United States Patent [19]

Goldhor et al.

[11] **Patent Number:** 5,231,670

[45] **Date of Patent:** Jul. 27, 1993

[54] **VOICE CONTROLLED SYSTEM AND METHOD FOR GENERATING TEXT FROM A VOICE CONTROLLED INPUT**

[75] Inventors: **Richard S. Goldhor**, Belmont; **John F. Dooley**, Reading; **Christopher N. Hume**, Belmont; **James P. Lerner**, Newton; **Brian D. Wilson**, Holliston, all of Mass.

[73] Assignee: **Kurzweil Applied Intelligence, Inc.,** Waltham, Mass.

[21] Appl. No.: **855,461**

[22] Filed: **Mar. 19, 1992**

Related U.S. Application Data

[63] Continuation of Ser. No. 57,332, Jun. 1, 1987, abandoned.

[51] Int. Cl.⁵ **G10L 5/00**

[51] Int. Cl.^{5} **G10L 5/00**

[52] U.S. Cl. **381/43**; 395/2

[58] Field of Search 381/43–46; 395/2

[56] **References Cited**

U.S. PATENT DOCUMENTS

3,418,429	12/1968	Clapper .
3,846,586	11/1974	Griggs .
3,989,897	11/1976	Carver .
4,144,582	3/1979	Hyatt 381/44
4,435,617	3/1984	Griggs 381/44
4,468,804	8/1984	Kates et al. .
4,507,750	3/1985	Frantz et al. .
4,520,501	5/1985	DuBrucq .
4,545,065	10/1985	Visser .
4,630,304	12/1986	Borth et al. .
4,661,915	4/1987	Ott 381/44
4,829,576	5/1989	Porter 381/44

Primary Examiner—Emanuel S. Kemeny
Attorney, Agent, or Firm—Henry D. Pahl, Jr.

[57] **ABSTRACT**

Disclosed is a system and method for generating text from a voice input that divides the processing of each speech event into a dictation event and a text event. Each dictation event handles the processing of data relating to the input into the system, and each text event deals with the generation of text from the inputted voice signals. In order to easily distinguish the dictation events from each other and text events from each other the system and method creates a data structure for storing certain information relating to each individual event. Such data structures enable the system and method to process both simple spoken words as well as spoken commands and to provide the necessary text generation in response to the spoken words or to execute an appropriate function in response to a command. Speech recognition includes the ability to distinguish between dictation text and commands.
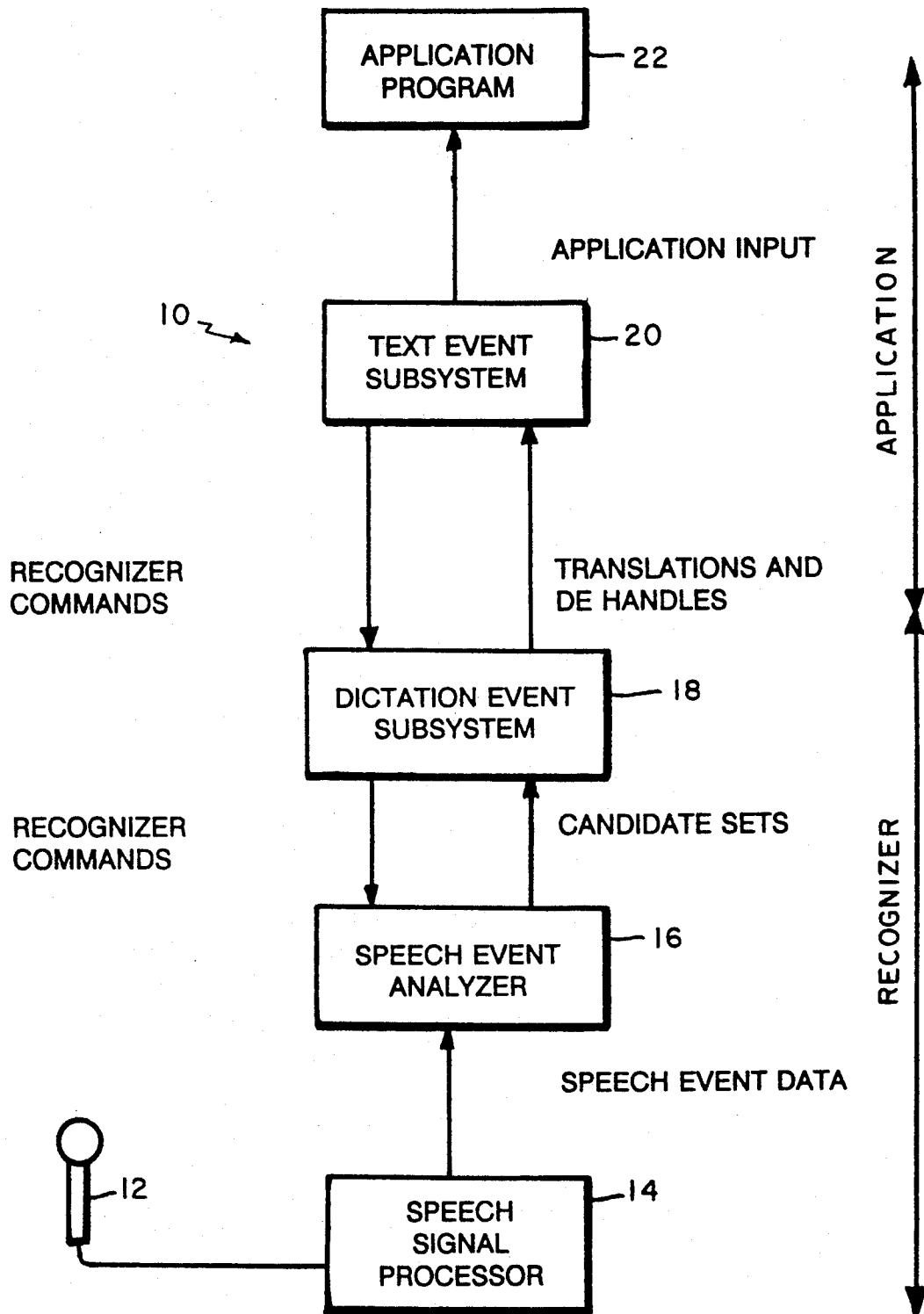
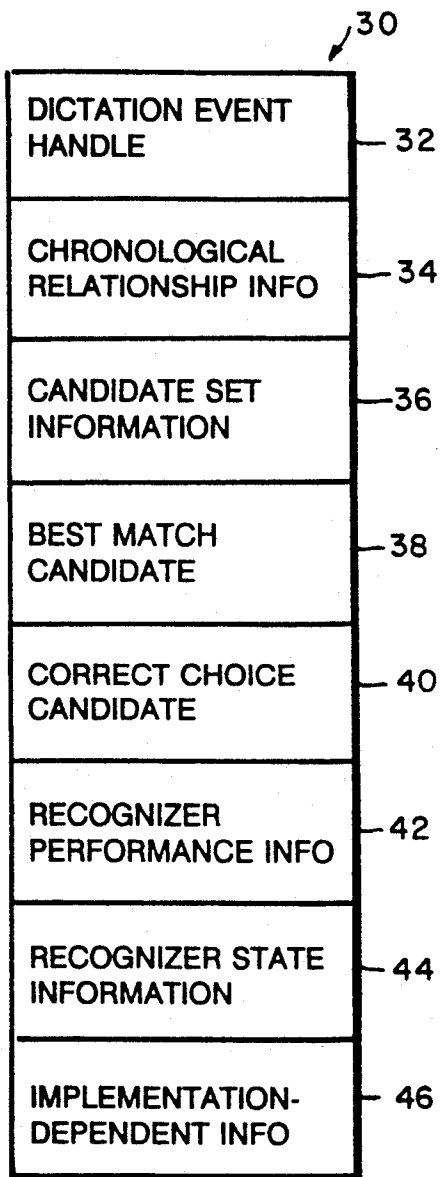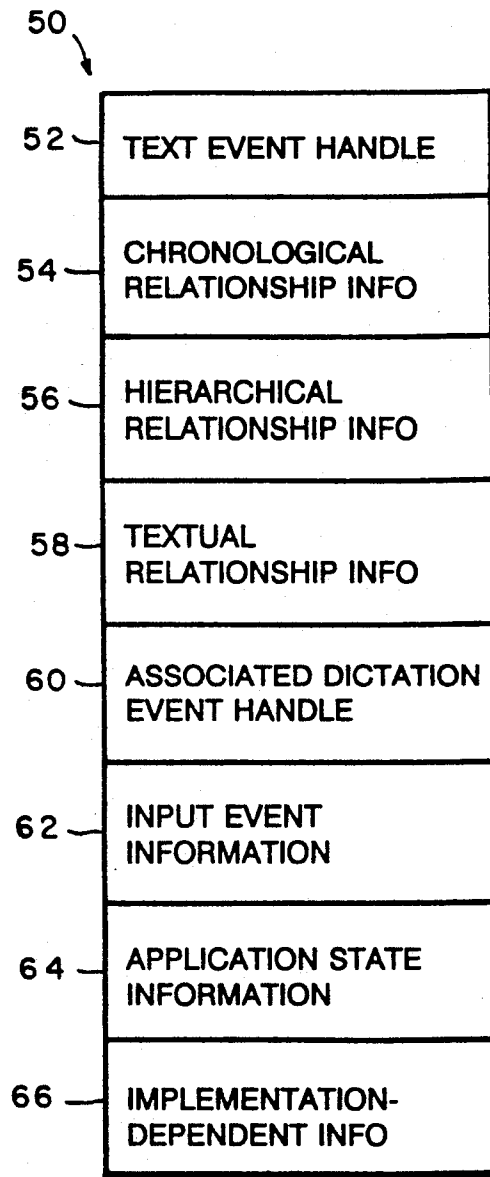**25 Claims, 11 Drawing Sheets**

FIG. 1

FIG. 2

DICTATION EVENT HANDLE	— 32
CHRONOLOGICAL RELATIONSHIP INFO	— 34
CANDIDATE SET INFORMATION	— 36
BEST MATCH CANDIDATE	— 38
CORRECT CHOICE CANDIDATE	— 40
RECOGNIZER PERFORMANCE INFO	— 42
RECOGNIZER STATE INFORMATION	— 44
IMPLEMENTATION-DEPENDENT INFO	— 46

30

FIG. 3

52 —	TEXT EVENT HANDLE
54 —	CHRONOLOGICAL RELATIONSHIP INFO
56 —	HIERARCHICAL RELATIONSHIP INFO
58 —	TEXTUAL RELATIONSHIP INFO
60 —	ASSOCIATED DICTATION EVENT HANDLE
62 —	INPUT EVENT INFORMATION
64 —	APPLICATION STATE INFORMATION
66 —	IMPLEMENTATION-DEPENDENT INFO

50

FIG. 4a

FIG. 4b

FIG.5

DOCKET ALARM
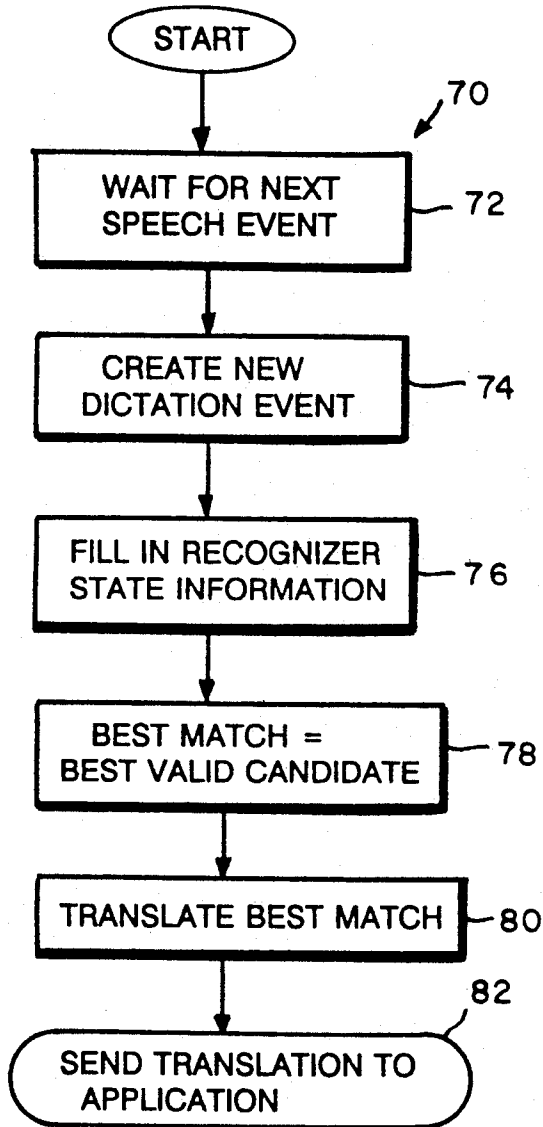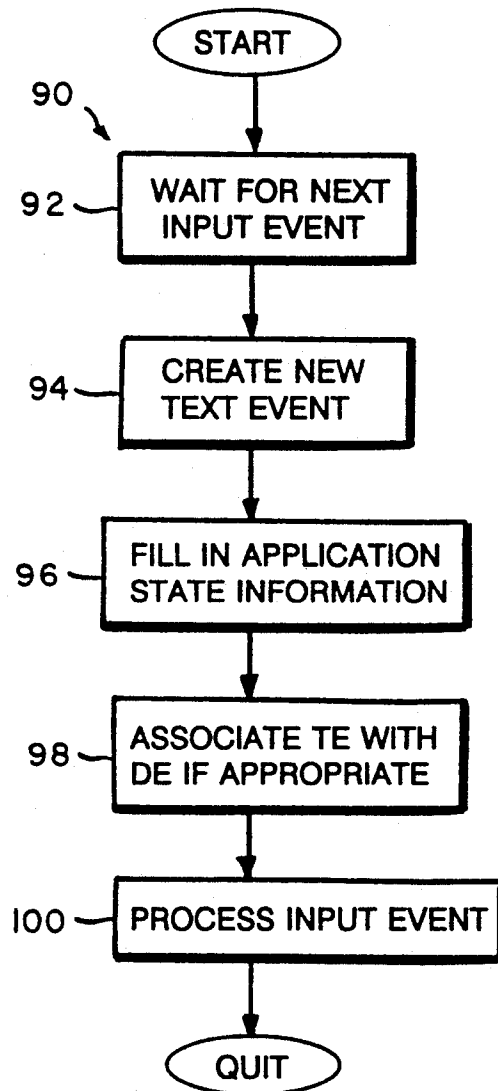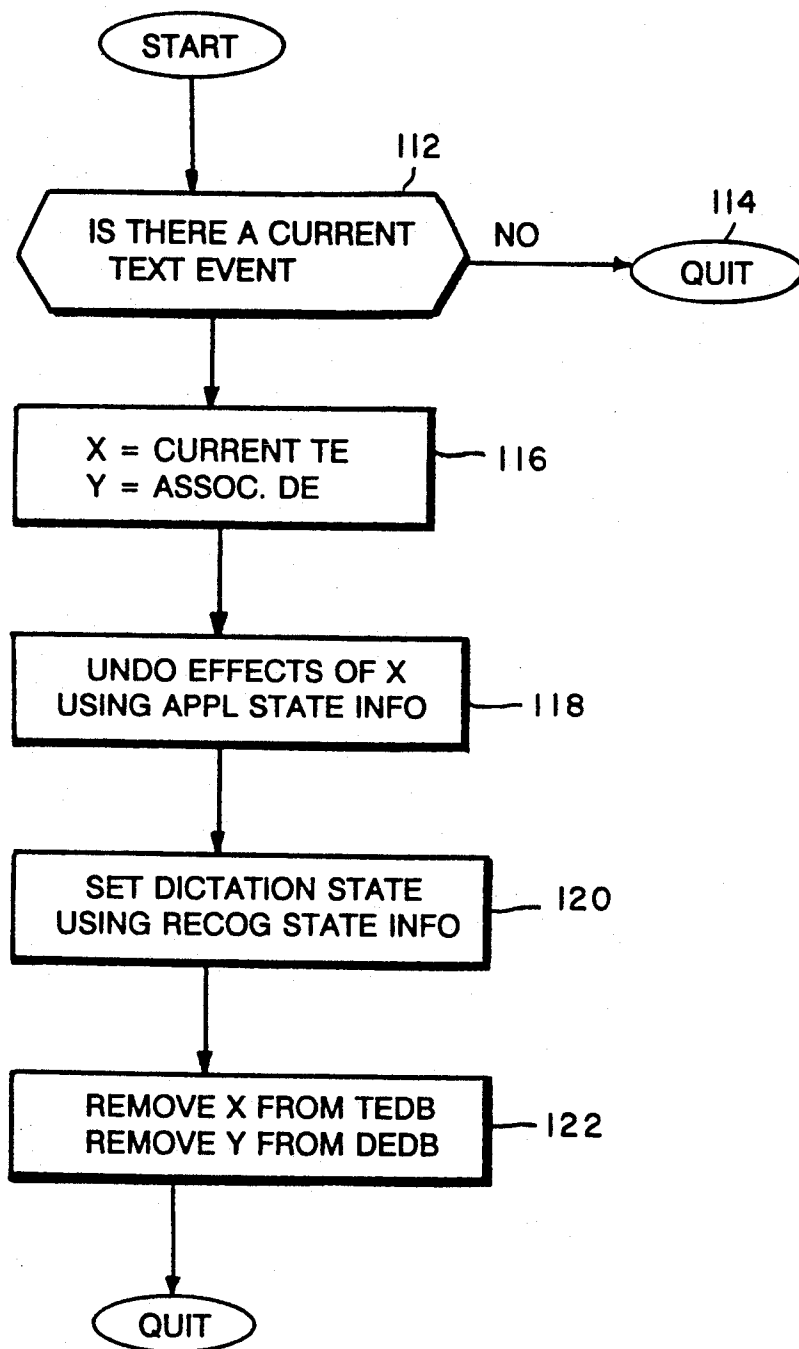
Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts

Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research

With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips

Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS
Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS
Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS
Sync your system to PACER to automate legal marketing.

fastcase®
Smarter legal research.