

(12) **United States Patent**
Chong et al.

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- (54) **KEYFACT-BASED TEXT RETRIEVAL SYSTEM, KEYFACT-BASED TEXT INDEX METHOD, AND RETRIEVAL METHOD**
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- (*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

Jun, MiSeon and Se Young Park, "Keyfact-Based Information Retrieval System," International Symposium on Digital Library, pp. 521-524, 1997.

Arampatzis et al., "Phrase-Based Information Retrieval," *Journal of Information Proc. & Management* 34(6):1-19, 1998.

Robert Krovetz and W. Bruce Croft: "Lexical ambiguity and information retrieval", Apr. 1992, ACM, vol. 10, pp. 115-141.*

Michael Sussna: "Word sense disambiguation for free-text indexing using a massive semantic network", 1993, ACM, pp. 67-74.*

(21) Appl. No.: **09/475,743**

(22) Filed: **Dec. 30, 1999**

(30) **Foreign Application Priority Data**

Jun. 28, 1999 (KR) 99-25035

(51) **Int. Cl.**⁷ **G06F 17/30**

(52) **U.S. Cl.** **707/3; 707/5; 707/6; 707/101; 707/201; 704/7; 704/9; 704/10; 382/177; 382/306**

(58) **Field of Search** **707/1, 2, 3, 4, 707/5, 6, 102, 103, 104.1; 706/12, 45, 47; 704/7, 9, 10, 270.1**

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,839,853	A	6/1989	Deerwester et al.	364/900
5,289,375	A *	2/1994	Fukumochi et al. ...	364/419.02
5,535,382	A	7/1996	Ogawa	395/600
5,541,836	A *	7/1996	Church et al.	364/419.07
5,598,557	A *	1/1997	Doner et al.	395/605
5,708,829	A	1/1998	Kadashevich et al.	395/793
5,721,902	A *	2/1998	Schultz	395/604
5,771,378	A *	6/1998	Holt et al.	395/605

OTHER PUBLICATIONS

Jang, Ho Wook and Se Young Park, "Keyfact Concept For An Information Retrieval System," Proceedings of Natural Language Proc. Pacific Rim Symposium, pp. 510-513, 1995.

* cited by examiner

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(57) **ABSTRACT**

A keyfact-based text retrieval method and a keyfact-based text index method that describes the formalized concept of a document by a pair comprising an object that is the head and a property that is the modifier and uses the information described by the pairs as index information for efficient document retrieval. A keyfact-based text retrieval system includes keyfact extracting, keyfact indexing, and keyfact retrieving. The keyfact extracting analyzes a document collection and a query and extracts keywords and keyfacts. The keywords do not have part-of-speech ambiguity and the keyfacts are extracted from the keywords. The keyfact indexing calculates the frequency of the keyfacts and generates a keyfact list of the document collection for a keyfact index structure. The keyfact retrieving receive a keyfact of the query and keyfacts of the document collection and defines a keyfact-based retrieval model in consideration of a weight factor of the keyfact pattern and generates a retrieval result. The retrieval result is a document similar to the query.

12 Claims, 5 Drawing Sheets

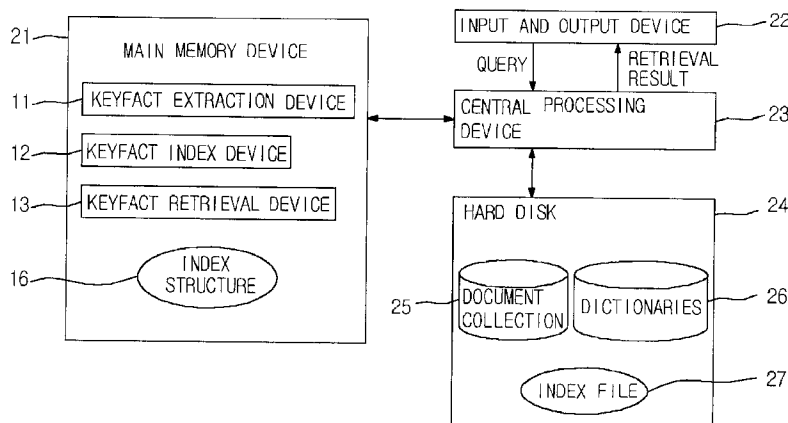


FIG. 1

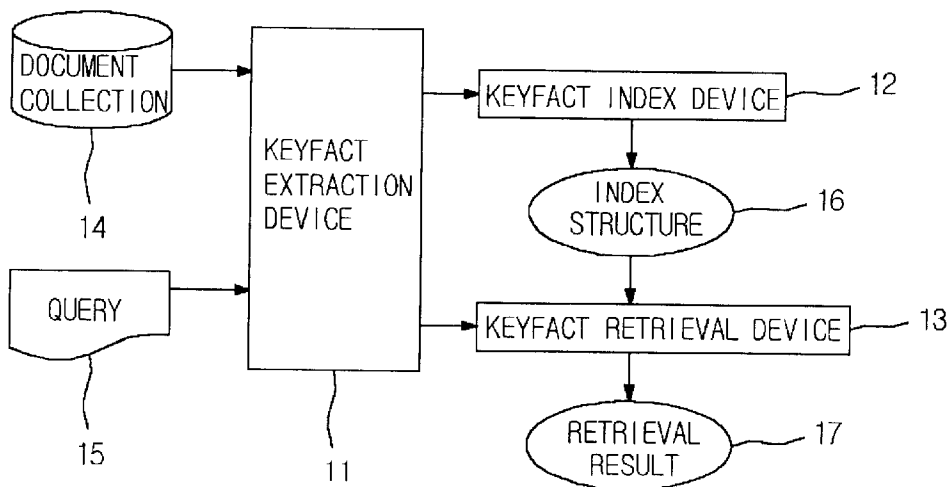


FIG. 2

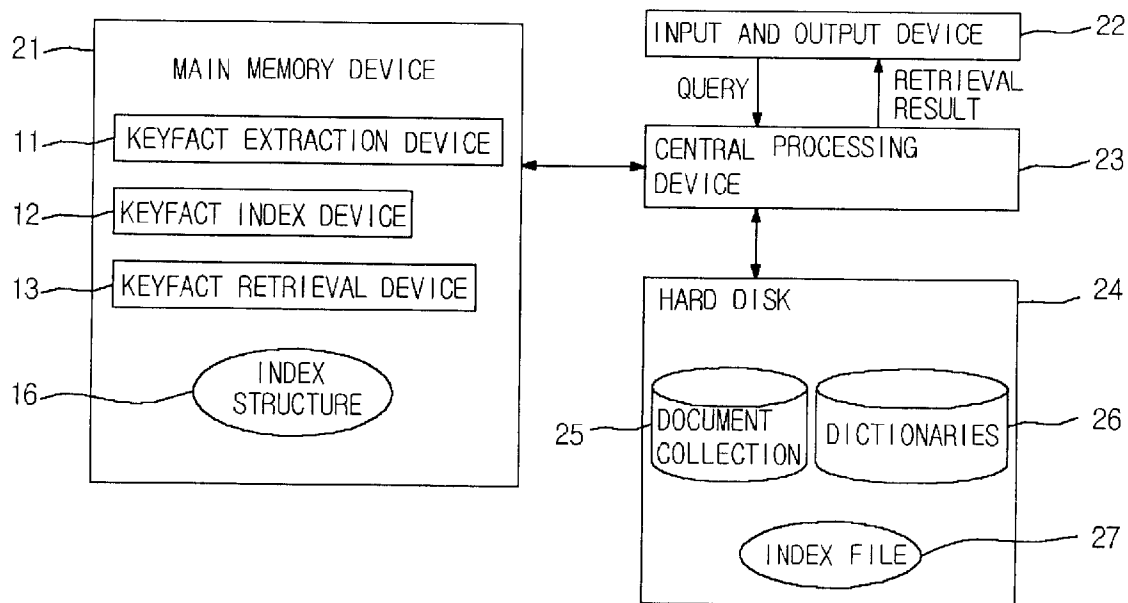


FIG. 3

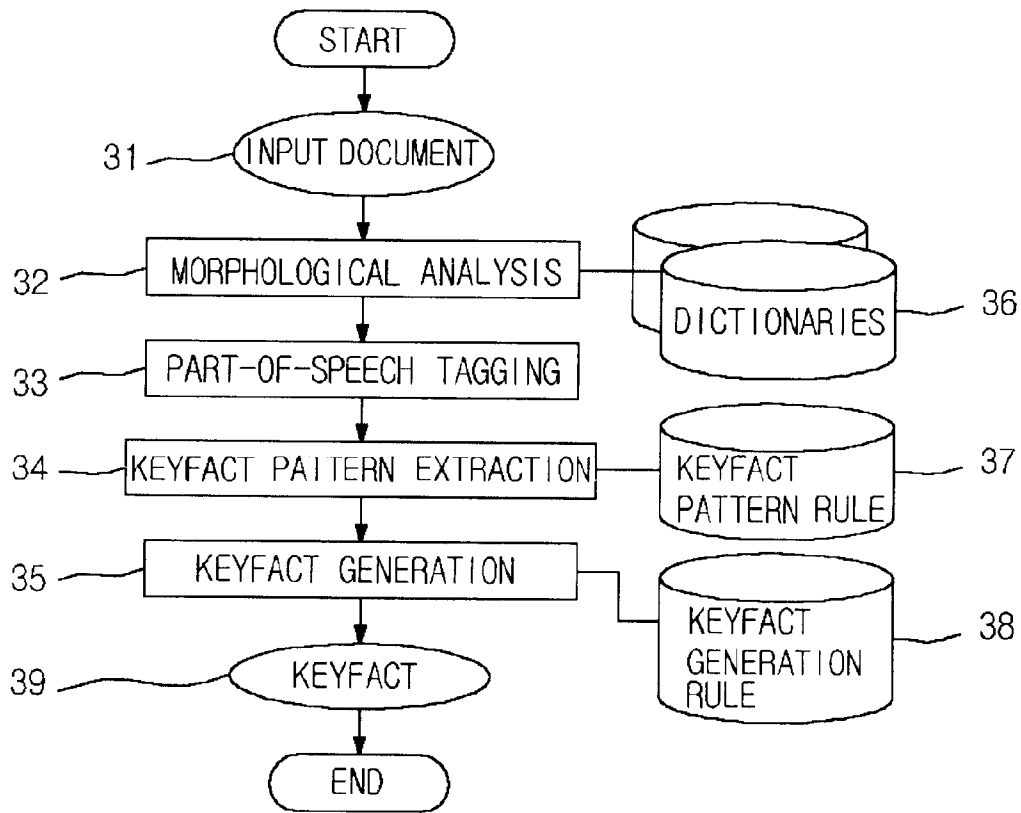


FIG. 4

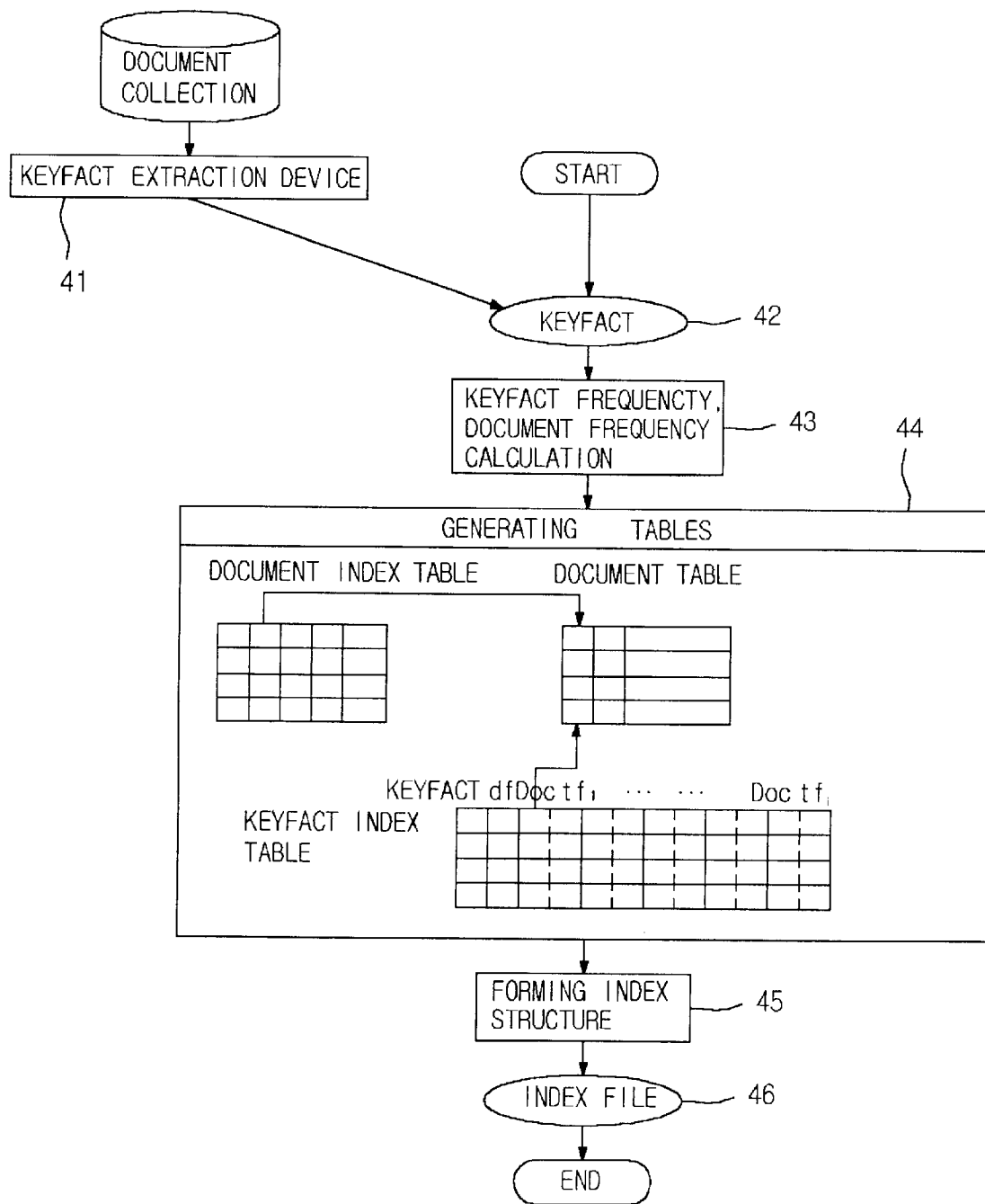
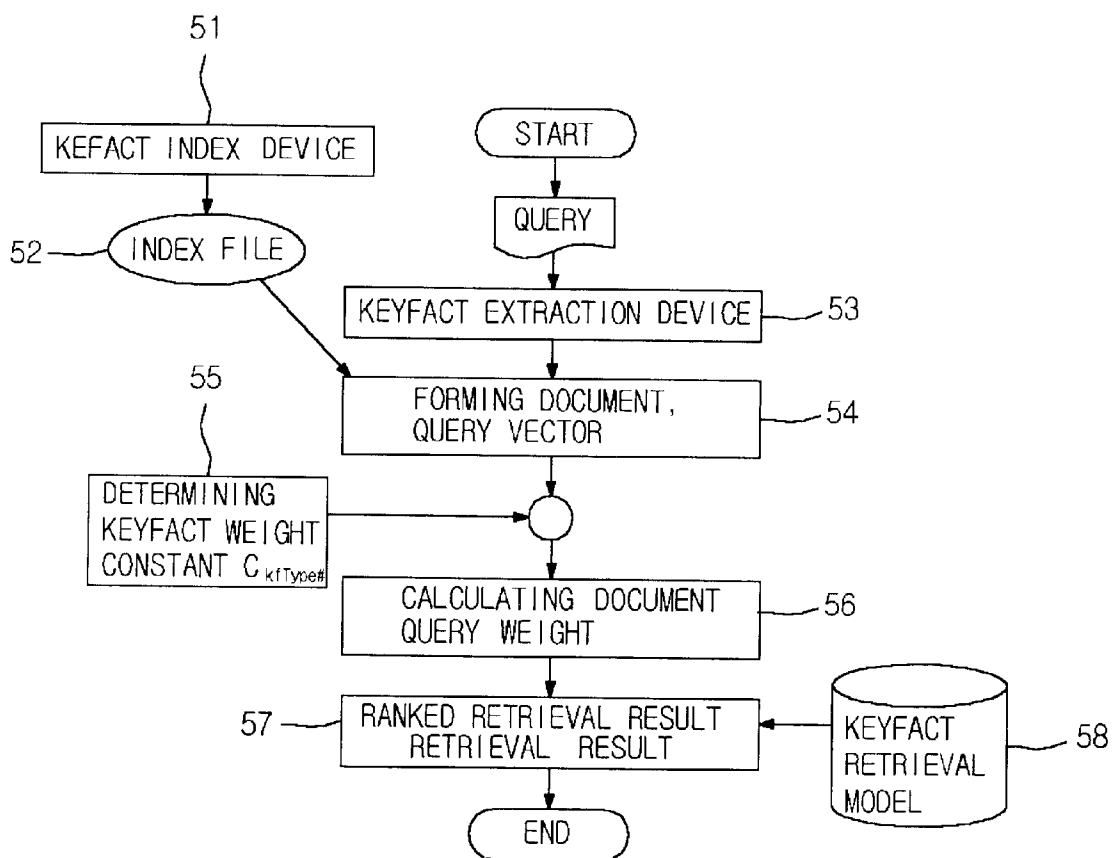


FIG. 5



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