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- (54) **HYBRID VEHICLES INCORPORATING TURBOCHARGERS**
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- (*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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- (52) **U.S. Cl.** **180/65.2; 60/602**
- (58) **Field of Search** 180/65.2, 65.3, 180/65.4, 65.8, 165; 60/706, 711, 716, 718, 602; 290/17, 40 R, 40 C; 322/16; 477/2, 3

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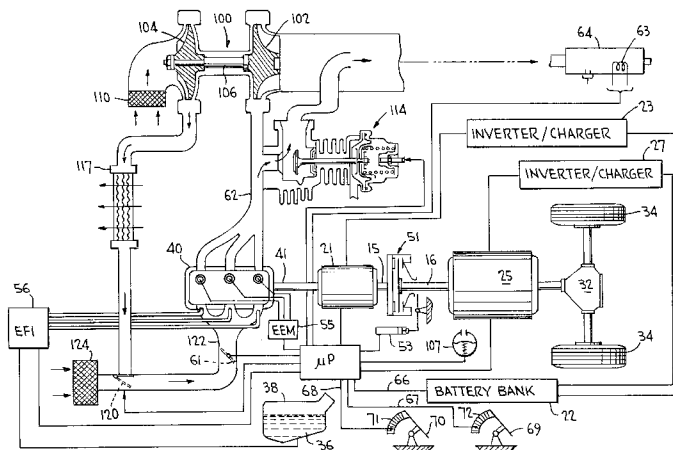
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(57) **ABSTRACT**

A hybrid vehicle comprising an internal combustion engine controllably coupled to road wheels of the vehicle by a clutch, and having a turbocharger that is operated only when extra power is needed for a extended time, a traction motor coupled to road wheels of said vehicle, a starting motor coupled to the engine, both motors being operable as generators, a battery bank for providing electrical energy to and accepting energy from said motors, and a microprocessor for controlling these components, is operated in different modes, depending on its instantaneous torque requirements, the state of charge of the battery bank, and other operating parameters. The mode of operation is selected by the microprocessor in response to a control strategy.

15 Claims, 5 Drawing Sheets



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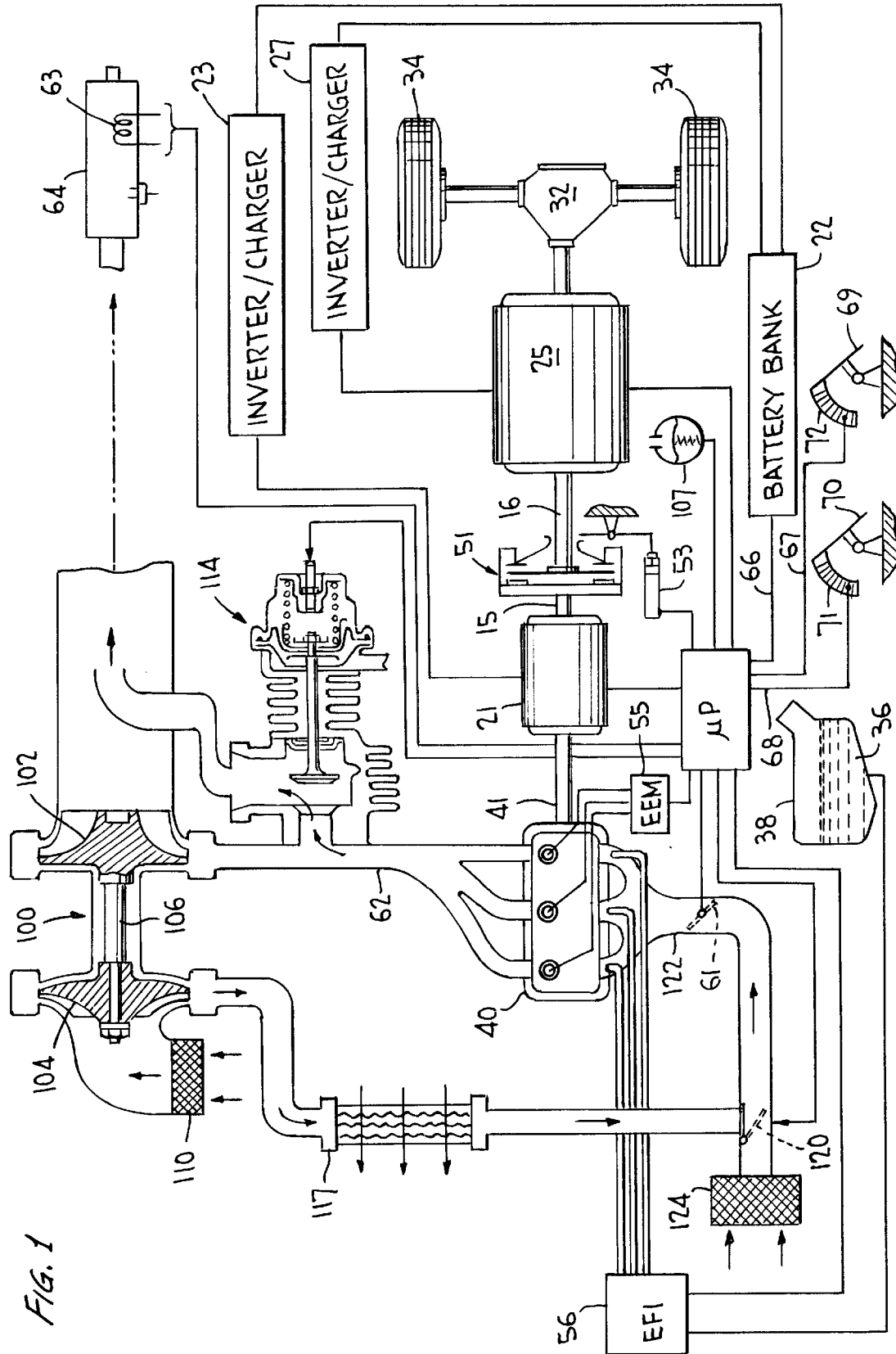
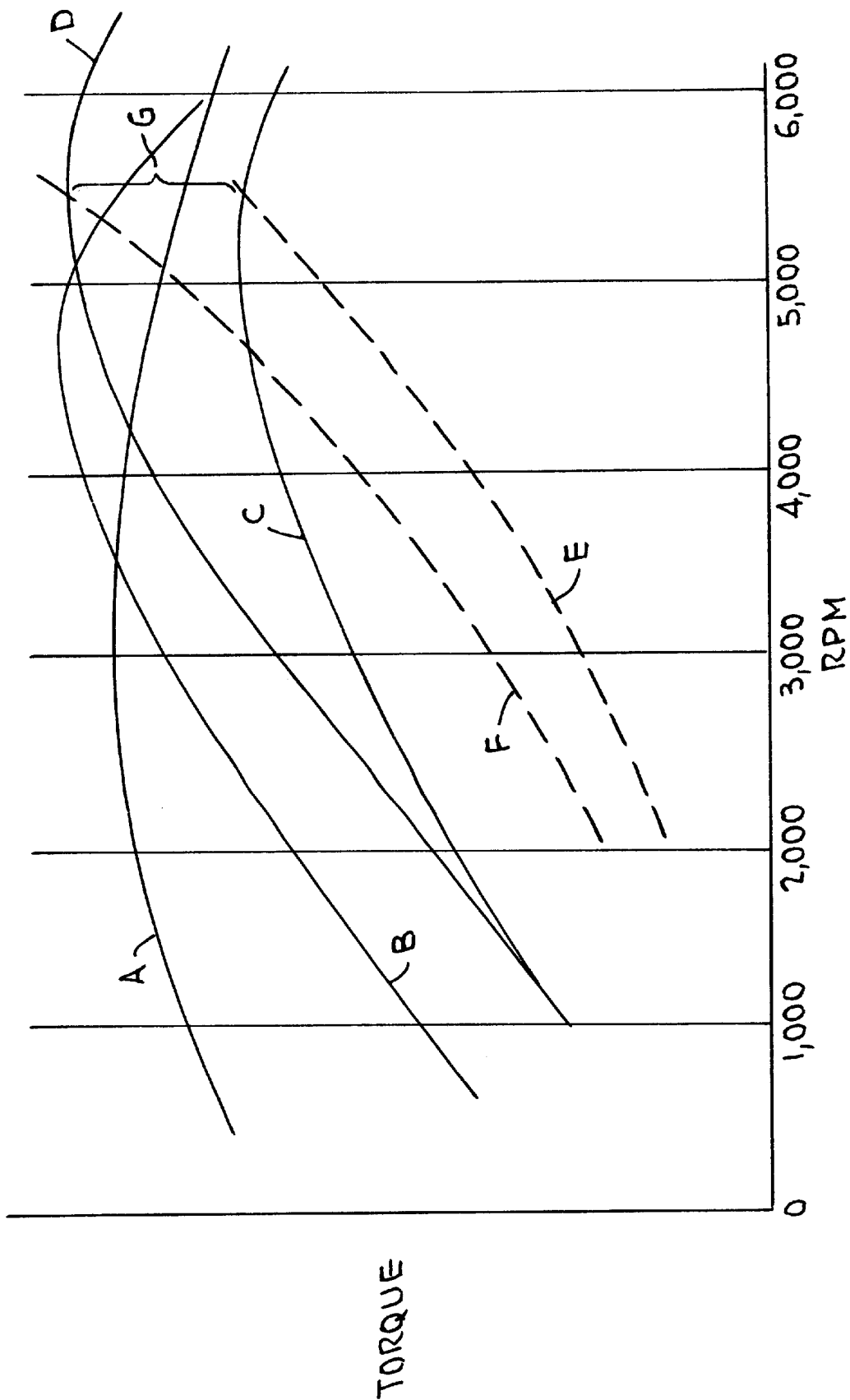


FIG. 1

FIG. 2



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