



US005865263A

United States Patent [19]

[11] Patent Number: **5,865,263**

Yamaguchi et al.

[45] Date of Patent: **Feb. 2, 1999**

[54] **HYBRID VEHICLE**

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[21] Appl. No.: **609,762**
 [22] Filed: **Feb. 23, 1996**

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Assistant Examiner—Frank Vanaman
Attorney, Agent, or Firm—Lorusso & Loud

[30] Foreign Application Priority Data

[57] ABSTRACT

Feb. 28, 1995 [JP] Japan 7-063538

A hybrid vehicle has an engine and a generator/motor connected through a planetary gear unit to an output shaft and the output of the engine is distributed between the generator and the output shaft. The vehicle is smoothly started by a driving motor. When vehicle speed V reaches an engine starting speed V^* , the speed of generator/motor is changed to cause the engine to rotate, the engine is ignited and driving continues with the output torque produced by the engine supplemented by the driving motor. The hybrid vehicle allows for a smooth start and improved driving comfort even if an engine interruption scheme for halting the engine is employed, for example, halting the vehicle while waiting for a traffic signal to change.

[51] **Int. Cl.⁶** **B60K 6/00**
 [52] **U.S. Cl.** **180/65.2**
 [58] **Field of Search** 180/65.2, 65.3, 180/65.4, 65.6, 65.8; 364/424.026; 123/179.3

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19 Claims, 8 Drawing Sheets

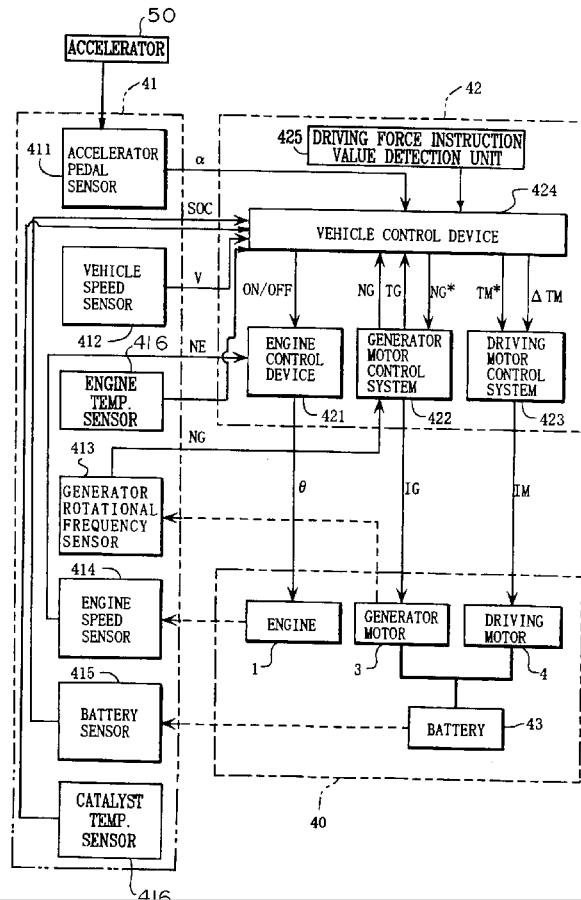
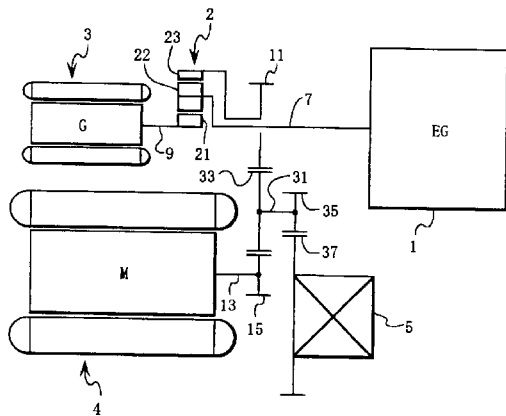


FIG. 1

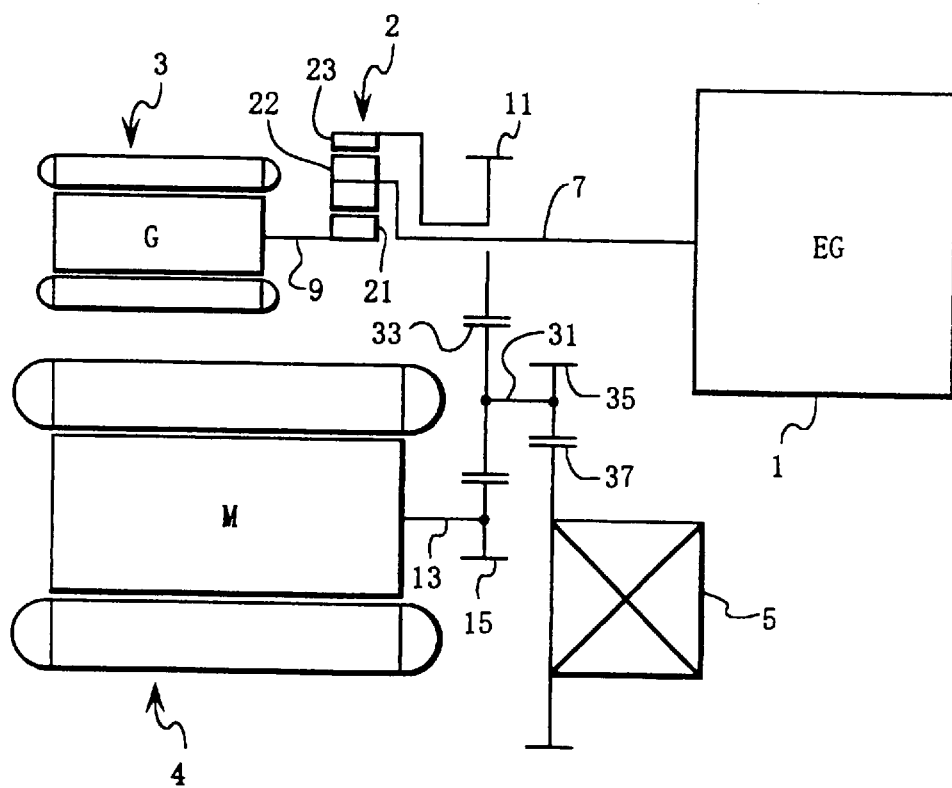


FIG. 2

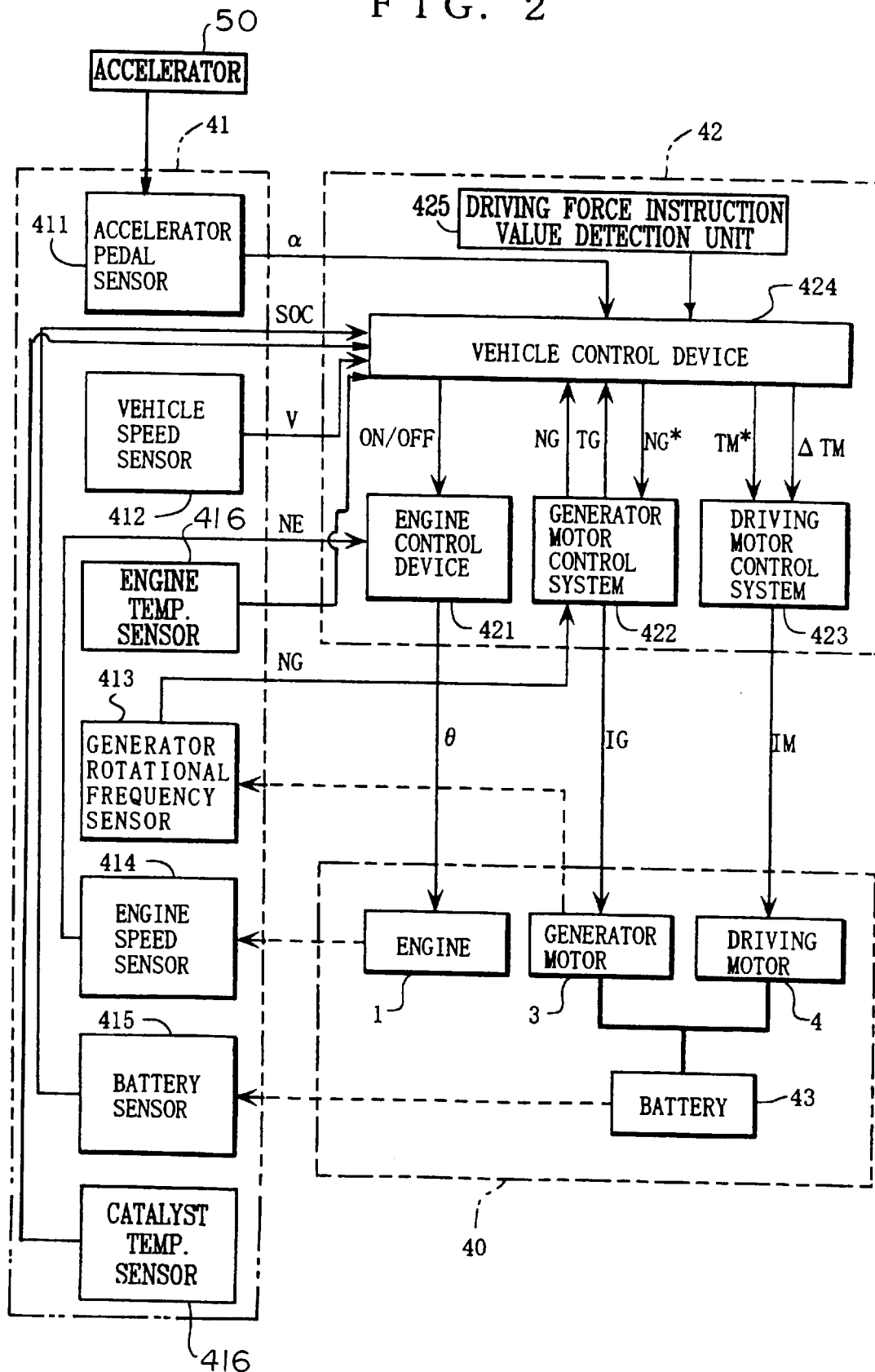


FIG. 3

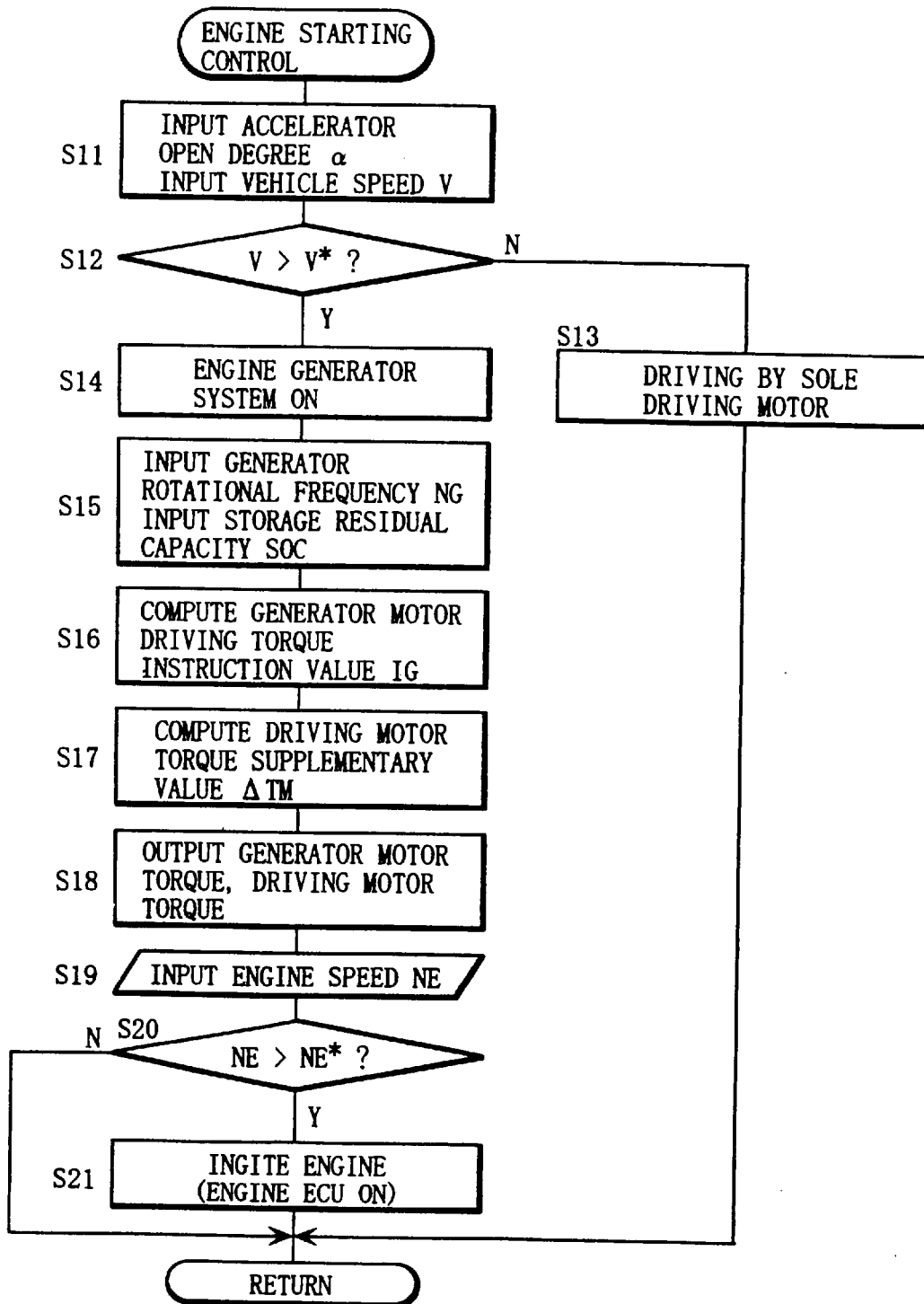


FIG. 4

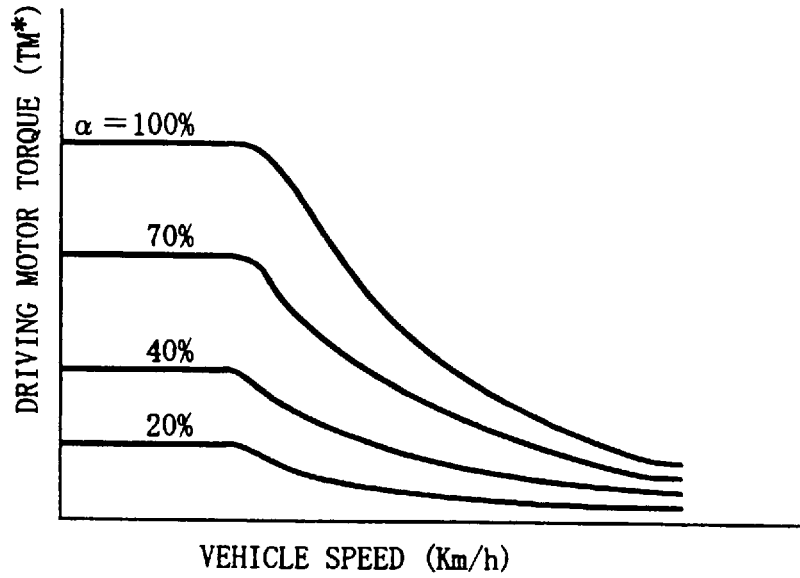
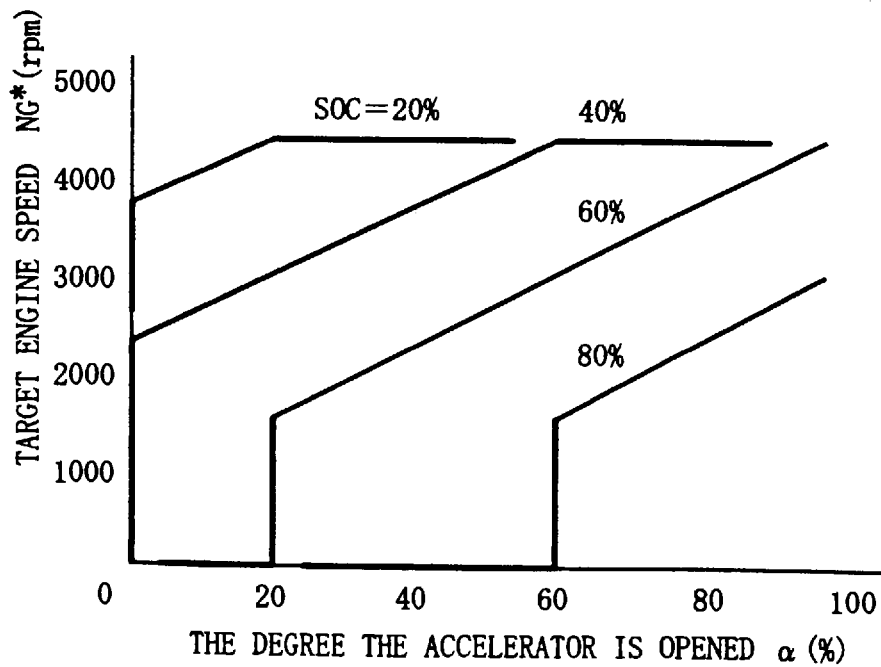


FIG. 5



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