



US005623104A

# United States Patent [19]

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Suga

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[54] **APPARATUS FOR TESTING POWER PERFORMANCE OF ELECTRIC MOTOR FOR ELECTRIC VEHICLE**

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[21] Appl. No.: **593,971**

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[22] Filed: **Jan. 30, 1996**

*Attorney, Agent, or Firm*—Oblon, Spivak, McClelland, Maier & Neustadt, P.C.

### [30] Foreign Application Priority Data

Mar. 10, 1995 [JP] Japan ..... 7-051385

### [57] ABSTRACT

[51] Int. Cl.<sup>6</sup> ..... **G01L 3/00**

[52] U.S. Cl. .... **73/862.18; 73/862.17; 73/117**

[58] Field of Search ..... 73/862.18, 862.17, 73/862.09, 117, 117.1; 364/551.01

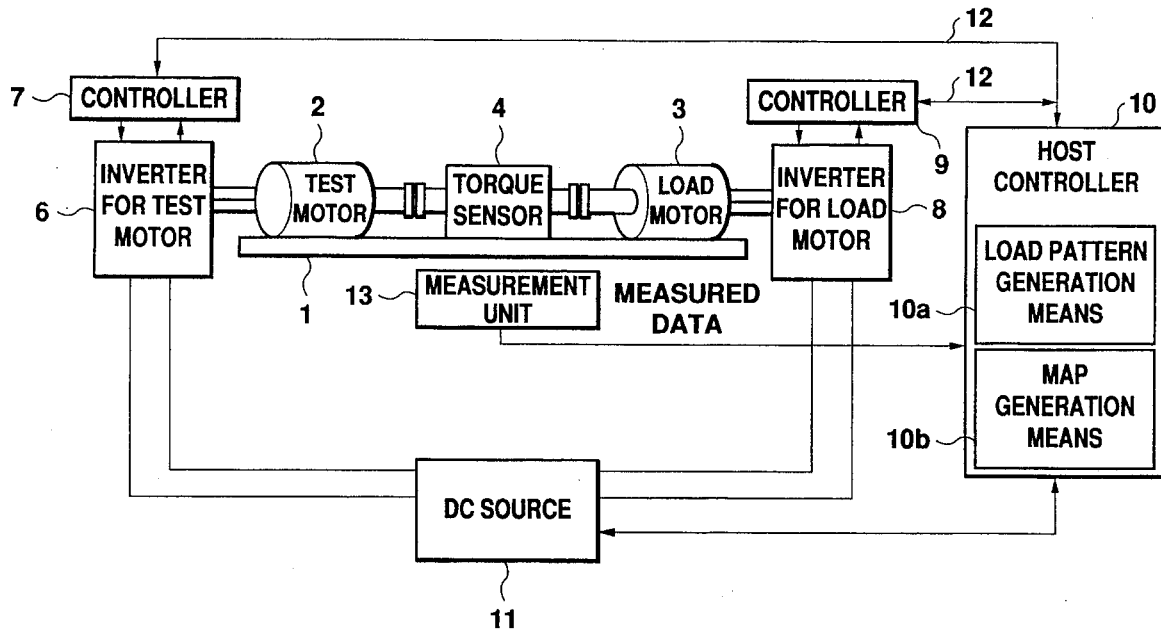
A test motor 2 is controlled by a controller 7 in accordance with travelling pattern (i.e. vehicle speed) data of an electric vehicle. A load motor 3 is controlled by a controller 9 in accordance with a load pattern. A host controller 10 generates the load pattern based on the vehicle speed pattern and factors of the electric vehicle, and synchronously outputs the vehicle speed pattern and the load pattern to the controller 7 and 9, respectively. Data detected by a torque sensor 4 or other measuring element are input to the host controller 10 to generate a two-dimensional map showing the relationship between the motor efficiency and motor output, or between the motor efficiency and revolution speed. Since the load pattern is generated and input in advance without using feedback control, test results can be obtained with high accuracy.

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6 Claims, 10 Drawing Sheets .



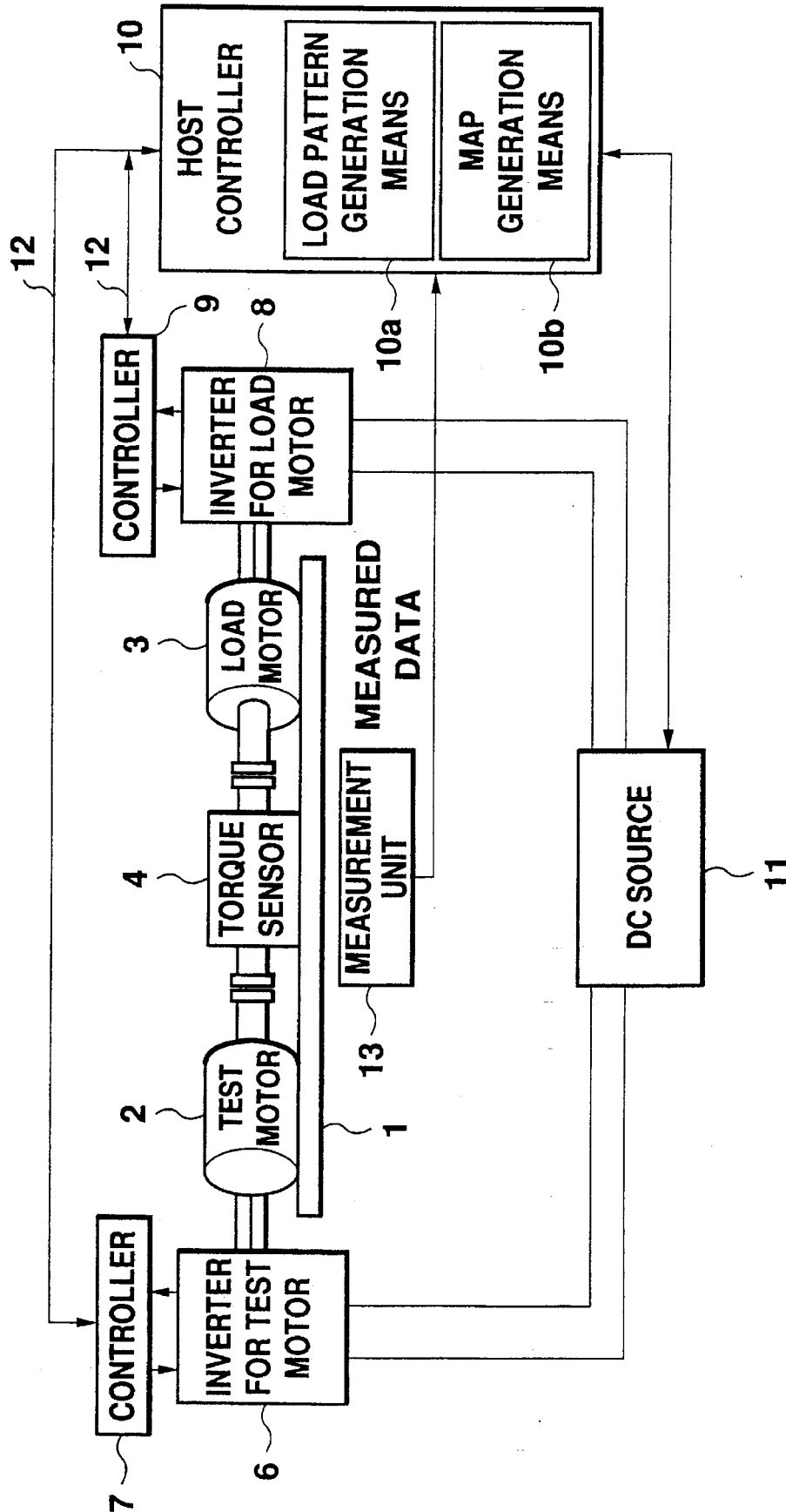
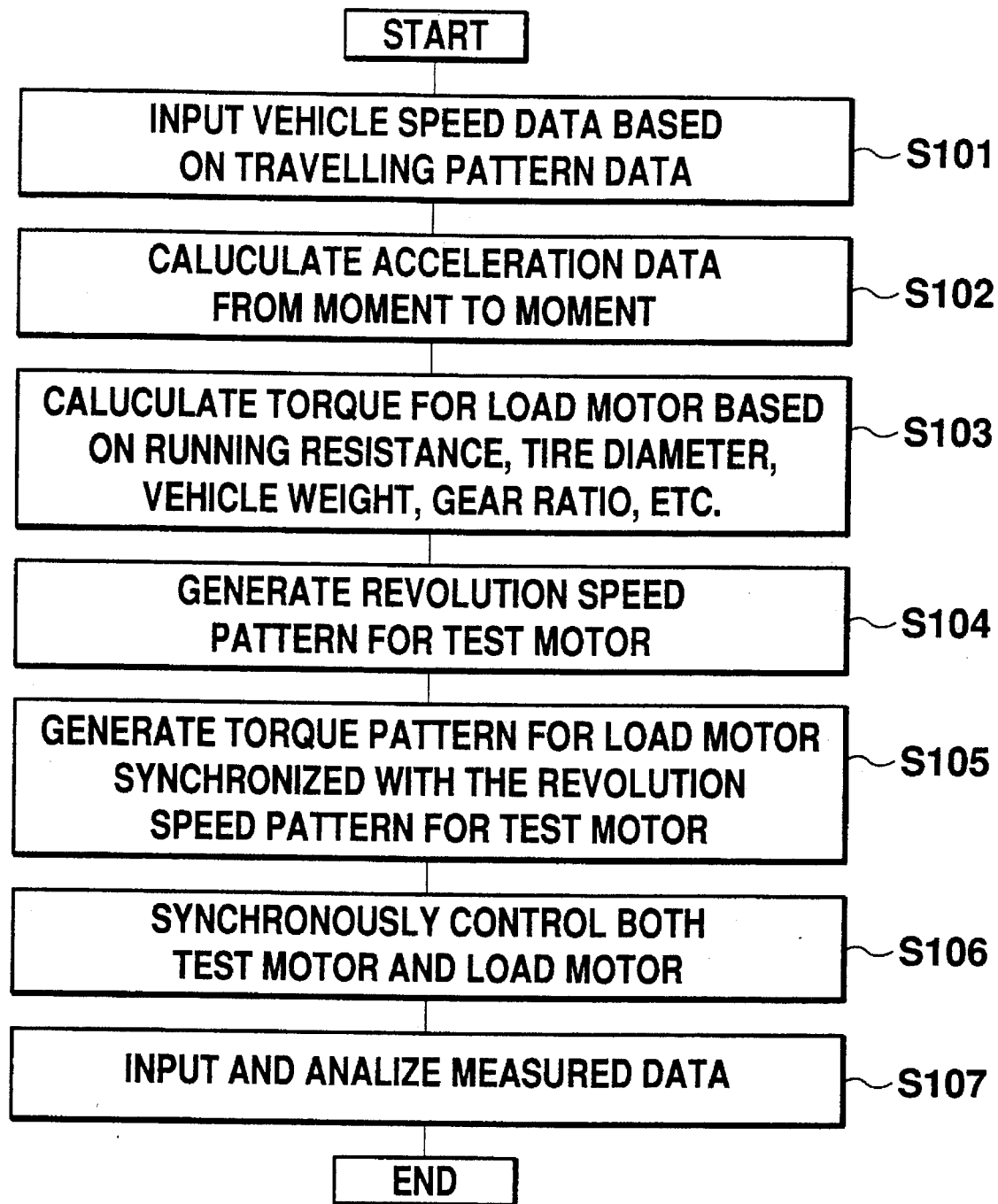


Fig. 1

**Fig. 2**

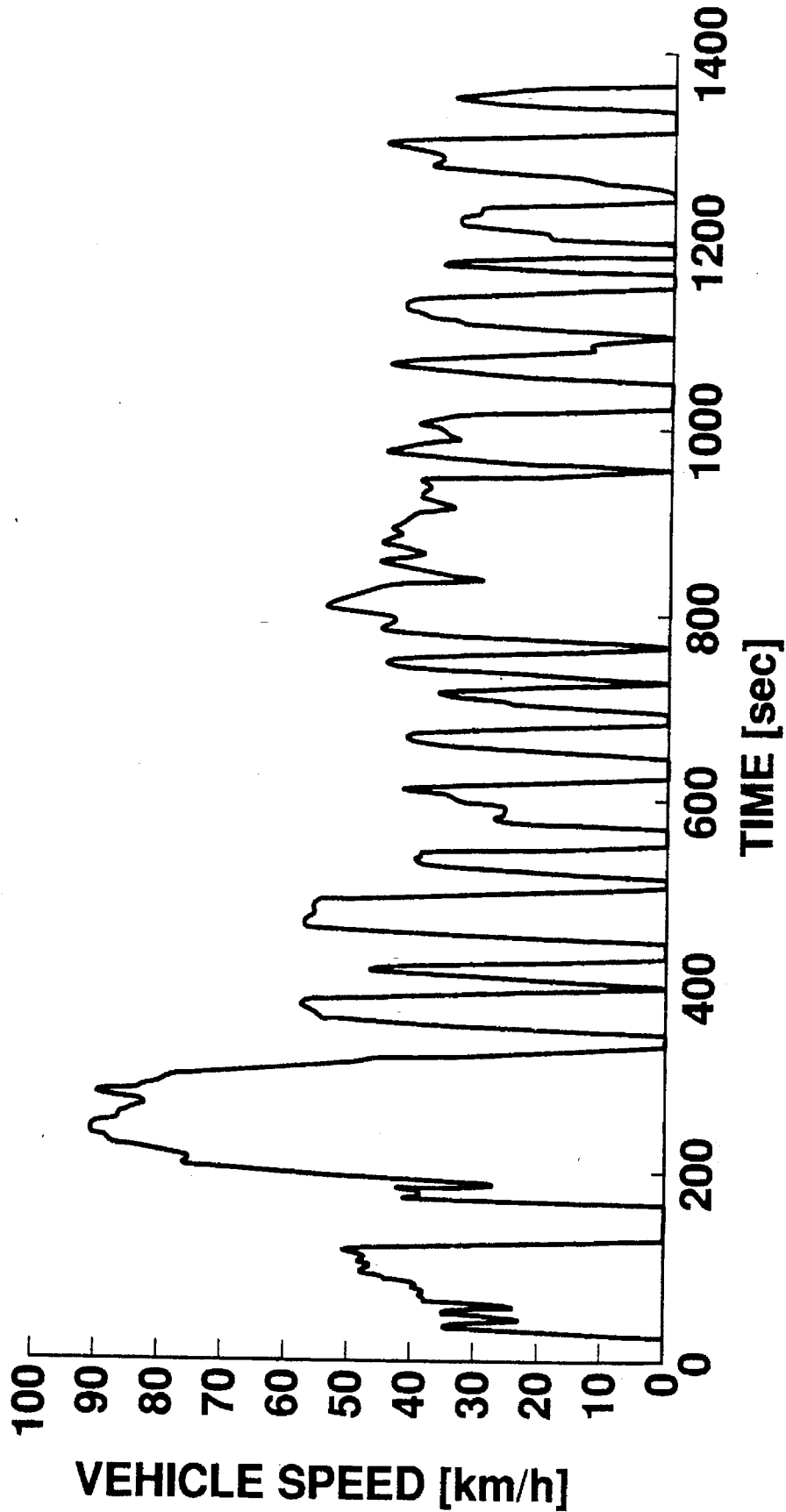


Fig. 3

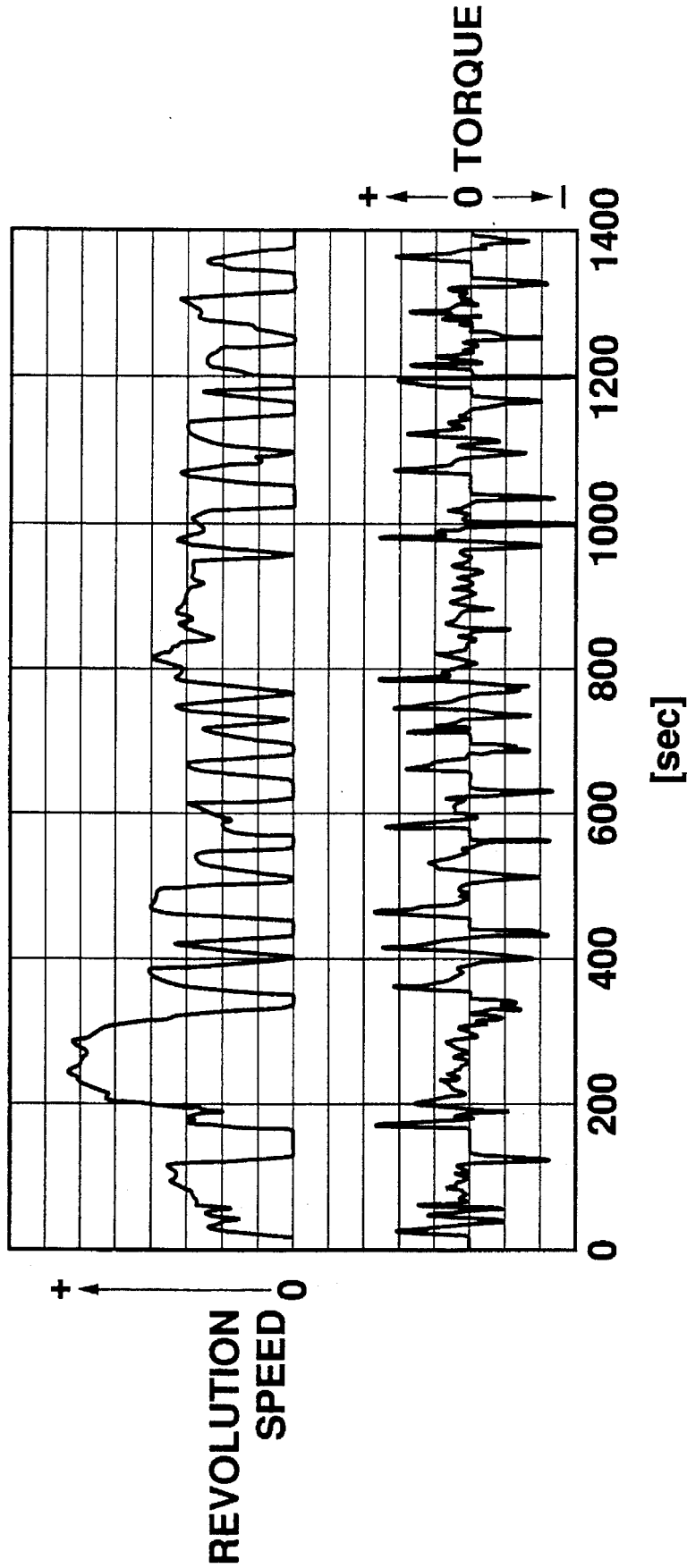


Fig. 4

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