United States Patent [19]

Britton et al.

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[54] **METHOD AND APPARATUS FOR GENERATING COMPUTER-CONTROLLED INTERACTIVE VOICE SERVICES**

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[52] U.S. Cl. **364/513.5**; 364/300
[58] Field of Search 379/93, 91; 381/51–53; 364/513.5, 300, 456, 516

[56] **References Cited**

U.S. PATENT DOCUMENTS

4,060,848	11/1977	Hyatt	381/51
4,084,237	4/1978	Beachem et al.	364/400
4,315,315	2/1982	Kosslakoff	364/300
4,455,619	6/1984	Masui et al.	364/900
4,553,222	11/1985	Kurland et al.	364/900
4,602,129	7/1986	Matthews et al.	379/89

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[57] **ABSTRACT**

A user-application program for computerized telephone ordering is generated by a system designer who selects and interconnects pre-defined prográm modules and subroutines using a graphics terminal. The application program allows TOUCH-TONE input data and voice response. The present invention describes a Dialog Production System (DPS) for generating application programs for instructing a computer-controlled voice response system to provide computer-controlled voice services. The DPS includes interaction modules, each defining a basic end-user transaction which can be performed by the system, and methods for specifying module interconnection. Each interaction module controls the intercommunications with other modules and controls the devices which interface to the system. To design a dialog program to implement the desired voice service the system designer uses a graphic terminal to select and interconnect the modules to define the sequence of transactions needed to implement the desired voice service.
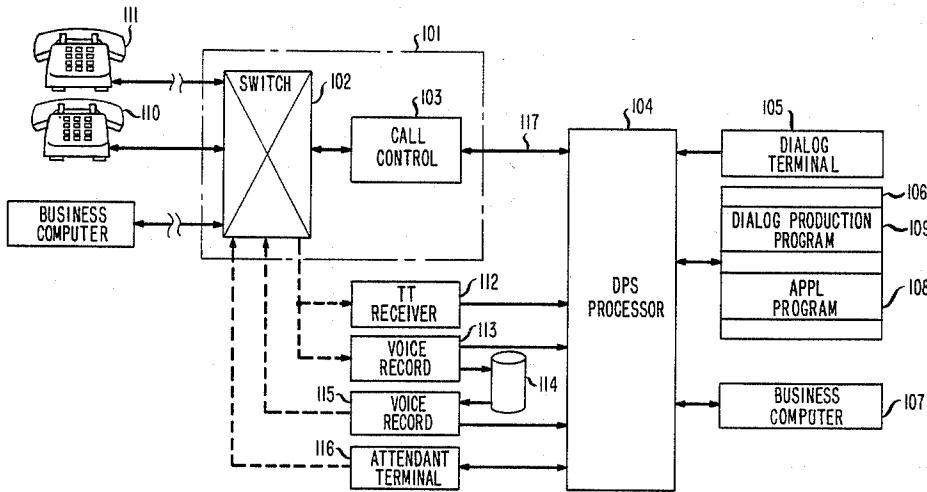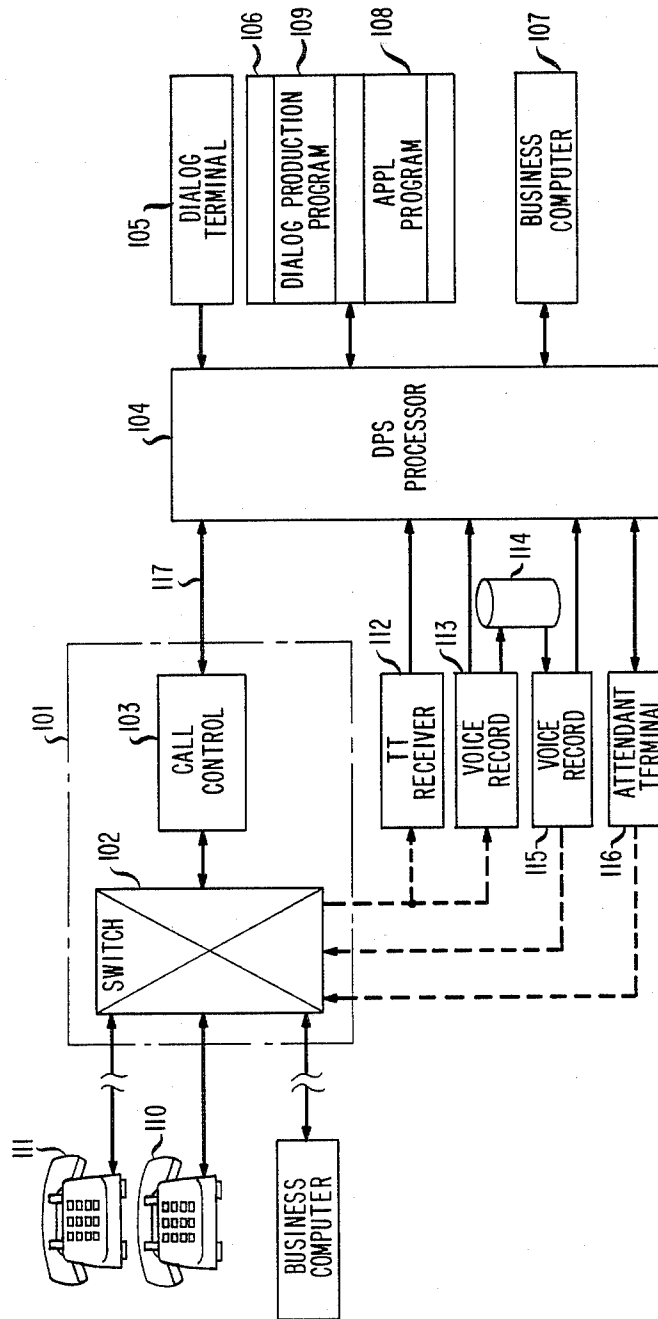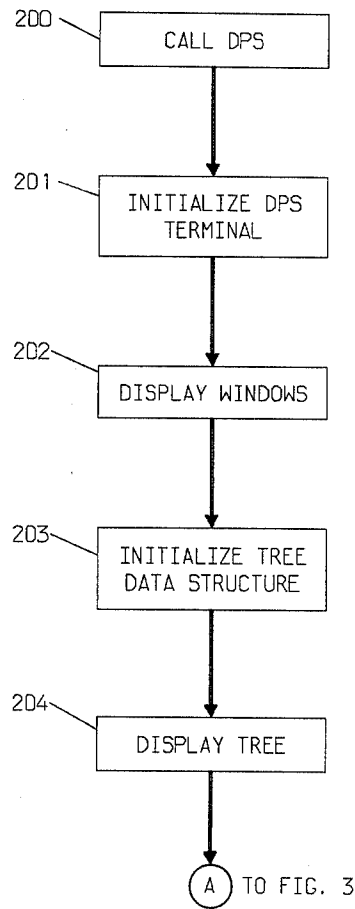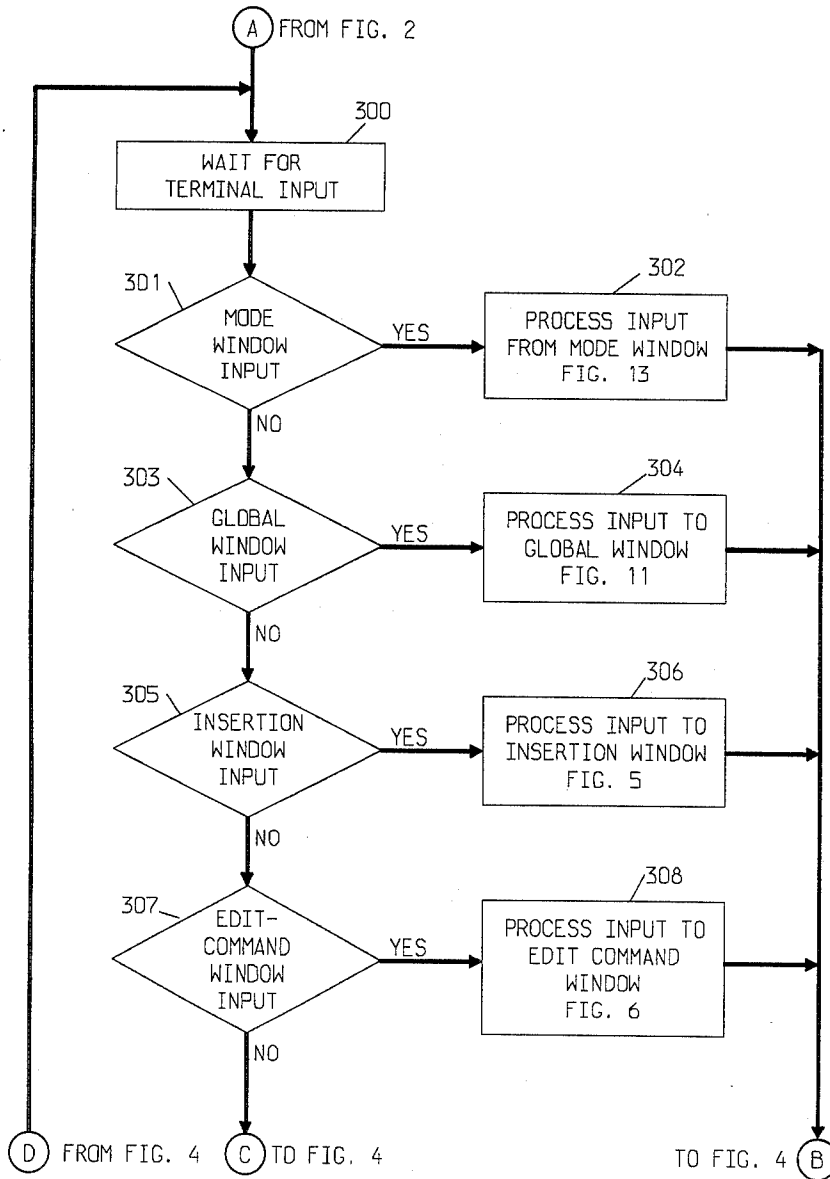
9 Claims, 24 Drawing Sheets

FIG. 1

FIG. 2

FIG. 3

Ⓐ FROM FIG. 2

300
WAIT FOR
TERMINAL INPUT

301
MODE
WINDOW
INPUT

YES → 302
PROCESS INPUT
FROM MODE WINDOW
FIG. 13

NO

303
GLOBAL
WINDOW
INPUT

YES → 304
PROCESS INPUT TO
GLOBAL WINDOW
FIG. 11

NO

305
INSERTION
WINDOW
INPUT

YES → 306
PROCESS INPUT TO
INSERTION WINDOW
FIG. 5

NO

307
EDIT-
COMMAND
WINDOW
INPUT

YES → 308
PROCESS INPUT TO
EDIT COMMAND
WINDOW
FIG. 6

NO

Ⓓ FROM FIG. 4   Ⓒ TO FIG. 4   TO FIG. 4 Ⓑ

FIG. 4

D TO FIG. 3   C FROM FIG. 3   FROM FIG. 3 B

400
NAVIGATION WINDOW 1 INPUT —YES→ 401 PROCESS INPUT TO NAVIGATION WINDOW 1 FIG. 8

NO

402
NAVIGATION WINDOW 2 INPUT —YES→ 403 PROCESS INPUT TO NAVIGATION WINDOW 2 FIG. 10

NO

404
FORM WINDOW INPUT —YES→ 405 PROCESS INPUT TO FORM WINDOW FIG. 9

NO

406
FILE WINDOW INPUT —YES→ 407 PROCESS INPUT TO FILE WINDOW FIG. 12
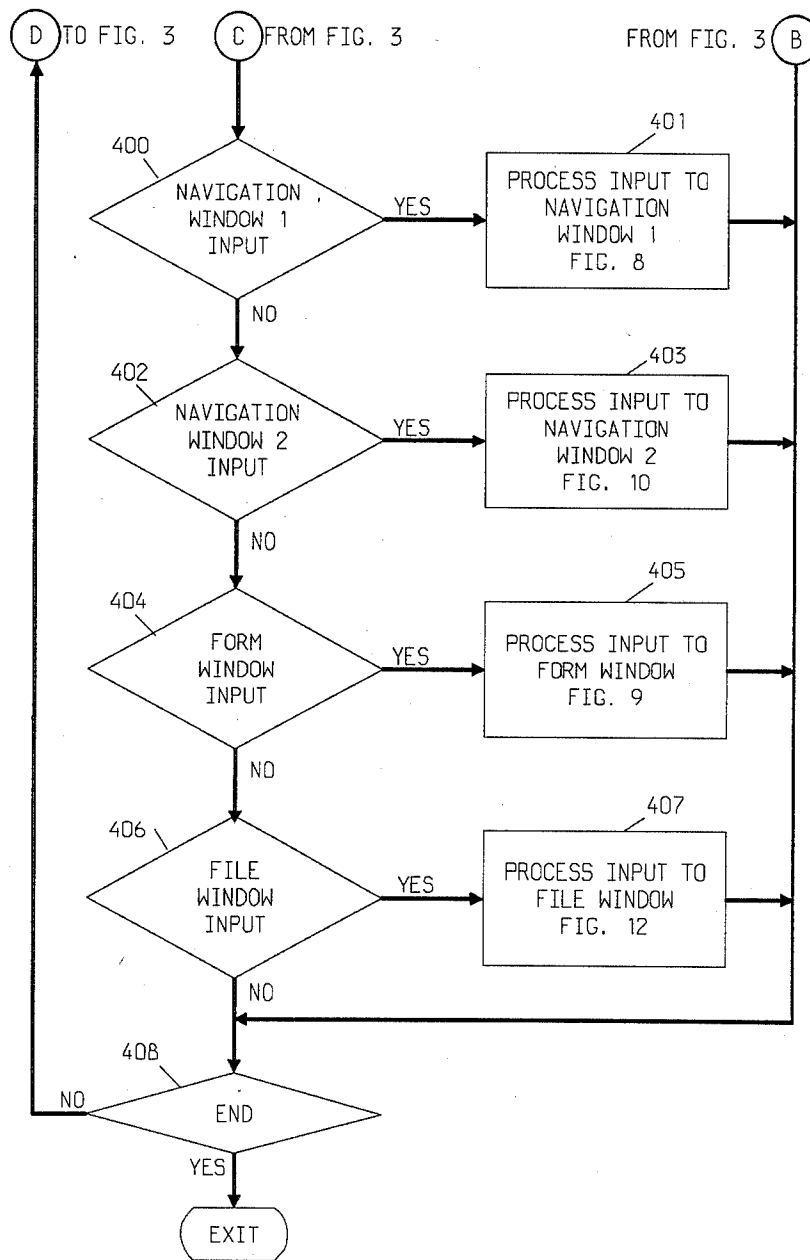
NO

408
NO ← END

YES

EXIT

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