



[54] VEHICLE COMMUNICATION AND REMOTE CONTROL SYSTEM

[75] Inventors: Michael J. Suman; Thomas L. Welling; Mark L. Zeinstra; Ruskin T. Lhamon, all of Holland; Matthew T. Nichelson, Zeeland, all of Mich.

[73] Assignee: Prince Corporation, Holland, Mich.

[21] Appl. No.: 08/874,210

[22] Filed: Jun. 13, 1997

Related U.S. Application Data

- [60] Provisional application No. 60/019,773, Jun. 14, 1996.
[51] Int. Cl.7 G08G 1/23
[52] U.S. Cl. 340/988; 340/426; 342/457; 455/422
[58] Field of Search 340/426, 988; 342/457, 357; 701/213; 455/422

References Cited

U.S. PATENT DOCUMENTS

Table of references cited with patent numbers, dates, and names (e.g., Endo et al., Kanayama, Barske et al., Bhagat et al., etc.)

Table of references cited with patent numbers, dates, and names (e.g., Yokey et al., Bird, Casper et al., Schreder, etc.)

Primary Examiner—Brent A. Swarthout
Attorney, Agent, or Firm—Price, Heneveld, Cooper, DeWitt & Litton

[57] ABSTRACT

The vehicle communication and control system of the present invention includes a transceiver for sending and receiving RF signals, a processor coupled to the transceiver, a location identifying sensor coupled to the processor for supplying vehicle location data, a user interface coupled to the processor for providing information to a user and for enabling a user to input commands to be executed by the processor, and a vehicle accessory interface for coupling the processor to a vehicle accessory control circuit to enable the processor to issue commands to a vehicle accessory. The processor is preferably adapted to perform a wide variety of functions in response to user input commands, received RF signals, and other commands received from other vehicle accessories and components coupled to the system of the present invention through the vehicle system bus. Some of these functions include establishing a two-way communication link, requesting and providing location-specific information, enabling remote tracking of the vehicle, issuing an emergency request or a request for roadside assistance, requesting and receiving navigational information, remote control of vehicle functions, enabling remote diagnostics of the vehicle, and enabling reprogramming of various vehicle accessories and components.

28 Claims, 62 Drawing Sheets

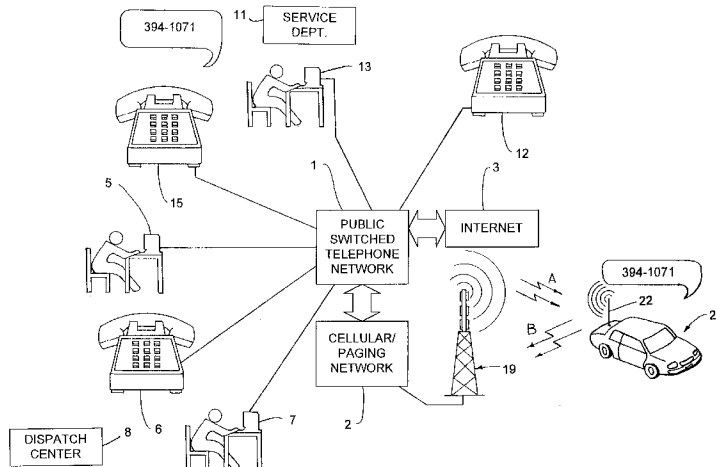
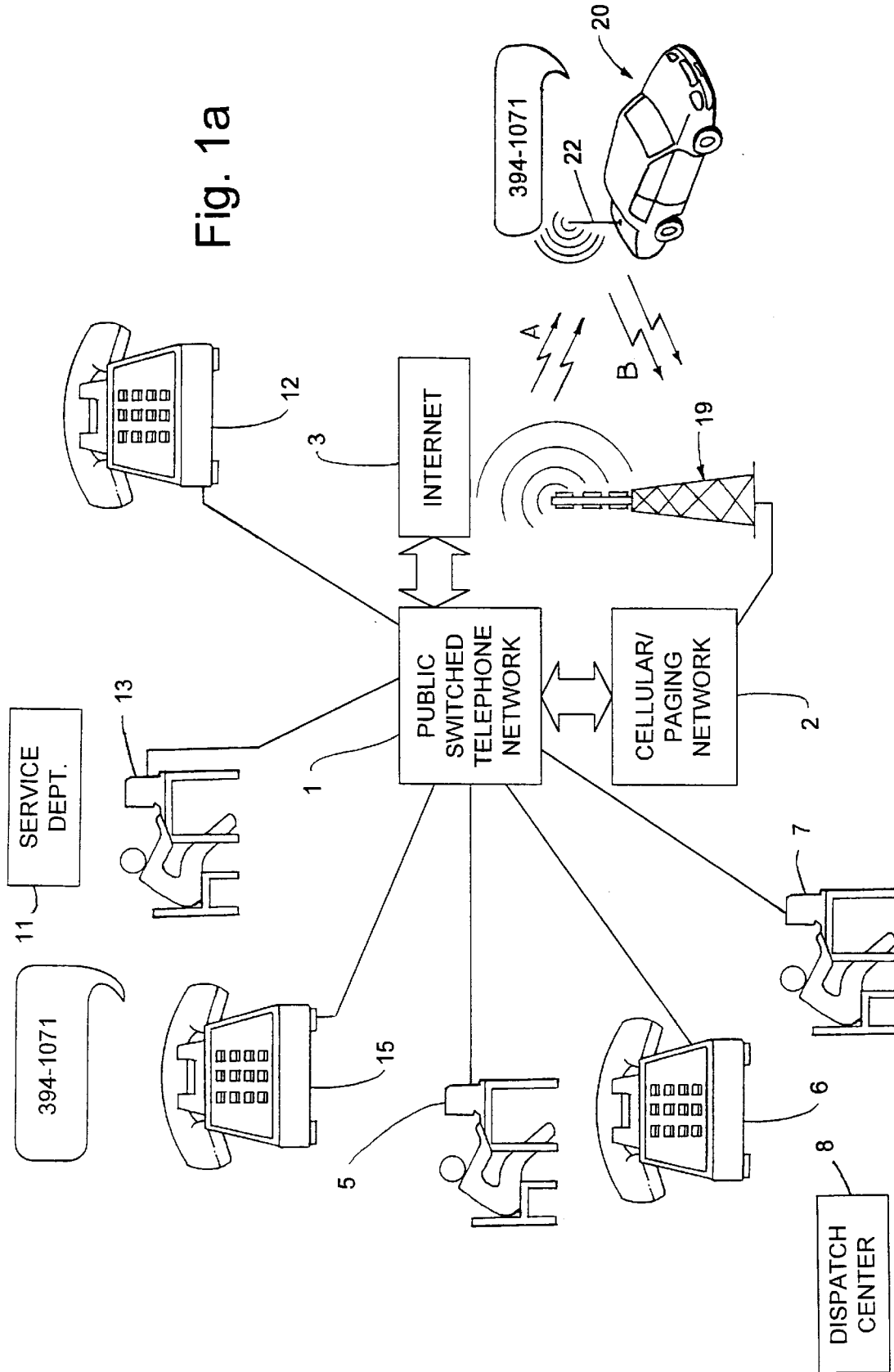


Fig. 1a



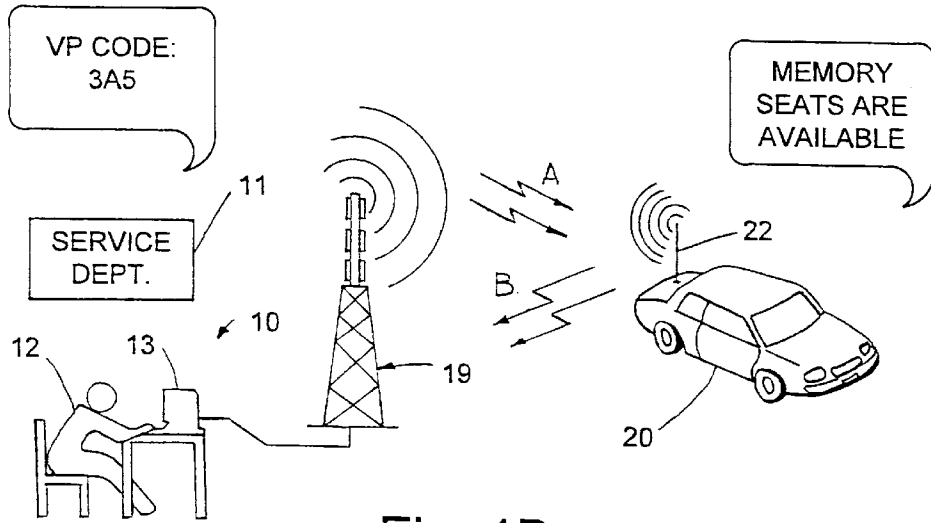


Fig. 1B

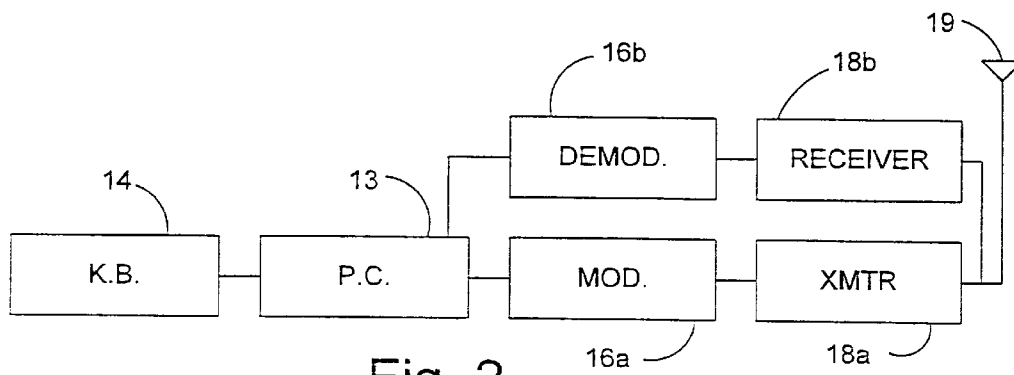


Fig. 2

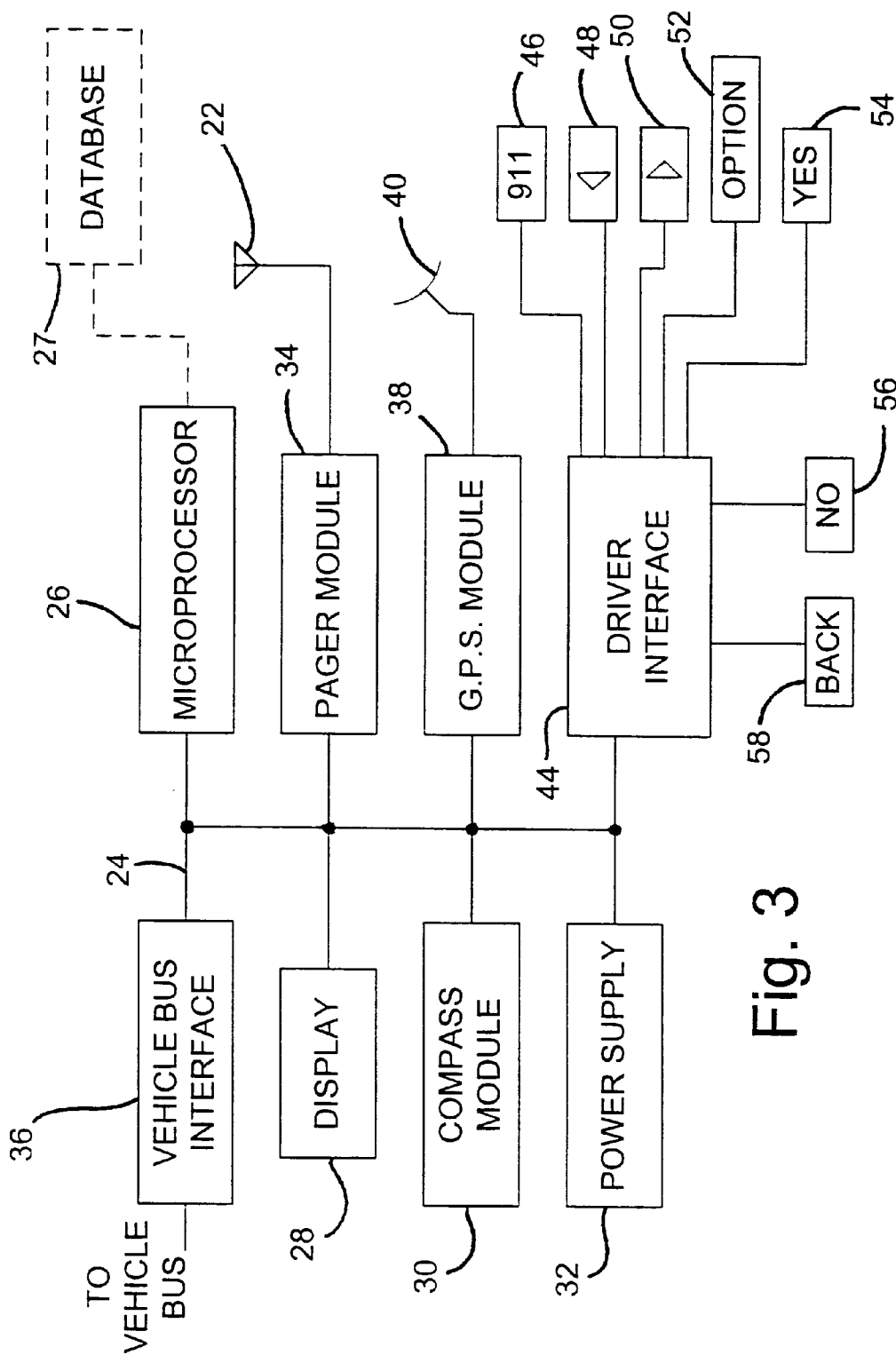


Fig. 3

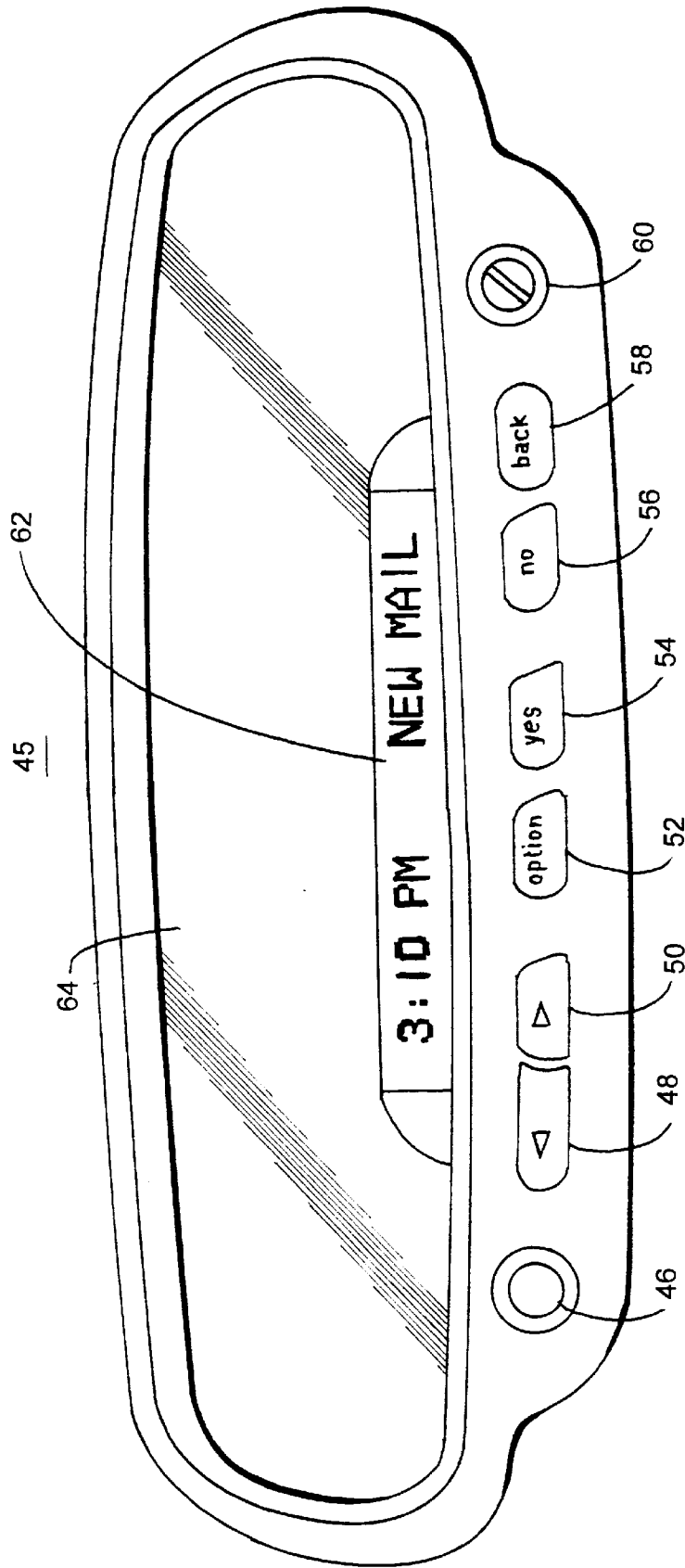


Fig. 4

# 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.