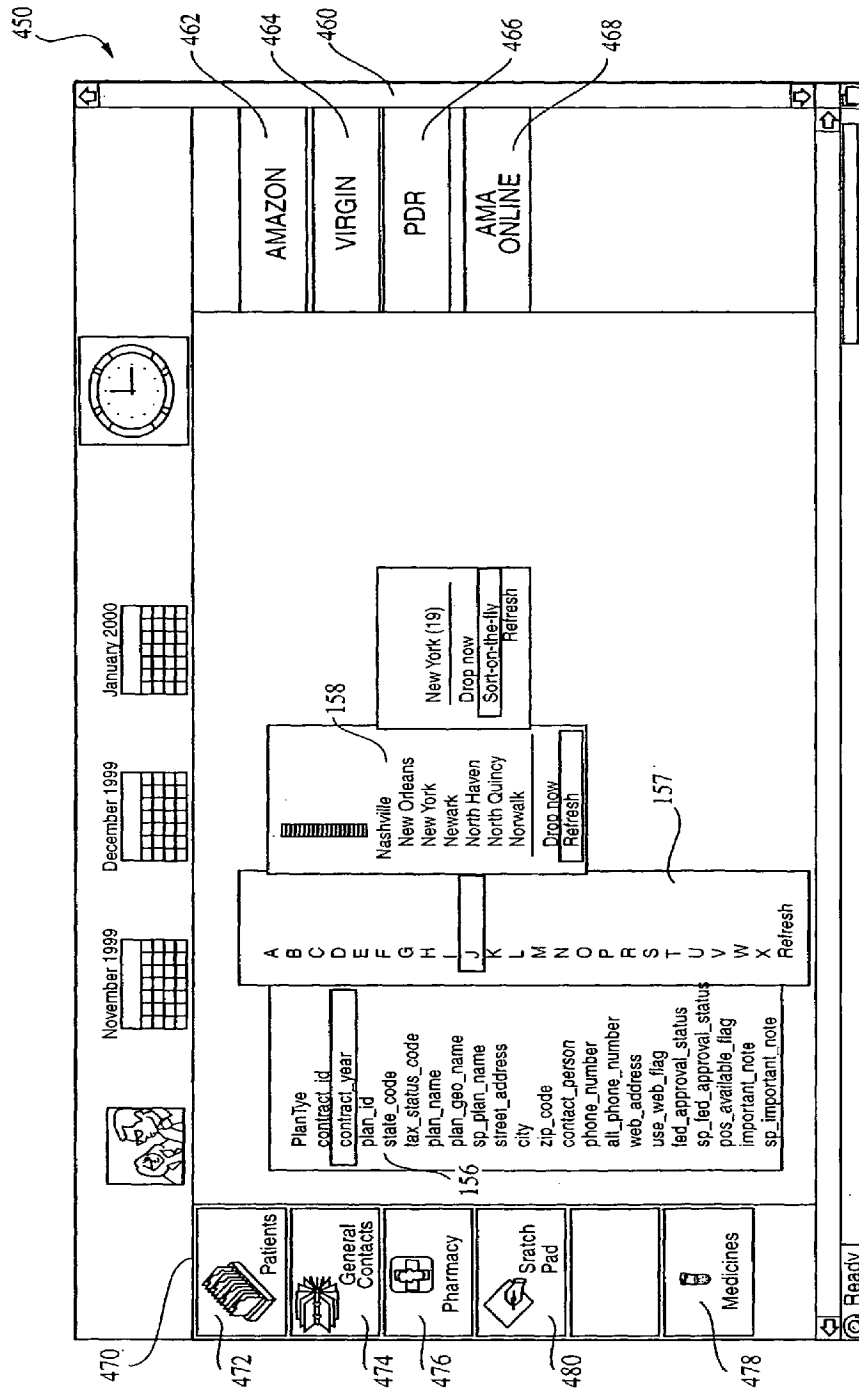


FIG. 4

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