

United States Patent [19]

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McMillan et al.

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[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.)

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FOREIGN PATENT DOCUMENTS

9002388 8/1989 WIPO .

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

OTHER PUBLICATIONS

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

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

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

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.

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.

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

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

Related U.S. Application Data

Primary Examiner—Edward R. Cosimano

Attorney, Agent, or Firm—Fay, Sharpe, Fagan Minnich & McKee, LLP

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

[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

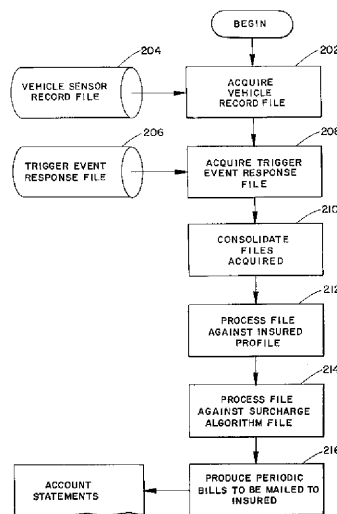
A method and system of determining a cost of automobile insurance based upon monitoring, recording and communicating data representative of operator and vehicle driving characteristics. The cost is adjustable retrospectively and can be prospectively set by relating the driving characteristics to predetermined 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.

[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

15 Claims, 6 Drawing Sheets



**Liberty Mutual
Exhibit 1011**

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

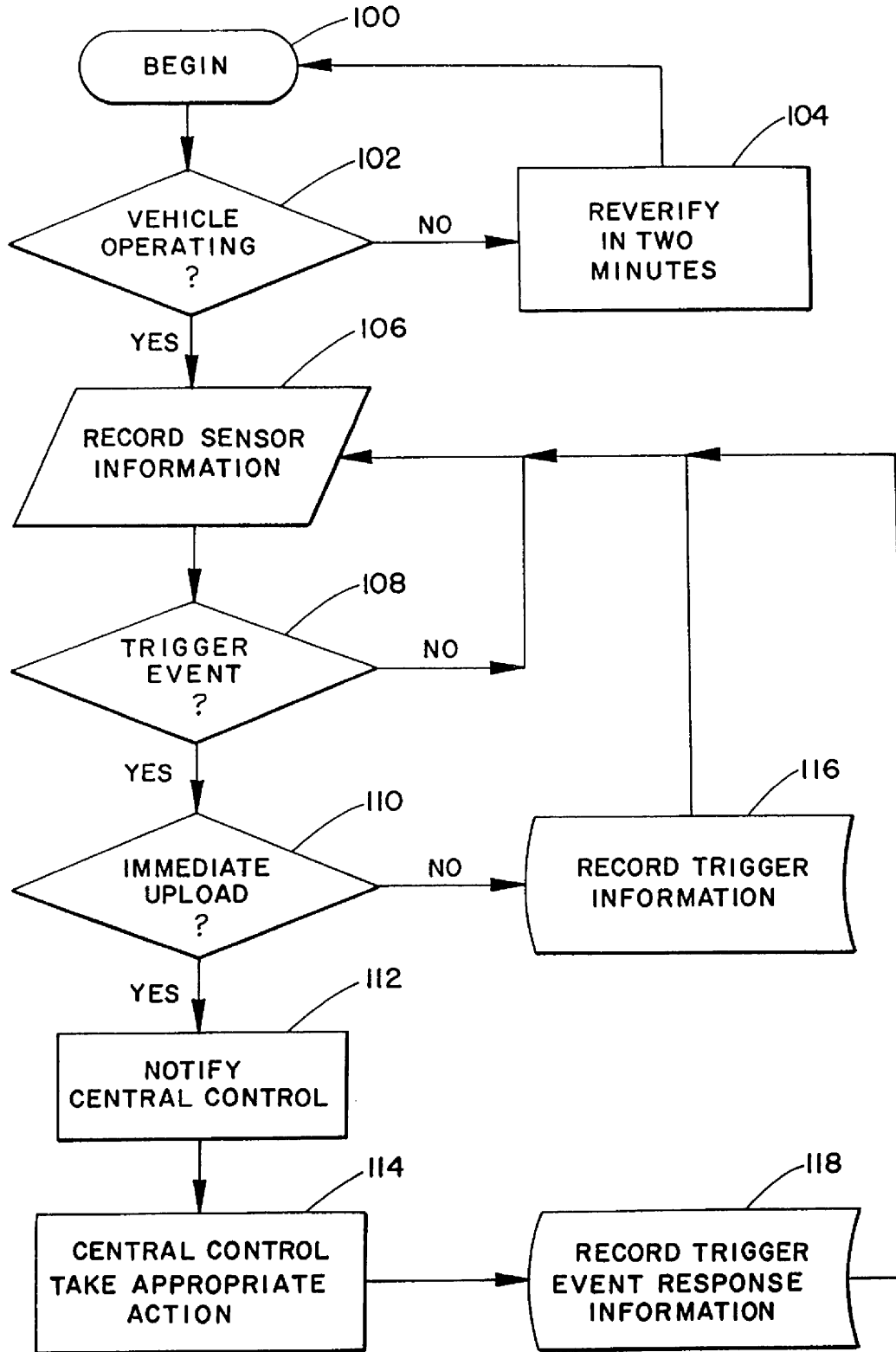
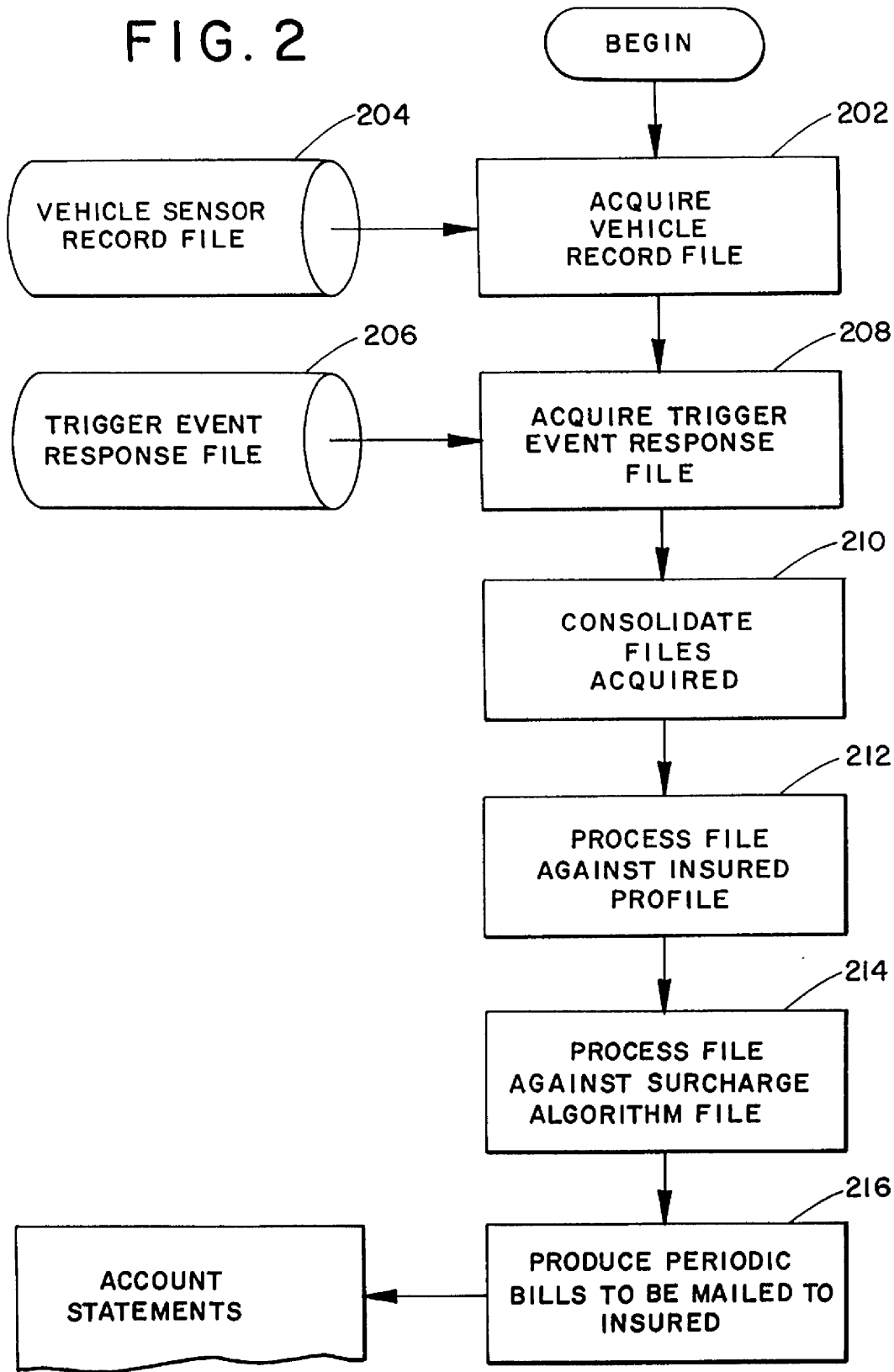


FIG. 1

FIG. 2



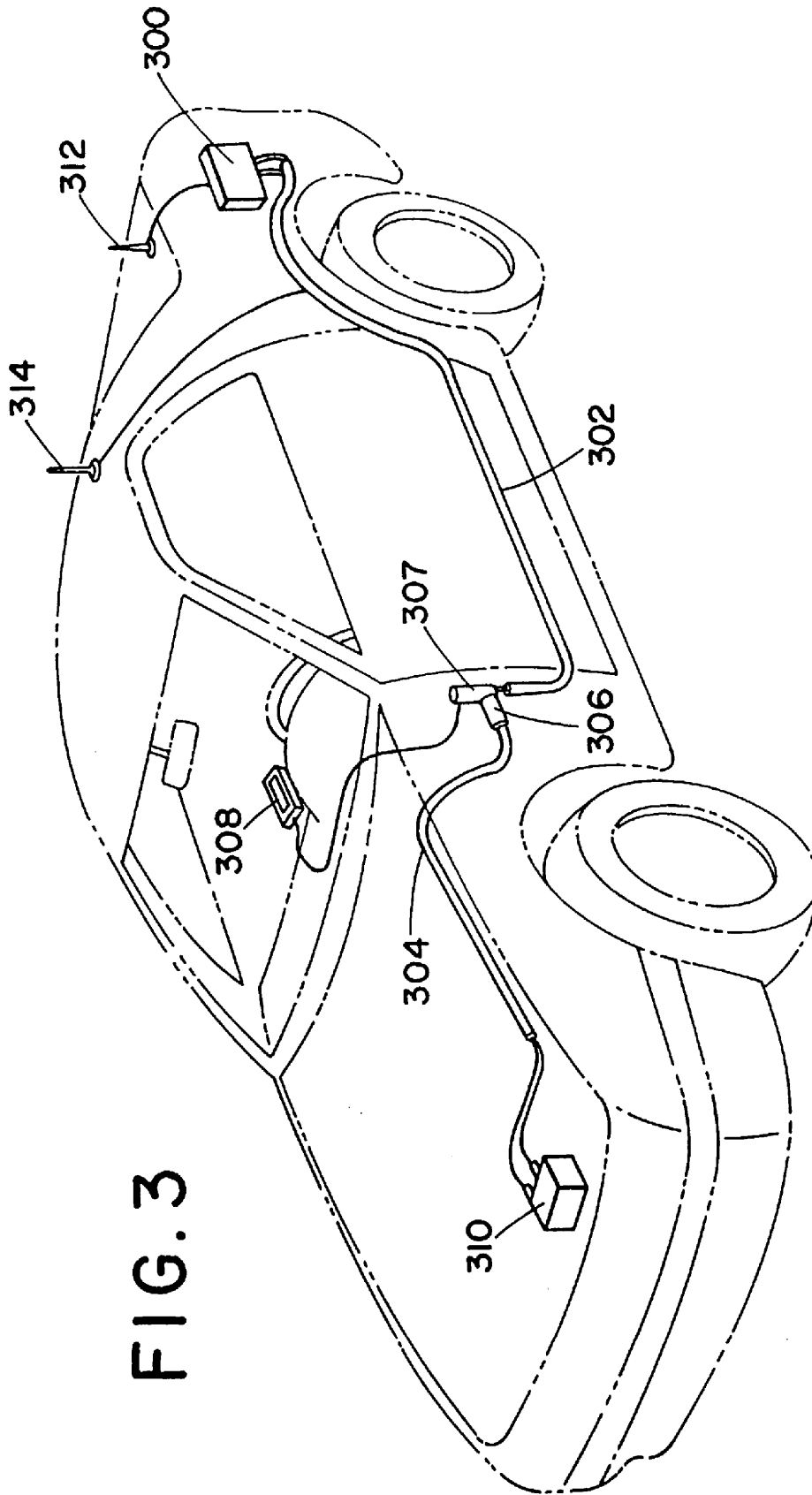


FIG. 3

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