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Chang et al.

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(54) **METHODS FOR INTELLIGENT UNIVERSAL DATABASE SEARCH ENGINES**

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* cited by examiner

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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).

Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(57) **ABSTRACT**

A method and apparatus for processing user-submitted search information to permit a database to be searched regardless of the format and language of the user-submitted information. The user-submitted information is first categorized into one or more categories, where each category is a type of information such as a date, a proper name or a place. For each category pertaining to the user-submitted information, the search is refined by comparing the user-submitted information to a feature table containing specific data types corresponding to each category. From the results of any affirmative comparison with the feature table, a starting location within a corresponding search table is retrieved. The search is further refined by comparing the user-submitted information to the entries of the search table beginning at the starting location. From the results of any affirmative comparison with the search table entries a database address is obtained which is used to obtain a database entry sought after by the user.

(21) Appl. No.: **08/998,955**

(22) Filed: **Dec. 29, 1997**

Related U.S. Application Data

(63) Continuation of application No. 08/998,955, filed on Dec. 29, 1997.

(51) **Int. Cl.**⁷ **G06F 9/00**

(52) **U.S. Cl.** **707/5; 707/4**

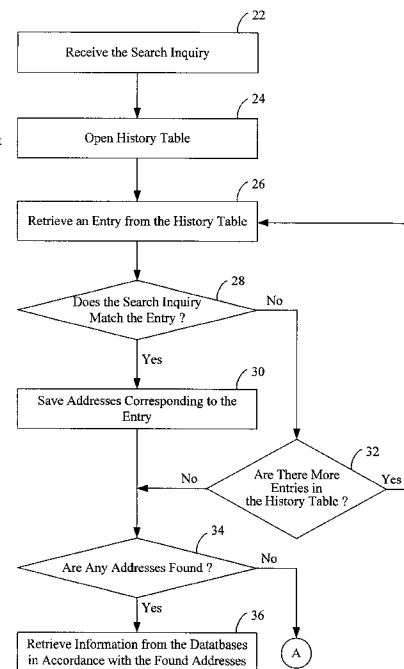
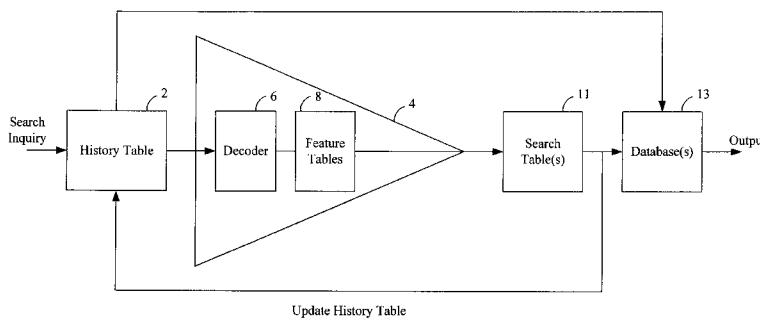
(58) **Field of Search** **707/1-204**

(56) **References Cited**

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21 Claims, 9 Drawing Sheets



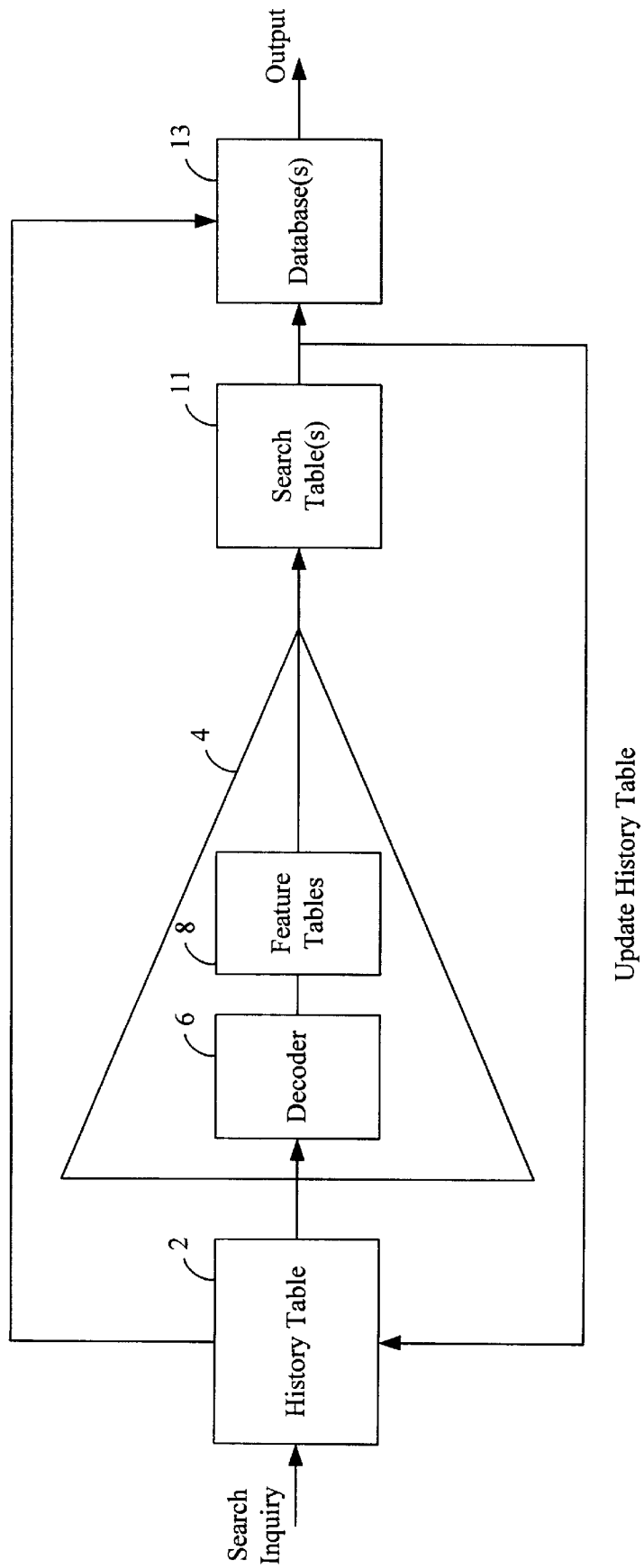


Fig. 1a

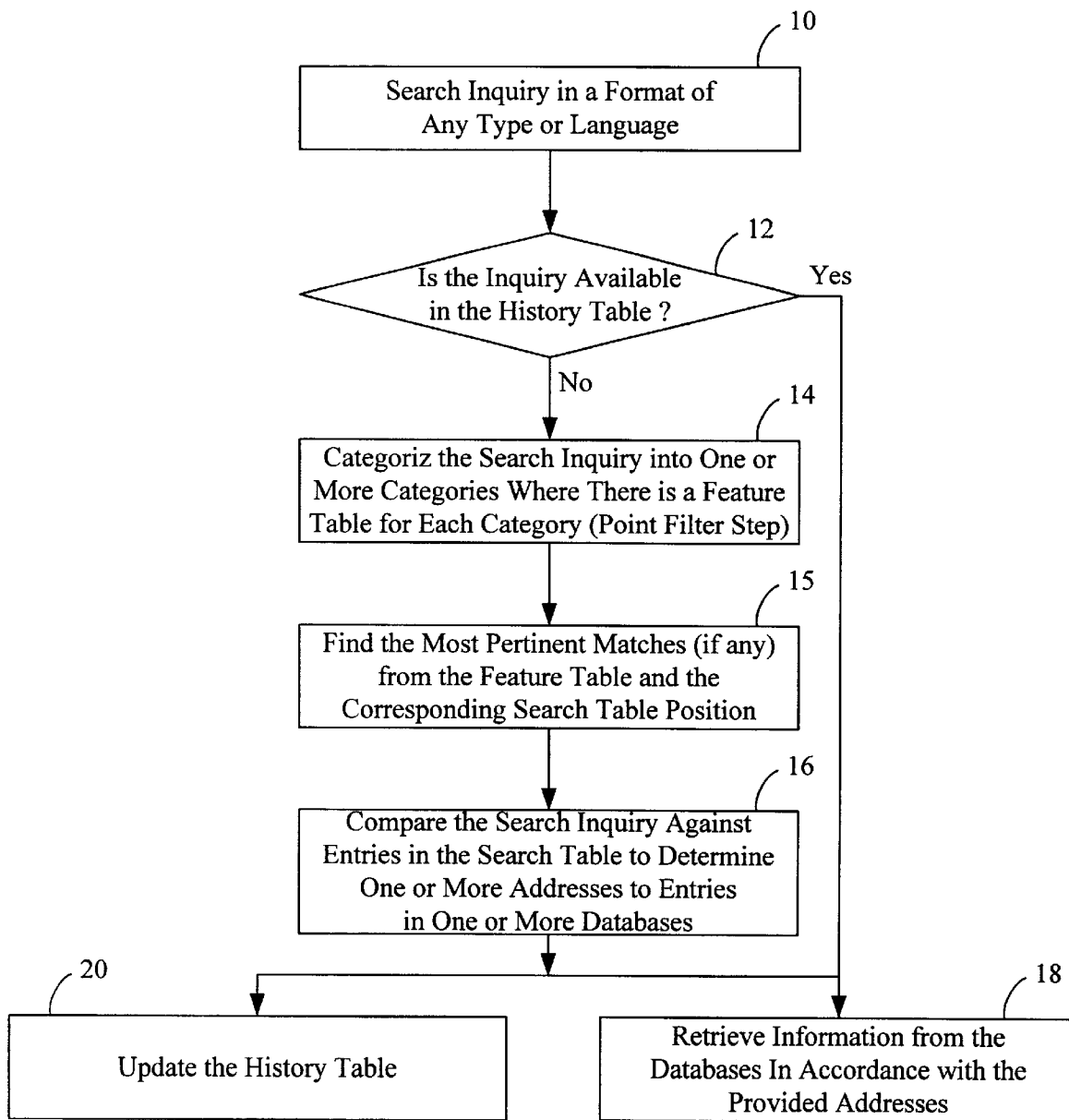


Fig. 1b

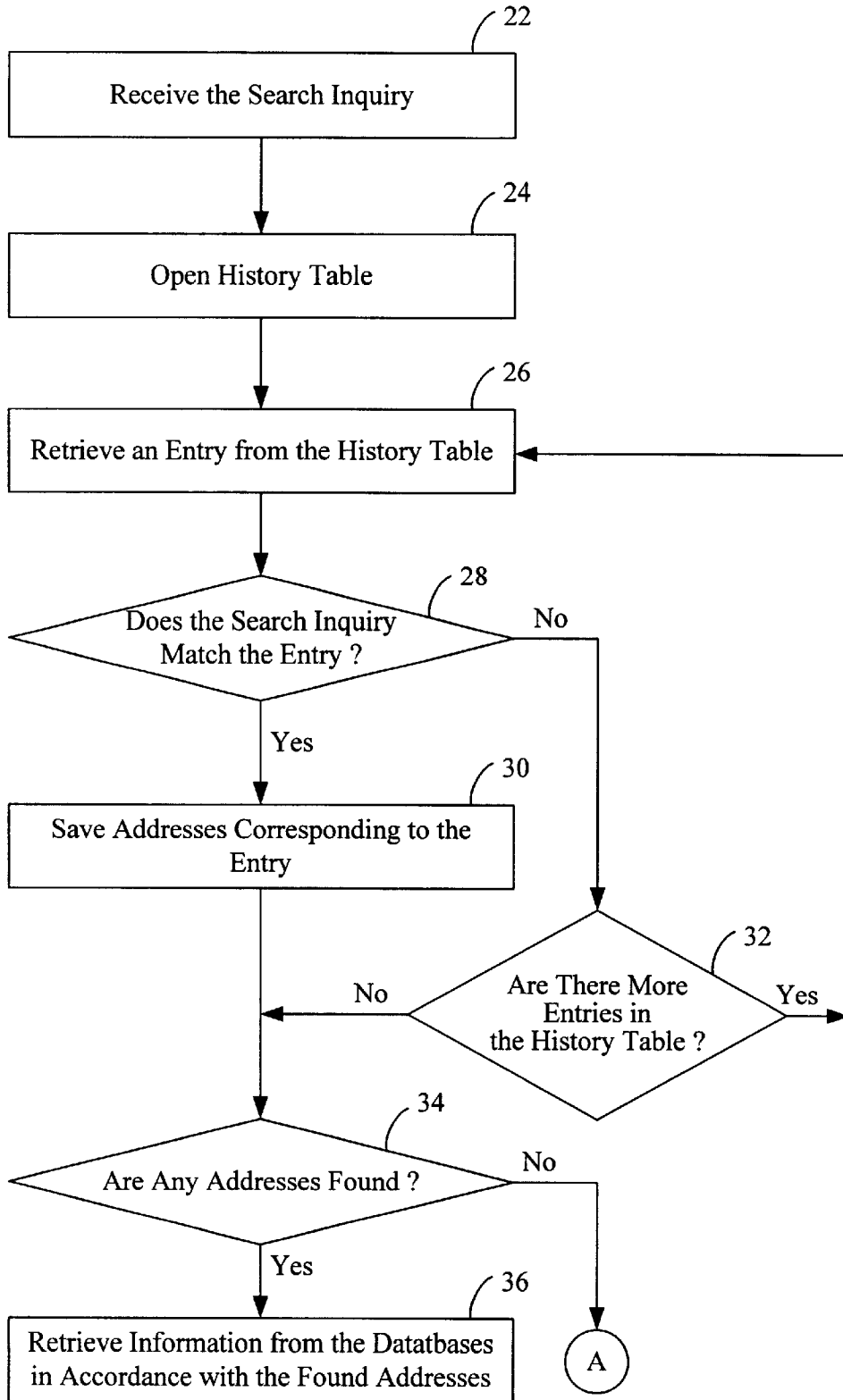


Fig. 2

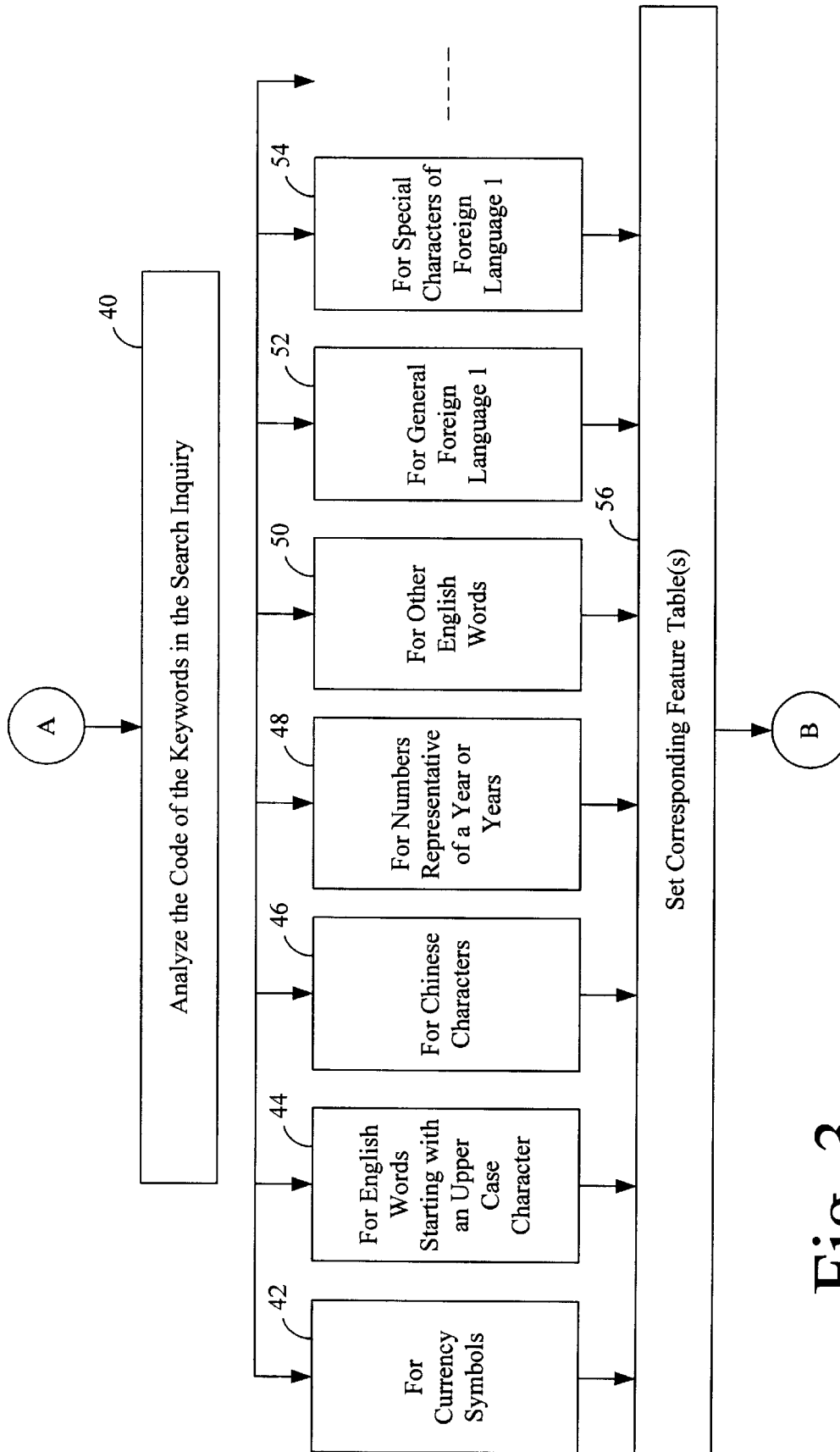


Fig. 3

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