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McMillan et al.

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

5,548,273 8/1996 Nicol et al. 340/439
5,550,551 8/1996 Alesio 342/457
5,638,273 6/1997 Coiner et al. 364/424.04

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Alexander Dean Craig, Moreland Hills, Ohio; **John Patrick Heinen**, Tampa, Fla.

FOREIGN PATENT DOCUMENTS

9002388 8/1989 WIPO .

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

OTHER PUBLICATIONS

[21] Appl. No.: **592,958**

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

[22] Filed: **Jan. 29, 1996**

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

[51] Int. Cl.⁶ **G06F 17/60**

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

[52] U.S. Cl. **705/400; 705/4**

"Vendors Spice Up Services"; Robert Deierlein Beverage World, v109, n1467, p. 82; Jun. 1990.

[58] Field of Search 395/204; 364/424.01,
364/424.04, 565; 340/441; 346/18; 705/4,
400

Primary Examiner—Edward R. Cosimano

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Attorney, Agent, or Firm—Fay, Sharpe, Beall, Fagan, Minnich and McKee

[56] References Cited

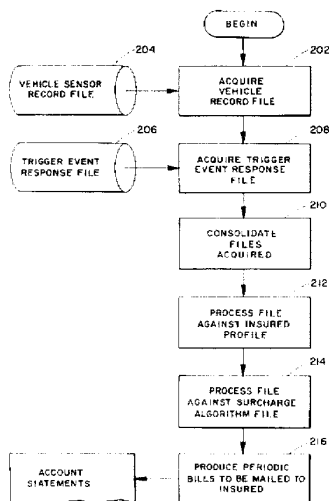
U.S. PATENT DOCUMENTS

4,533,962	8/1985	Decker et al. .	
4,608,638	8/1986	Tsikos .	
4,667,336	5/1987	Best .	
4,763,745	8/1988	Eto et al. .	
4,807,179	2/1989	Clere et al. .	
4,829,434	5/1989	Karmel et al. .	
4,843,463	6/1989	Michetti .	
4,843,578	6/1989	Wade	364/565
4,853,720	8/1989	Onari et al. .	
4,939,652	7/1990	Steiner .	
4,987,541	1/1991	Levente et al. .	
4,992,943	2/1991	McCracken .	
5,055,851	10/1991	Sheffer	342/457
5,111,289	5/1992	Lucas et al. .	
5,189,621	2/1993	Onari et al. .	
5,223,844	6/1993	Mansell et al.	342/357
5,319,374	6/1994	Desai et al.	342/387
5,365,451	11/1994	Wang et al.	364/449
5,430,432	7/1995	Camhi et al.	340/438
5,499,182	3/1996	Ousborne	364/424.04

[57] ABSTRACT

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.

26 Claims, 6 Drawing Sheets



**Liberty Mutual
Exhibit 1010**

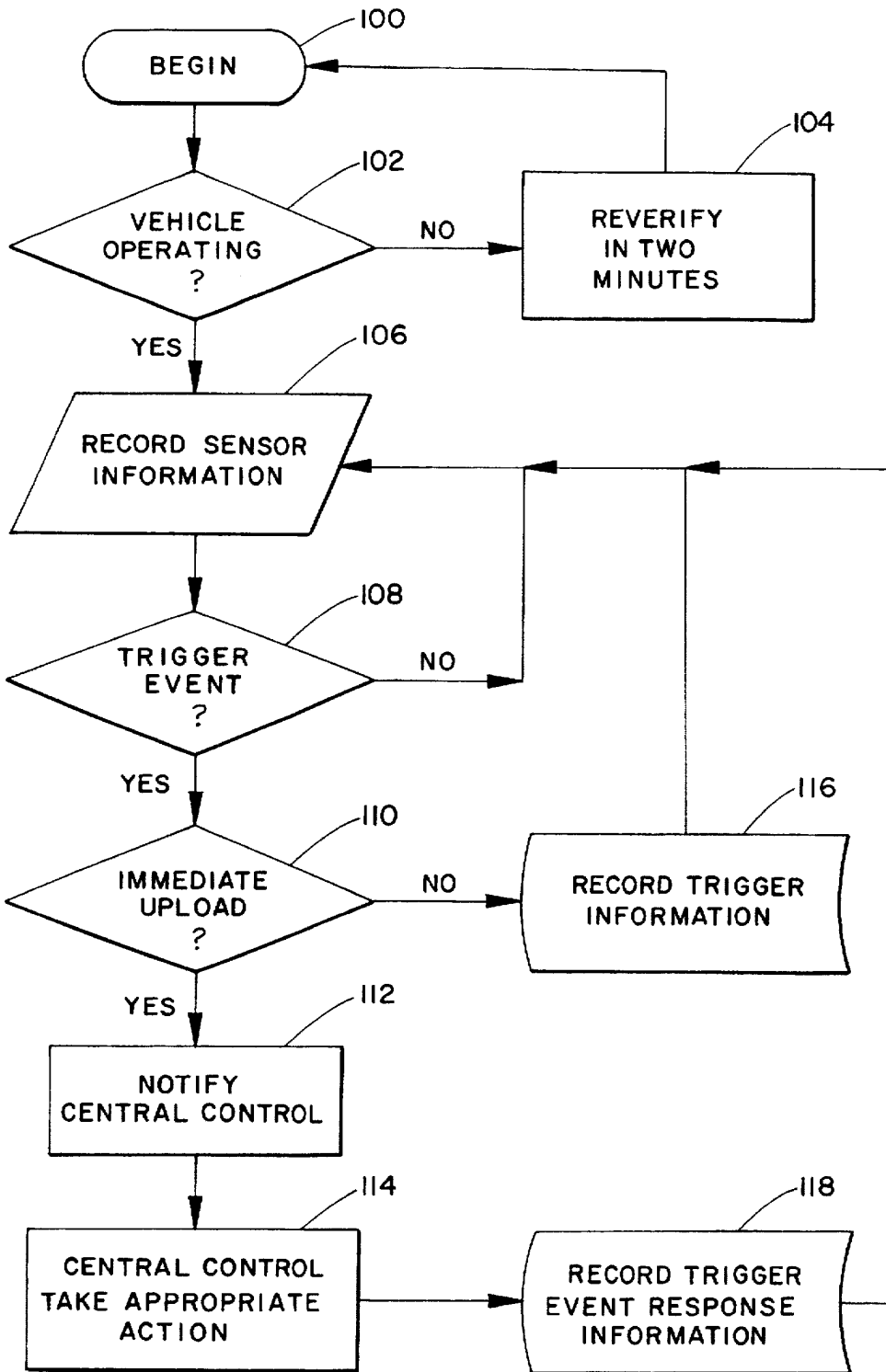
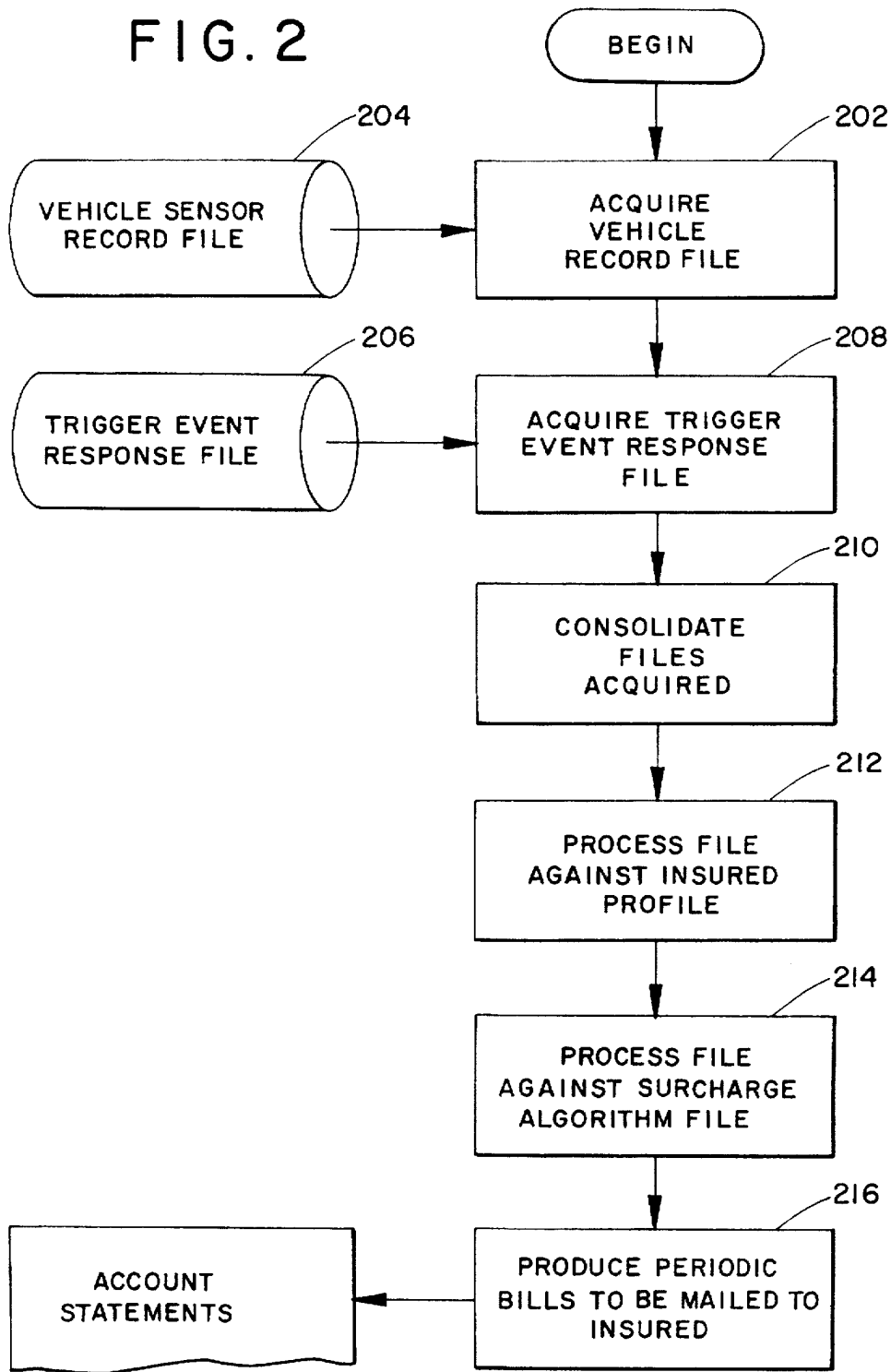
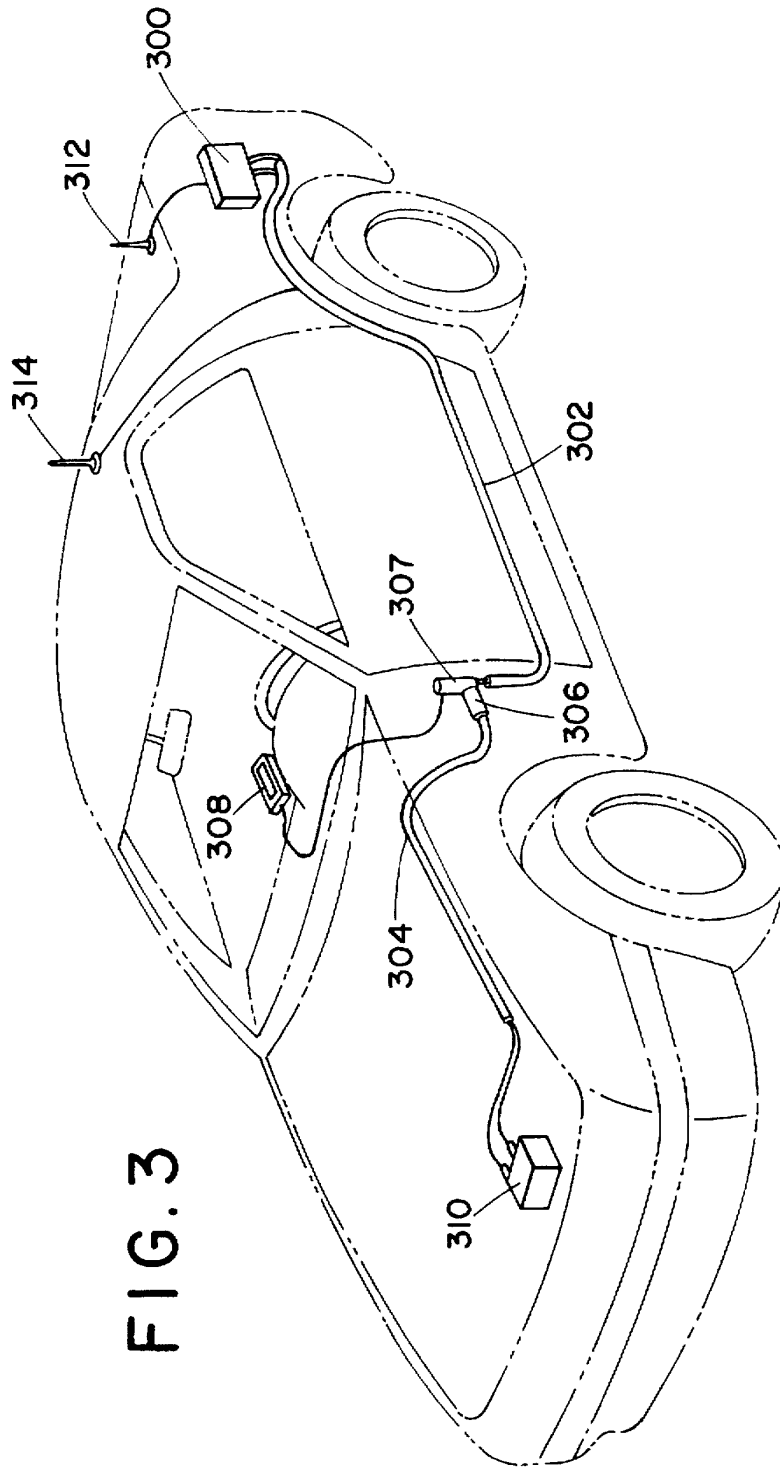


FIG. 1

FIG. 2





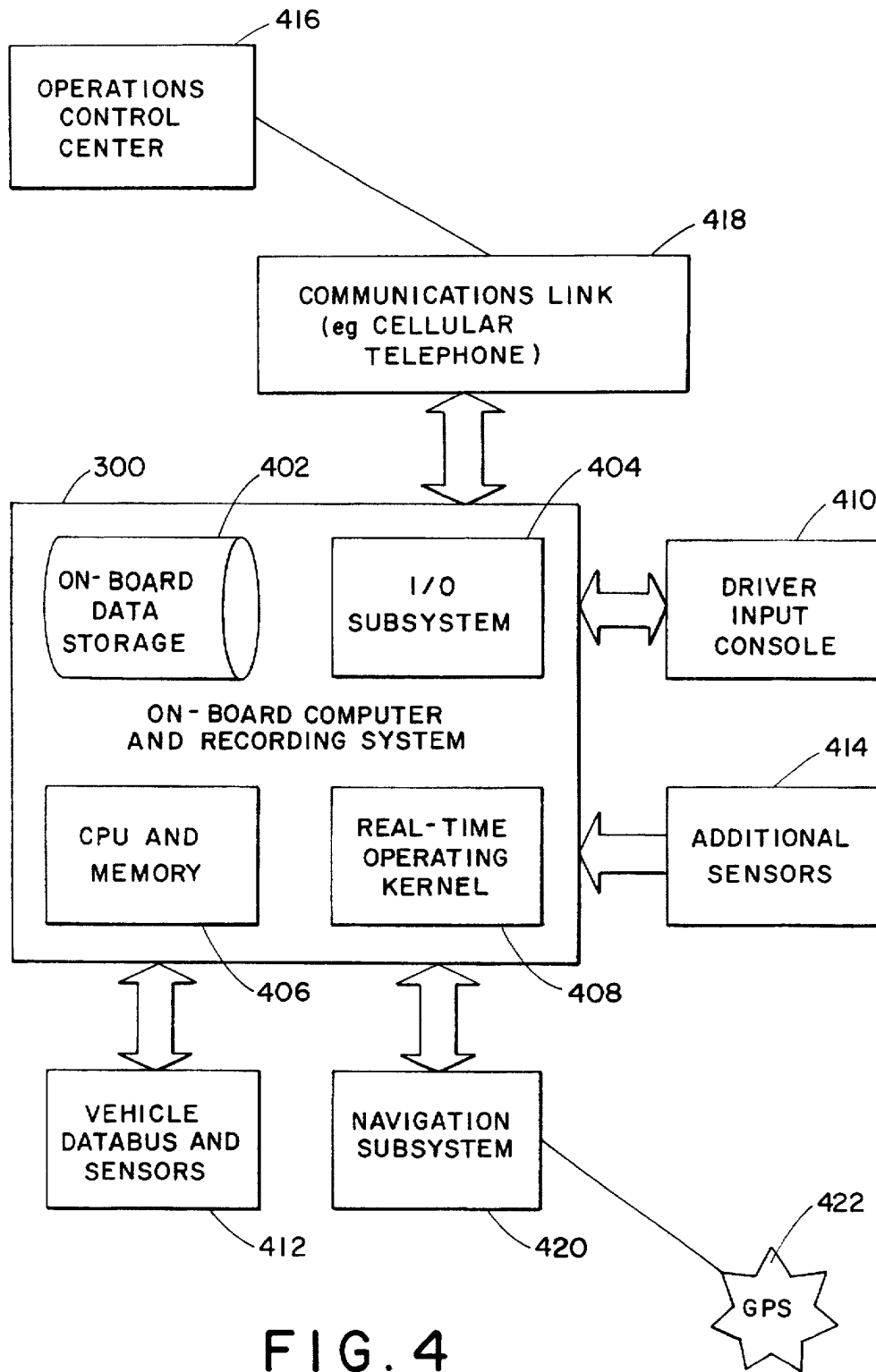


FIG. 4

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