



US006064970A

United States Patent [19]

[11] Patent Number: **6,064,970**

McMillan et al.

[45] Date of Patent: ***May 16, 2000**

[54] **MOTOR VEHICLE MONITORING SYSTEM FOR DETERMINING A COST OF INSURANCE**

4,843,578 6/1989 Wade 364/565
4,853,720 8/1989 Onari et al. 364/431.07

(List continued on next page.)

[75] Inventors: **Robert John McMillan**, Tampa, Fla.;
Alexander Dean Craig, Moreland Hills, Ohio; **John Patrick Heinen**, Tampa, Fla.

FOREIGN PATENT DOCUMENTS

9002388 8/1989 WIPO .

OTHER PUBLICATIONS

[73] Assignee: **Progressive Casualty Insurance Company**, Mayfield Village, Ohio

“The Safest Cars of 91”, Baig, Edward U.S. News & World Report v109, n22, p.71; Dec. 3, 1990.

[*] Notice: This patent is subject to a terminal disclaimer.

“Vendor’s Spice Up Services”, Robert Deierlein, Beverage-World, v109, n1467, p.82; Jun. 1990.

[21] Appl. No.: **09/135,034**

Rosenberg, Martin; Alexander, Stephen A. , Rate Classification Reform in New Jersey. Best’s Review (Prop/Casualty) vo. 92. No. 12, pp. 30–32, Apr. 1992.

[22] Filed: **Aug. 17, 1998**

Kaneko, Tetsuya; Jovanis, Paul P. Multiday driving patterns and motor carrier accident risk. A disaggregate analysis. Accident Analysis and Prevention, vol. 24, No. 5, pp. 437–456, Jan. 1, 1992.

Related U.S. Application Data

[63] Continuation of application No. 08/592,958, Jan. 29, 1996, Pat. No. 5,797,134.

Primary Examiner—Edward R. Cosimano
Attorney, Agent, or Firm—Fay, Sharpe, Fagan Minnich & McKee, LLP

[51] Int. Cl.⁷ **G06F 17/60**

[52] U.S. Cl. **705/4; 340/439; 340/870.01; 360/5; 702/1; 705/400**

[58] Field of Search **340/439, 870.01; 360/5; 701/1.7; 702/1; 705/4, 400**

[57] ABSTRACT

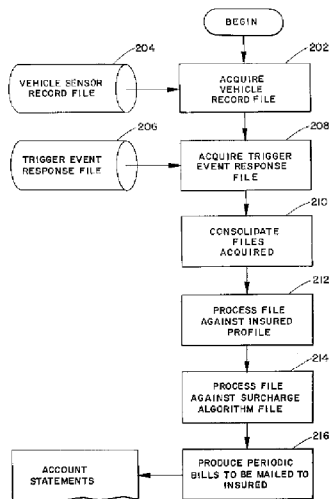
[56] References Cited

U.S. PATENT DOCUMENTS

3,504,337	3/1970	Ekman	340/439
4,067,061	1/1978	Juhasz	360/5
4,234,926	11/1980	Wallace et al.	702/188
4,258,421	3/1981	Juhasz et al.	701/35
4,533,962	8/1985	Decker et al.	360/5
4,608,638	8/1986	Tsikos	364/424
4,638,295	1/1987	Middlebrook et al.	340/465
4,667,336	5/1987	Best	377/15
4,745,564	5/1988	Tennes et al.	702/141
4,763,745	8/1988	Eto et al.	180/143
4,807,179	2/1989	Clere et al.	360/5 X
4,829,434	5/1989	Karmel et al.	72/866 X
4,843,463	6/1989	Michetti	358/108

A method and system of determining a cost of automobile insurance based upon monitoring, recording and communicating data representative of operator and vehicle driving characteristics. The cost is adjustable retrospectively and can be prospectively set by relating the driving characteristics to predetermined safety standards. The method comprises steps of monitoring a plurality of raw data elements representative of an operating state of the vehicle or an action of the operator. Selected ones of the raw data elements are recorded when the ones are determined to have an identified relationship to safety standards. The selected ones are consolidated for processing against an insurer profile and for identifying a surcharge or discount to be applied to a base cost of automobile insurance. A final cost is produced from the base costs and the surcharges or discounts.

15 Claims, 6 Drawing Sheets



Liberty Mutual
Exhibit 1021

U.S. PATENT DOCUMENTS

4,939,652	7/1990	Steiner	364/424.04	5,365,451	11/1994	Wang et al.	364/449
4,987,541	1/1991	Levente et al.	364/424.04	5,430,432	7/1995	Camhi et al.	340/438
4,992,943	2/1991	McCracken	364/424.04	5,499,182	3/1996	Ousborne	701/35
5,055,851	10/1991	Sheffer	342/457	5,500,806	3/1996	Bellin et al.	364/528.33
5,111,289	5/1992	Lucas et al.	358/108	5,548,273	8/1996	Nicol et al.	340/439
5,189,621	2/1993	Onari et al.	364/431.04	5,550,551	8/1996	Alesiu	342/457
5,223,844	6/1993	Mansell et al.	342/357	5,638,273	6/1997	Coiner et al.	364/424.04
5,319,374	6/1994	Desai et al.	342/387	5,694,322	12/1997	Westerlage et al.	705/417
				5,797,134	8/1998	McMillan et al.	705/400

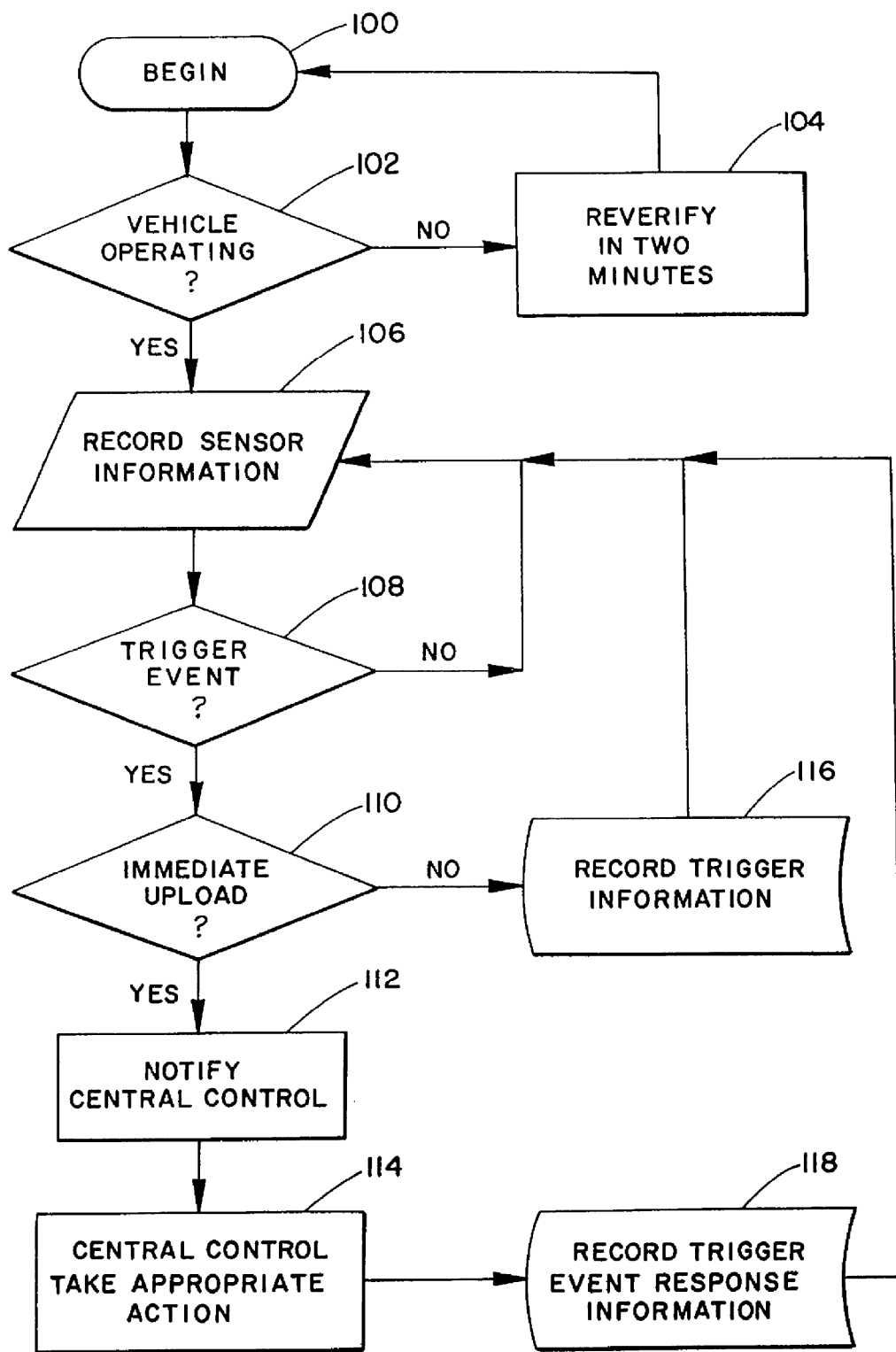
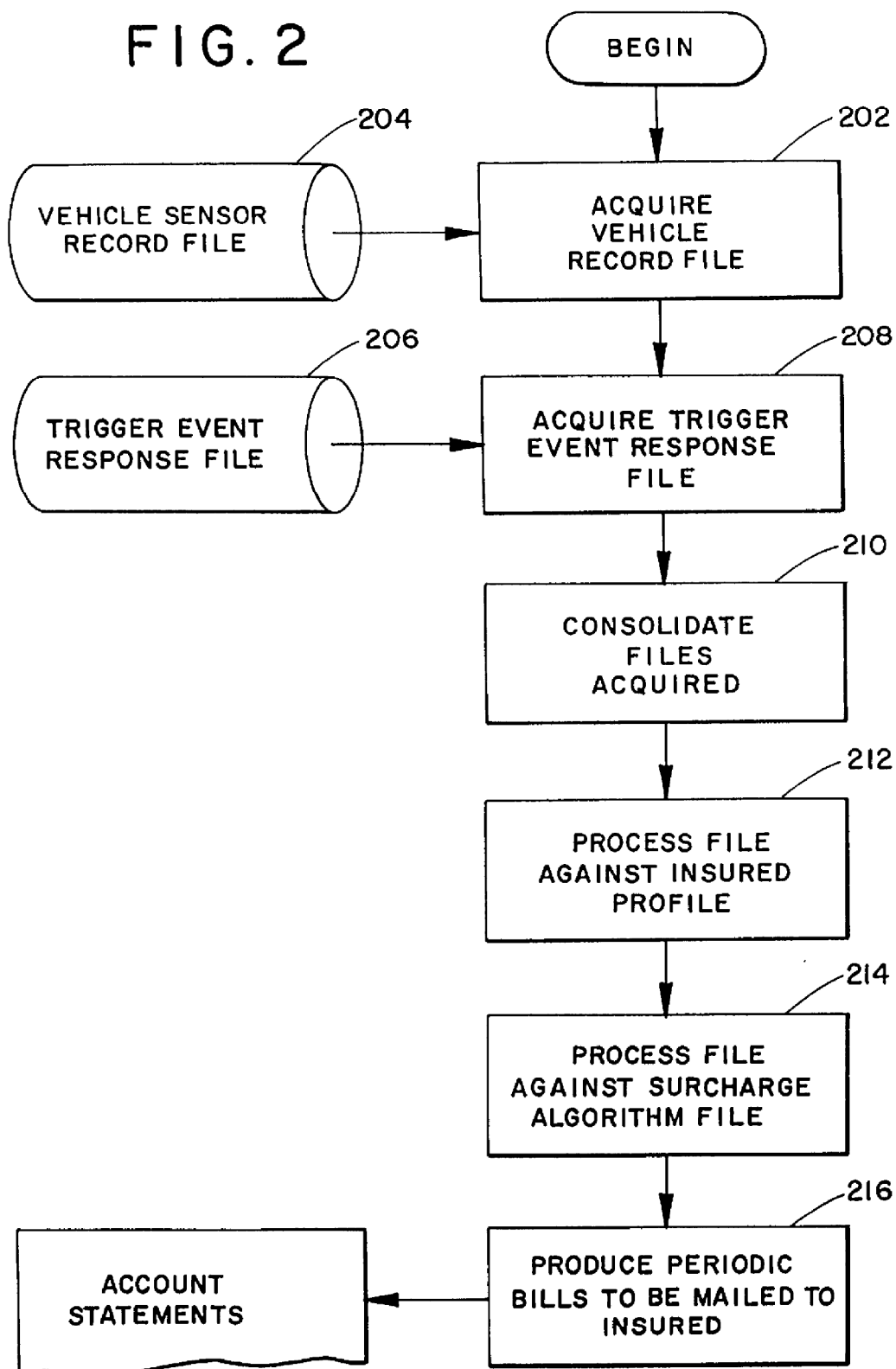


FIG. 1

FIG. 2



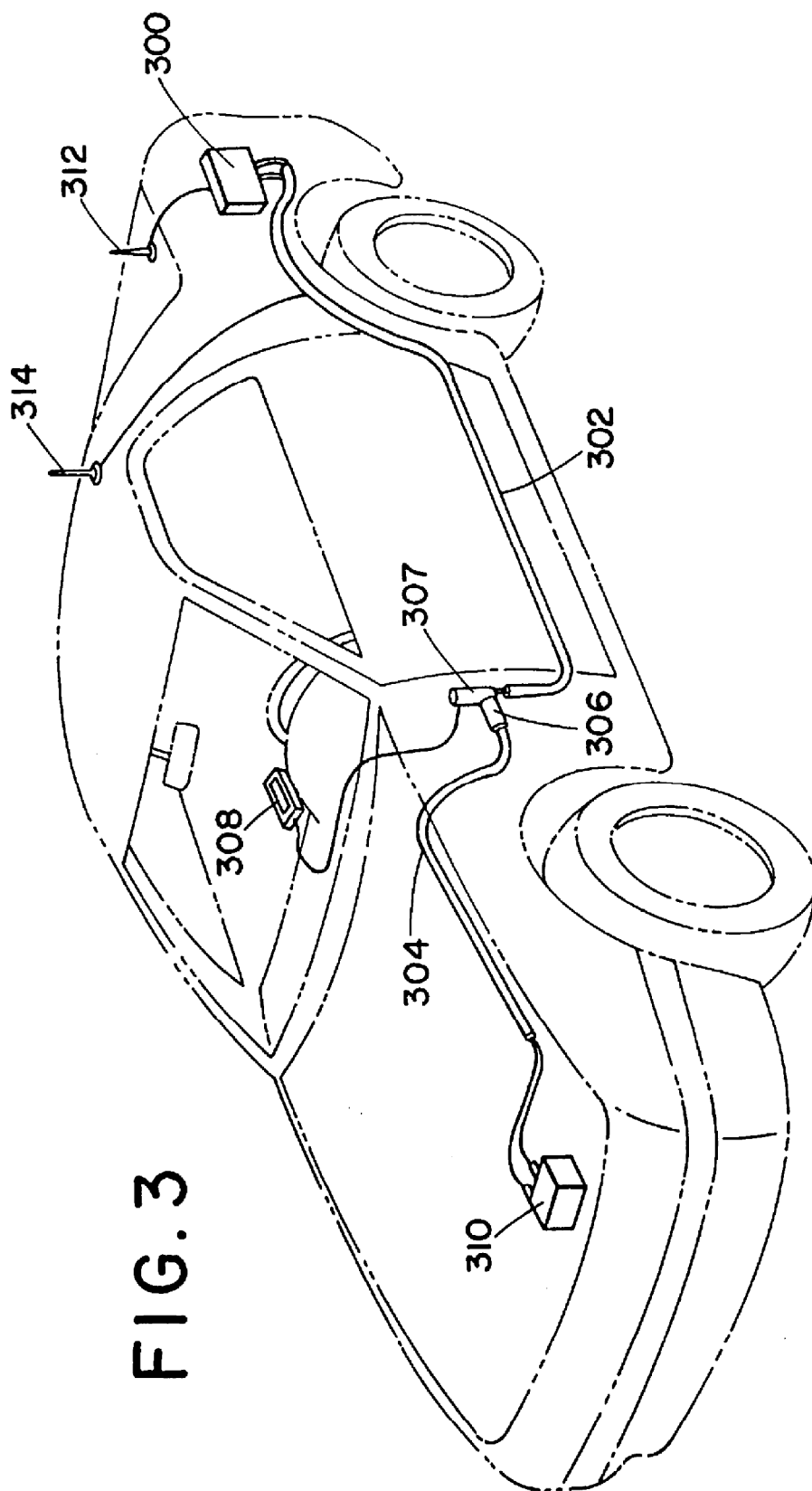


FIG. 3

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.