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Omura

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[54] **SHOCK ABSORBING INTERIOR SYSTEM FOR VEHICLE PASSENGERS**

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[73] Assignee: **Nissan Motor Co., Ltd., Yokohama, Japan**

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Related U.S. Application Data

[63] Continuation of Ser. No. 685,956, Apr. 17, 1991, abandoned.

[30] **Foreign Application Priority Data**

Apr. 18, 1990 [JP] Japan 2-100218

[51] Int. Cl.⁶ **B60R 21/32; B60R 21/00**

[52] U.S. Cl. **364/424.05; 180/268; 180/282; 280/735; 280/753; 307/10.1**

[58] Field of Search **364/424.05, 424.01; 307/10.1; 340/436; 180/268, 282; 280/730, 734, 735, 753, 806; 348/143, 148**

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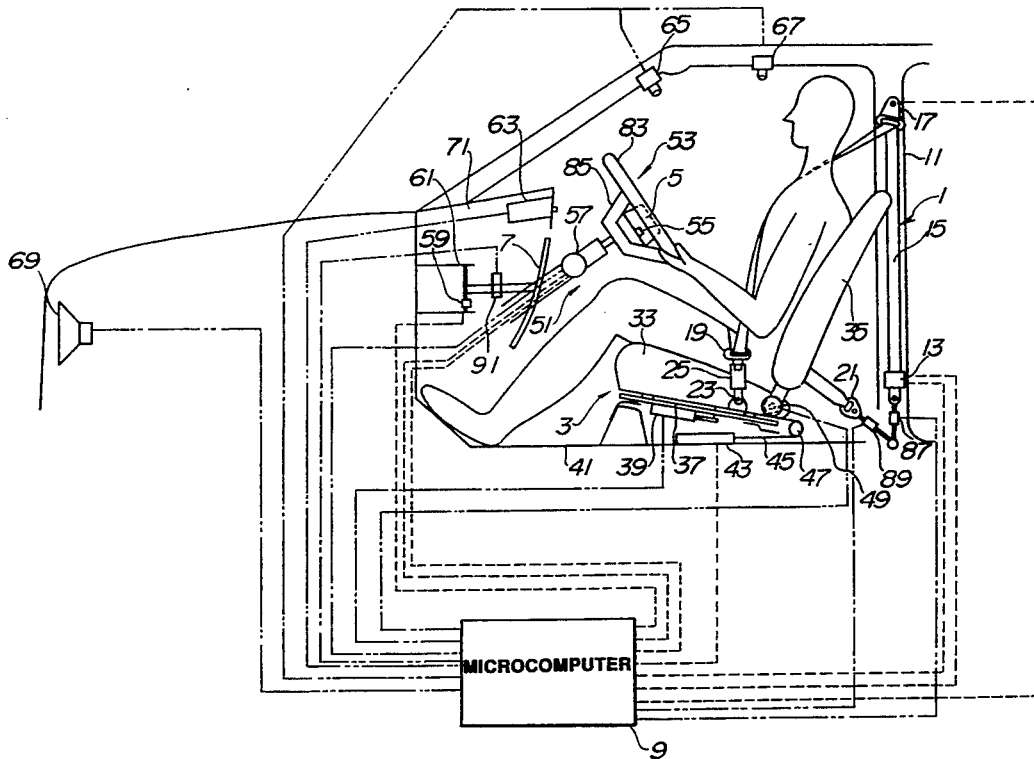
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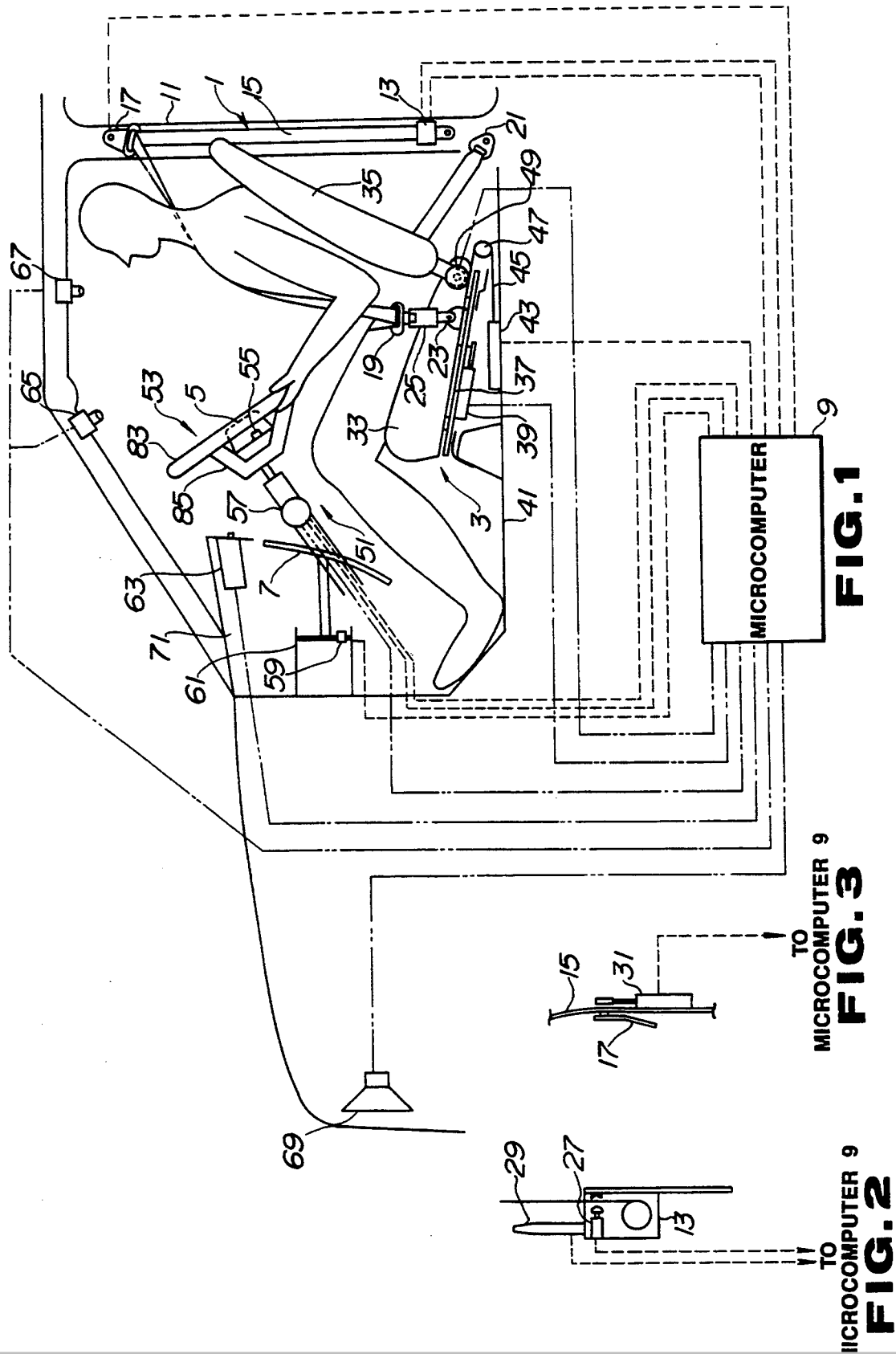
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Attorney, Agent, or Firm—Lowe, Price, LeBlanc & Becker

[57] **ABSTRACT**

An interior system for an automotive vehicle comprises interior elements, actuators for the interior elements, and sensors. When a vehicle collision data reveals a vehicle collision, a passenger's behavior is estimated in response to passenger data and first vehicle data collected, and a second vehicle data stored. A characteristic value of each interior element is computed in a manner to minimize an impact to a passenger in accordance with the passenger's behavior estimated. Then, the actuators are controlled in response to the characteristic value computed.

11 Claims, 17 Drawing Sheets





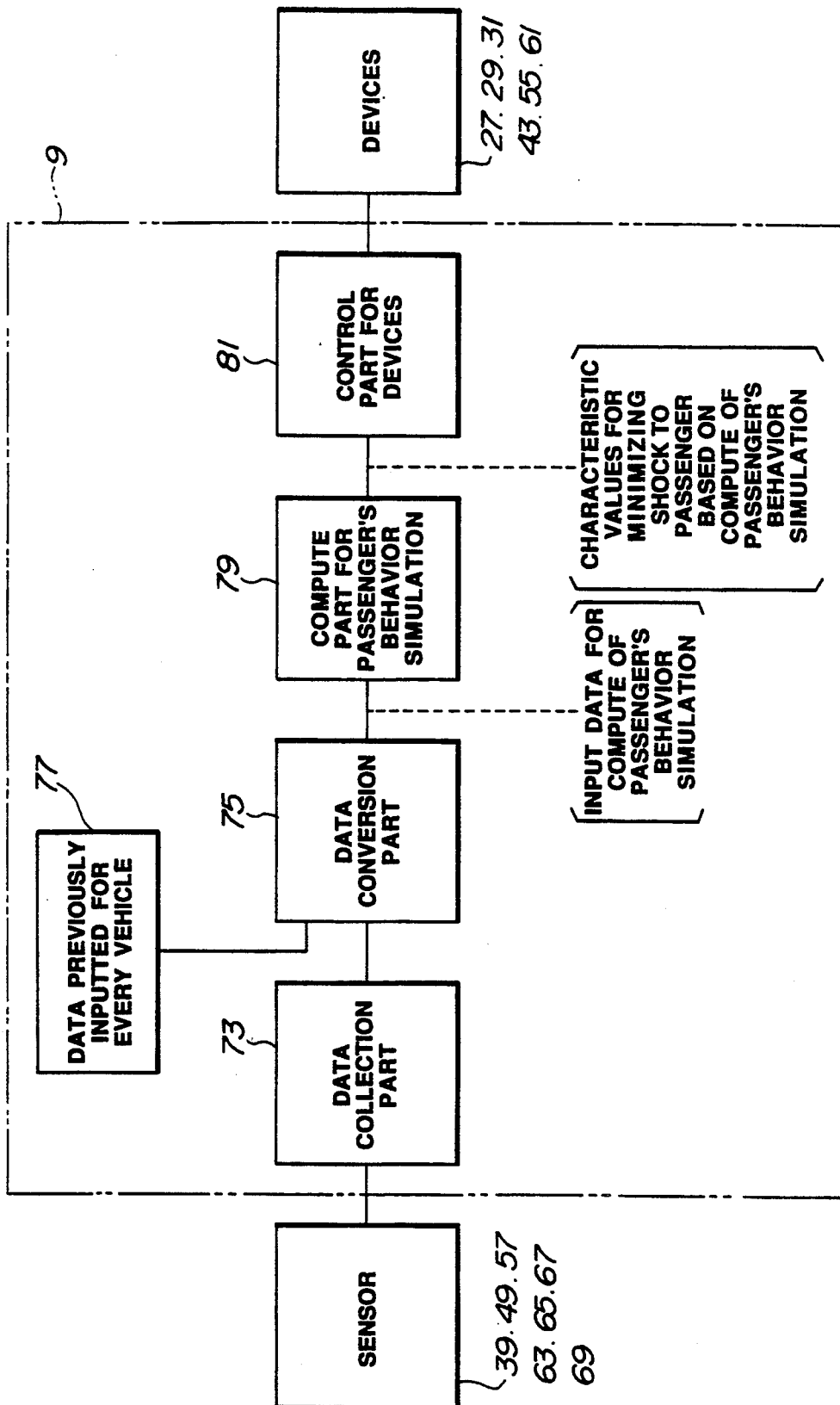


FIG. 4

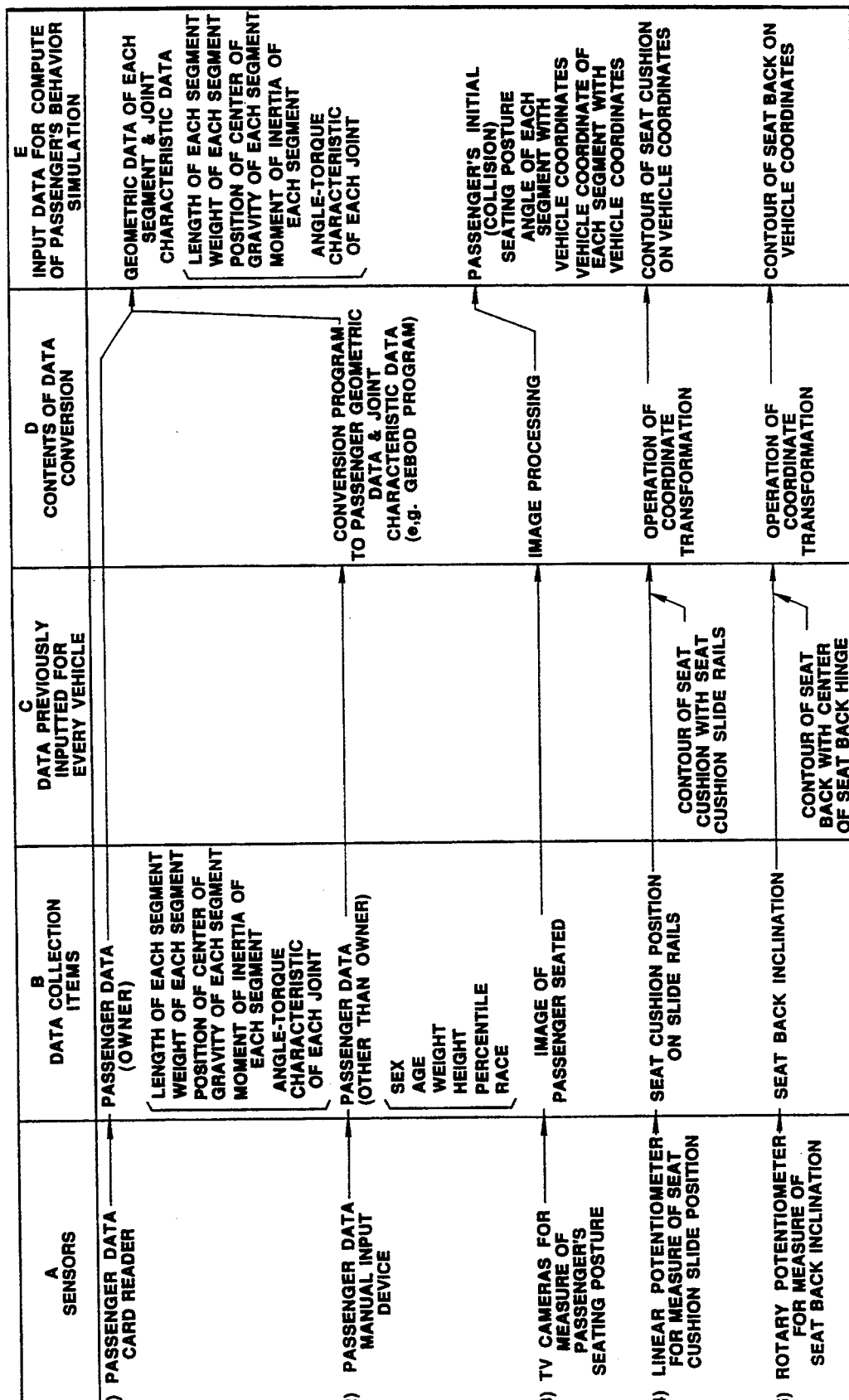


FIG. 5a

A SENSORS	B DATA COLLECTION ITEMS	C DATA PREVIOUSLY INPUTTED FOR EVERY VEHICLE	D CONTENTS OF DATA CONVERSION	E INPUT DATA FOR COMPUTE OF PASSENGER'S BEHAVIOR SIMULATION
ROTARY POTENTIOMETER FOR MEASURE OF TILT ANGLE OF STEERING WHEEL	TILT ANGLE	SHAPE OF STEERING WHEEL RIM & SPOKE WITH CENTER OF TILT ROTATION POSITION & DIRECTION OF DEVELOPMENT OF AIR BAG WITH CENTER OF TILT ROTATION	OPERATION OF COORDINATE TRANSFORMATION	POSITION OF AIR BAG ON VEHICLE COORDINATES DIRECTION OF DEVELOPMENT OF AIR BAG ON VEHICLE COORDINATES SHAPE OF WHEEL RIM ON VEHICLE COORDINATES SHAPE OF WHEEL SPOKE ON VEHICLE COORDINATES
INPUT DATA FOR COMPUTE OF PASSENGER'S BEHAVIOR SIMULATION(1)-(3)	PASSENGER'S INITIAL (COLLISION) SEATING POSTURE GEOMETRIC DATA OF EACH SEGMENT	SHOULDER BELT OUTER ANCHOR POSITION SHOULDER BELT INNER ANCHOR POSITION LAP BELT OUTER ANCHOR POSITION LAP BELT INNER ANCHOR POSITION	GEOMETRIC OPERATION	ATTACHMENT POINT OF PASSENGER-SEAT BELT ON PASSENGER COORDINATES SHOULDER BELT OUTER ANCHOR POSITION ON VEHICLE COORDINATES SHOULDER BELT INNER ANCHOR POSITION ON VEHICLE COORDINATES LAP BELT OUTER ANCHOR POSITION ON VEHICLE COORDINATES LAP BELT INNER ANCHOR POSITION ON VEHICLE COORDINATES
LASER RADAR	RELATIVE SPEED WITH CRASH OBJECT SHAPE OF CRASH OBJECT FIXED WALL VEHICLE POLE	G WAVEFORMS OF VEHICLE BODY CRUSH IN ACCORDANCE WITH VEHICLE COLLISION SPEED & CRASH OBJECT	SELECTION OF G WAVEFORM OF VEHICLE BODY CRUSH THE CLOSEST TO COLLISION CONDITION	ESTIMATED G WAVEFORM OF VEHICLE BODY CRUSH

FIG. 5b

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