[54] **CONTROL APPARATUS FOR ENGINE/ELECTRIC HYBRID VEHICLE**

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[57] **ABSTRACT**

A hybrid vehicle comprises an internal combustion engine, a relatively large motor/generator and a relatively small motor/generator, which are controlled by a microcomputer based on the required torque of the vehicle as a function of time. When the engine is permitted to run, it is always operated in that region which minimizes fuel consumption. If the torque of the engine is too low to drive the vehicle, the relatively large motor is energized to make up for the deficiency. When the engine produces excess torque, the relatively large motor/generator absorbs the excess and is operated as a generator to generate electricity. Braking torque is usually obtained by operating the relatively large motor/generator as a generator. When braking torque is insufficient, the relatively small motor/generator is also operated as a generator to make up for the deficiency.
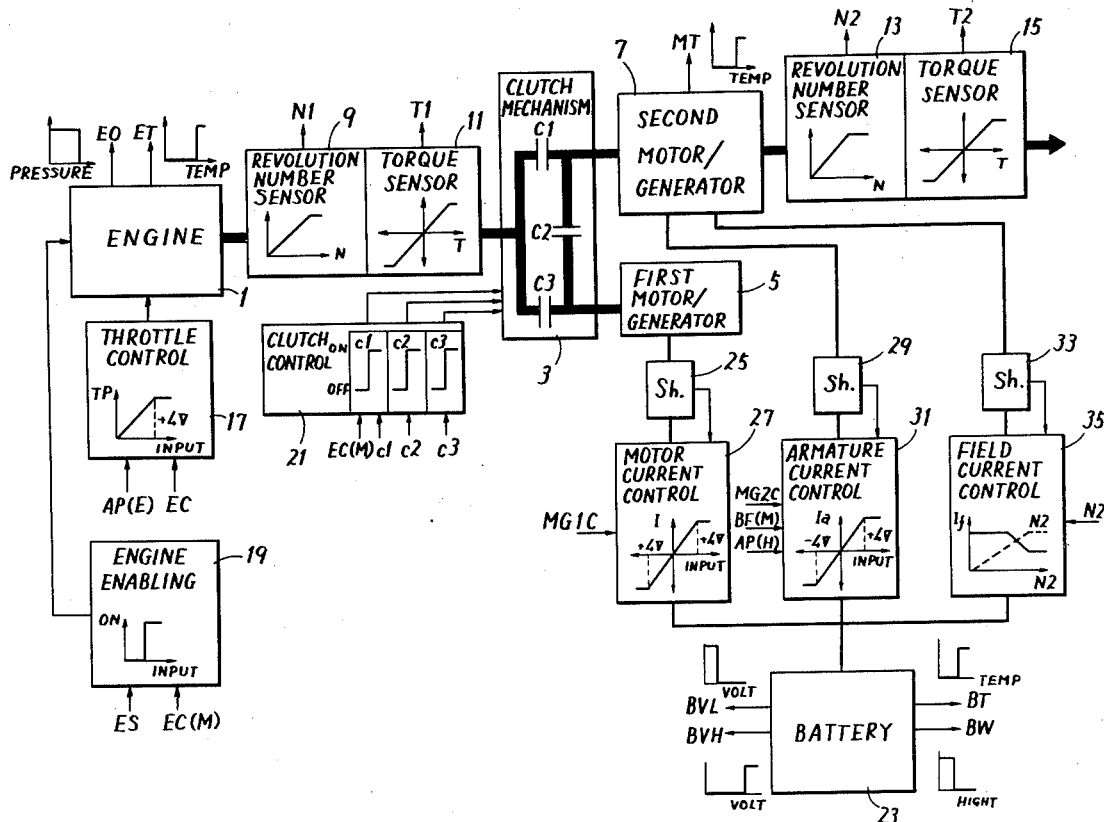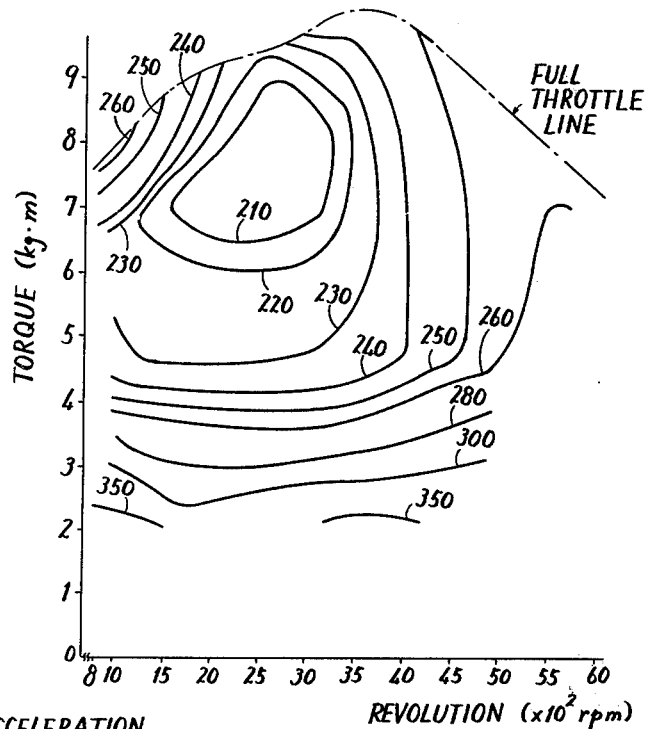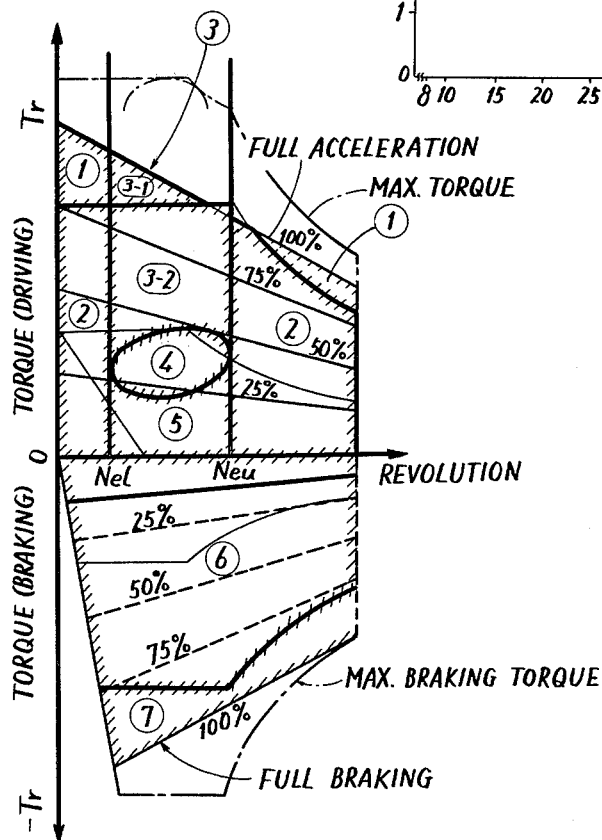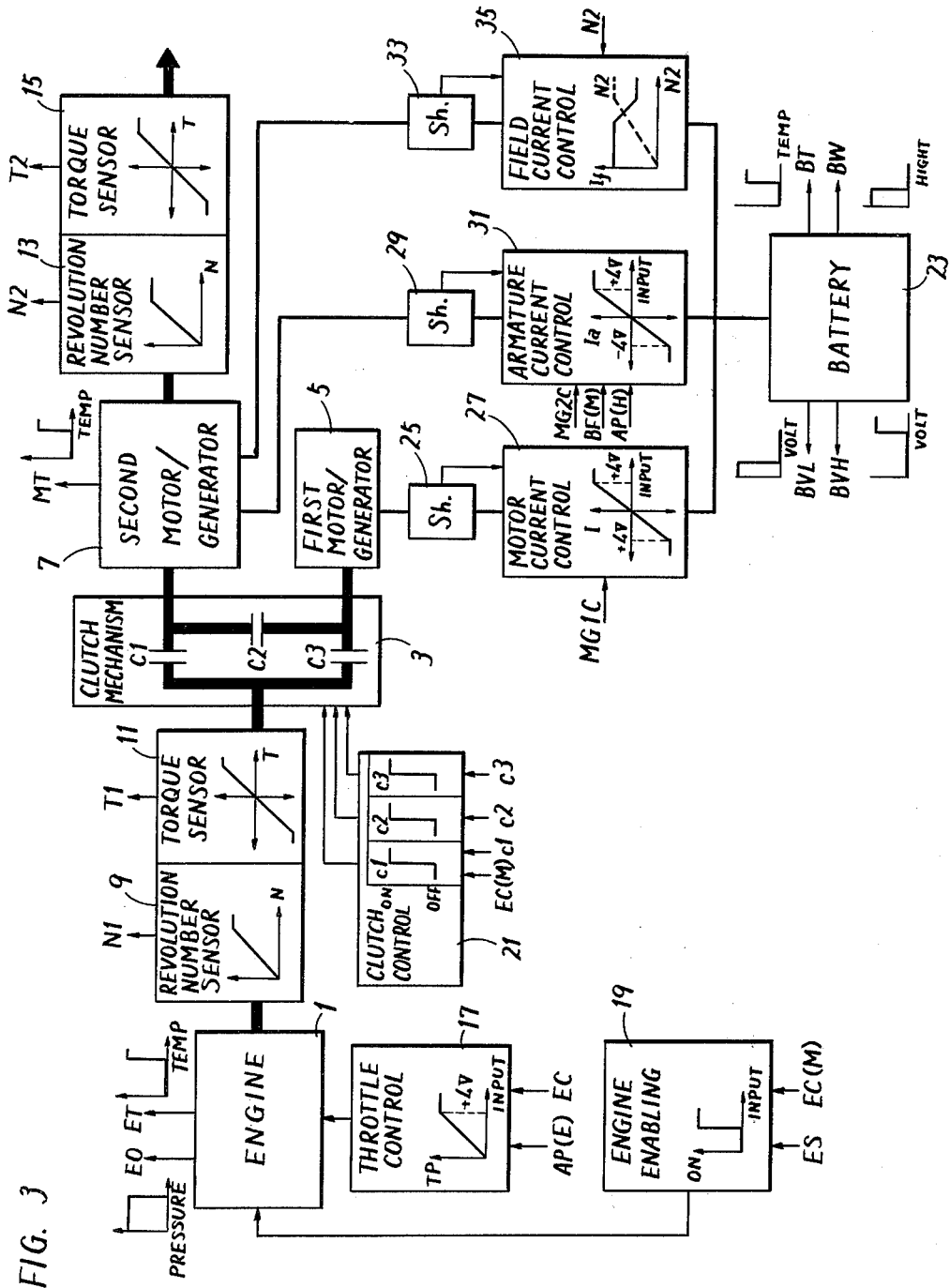
26 Claims, 27 Drawing Figures

FIG. 1

FIG. 2

FIG. 3

FIG. 4

FIG. 5

FIG. 6A

AUTO 71	ENGINE INCAPABLE 71e	MOTOR INCAPABLE 71m	GENERATOR INCAPABLE 71g
MANUAL 73	ENGINE MODE 73e	MOTOR MODE 73m	RESET / CHECK 75
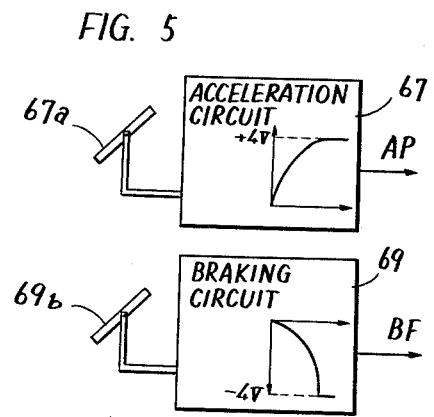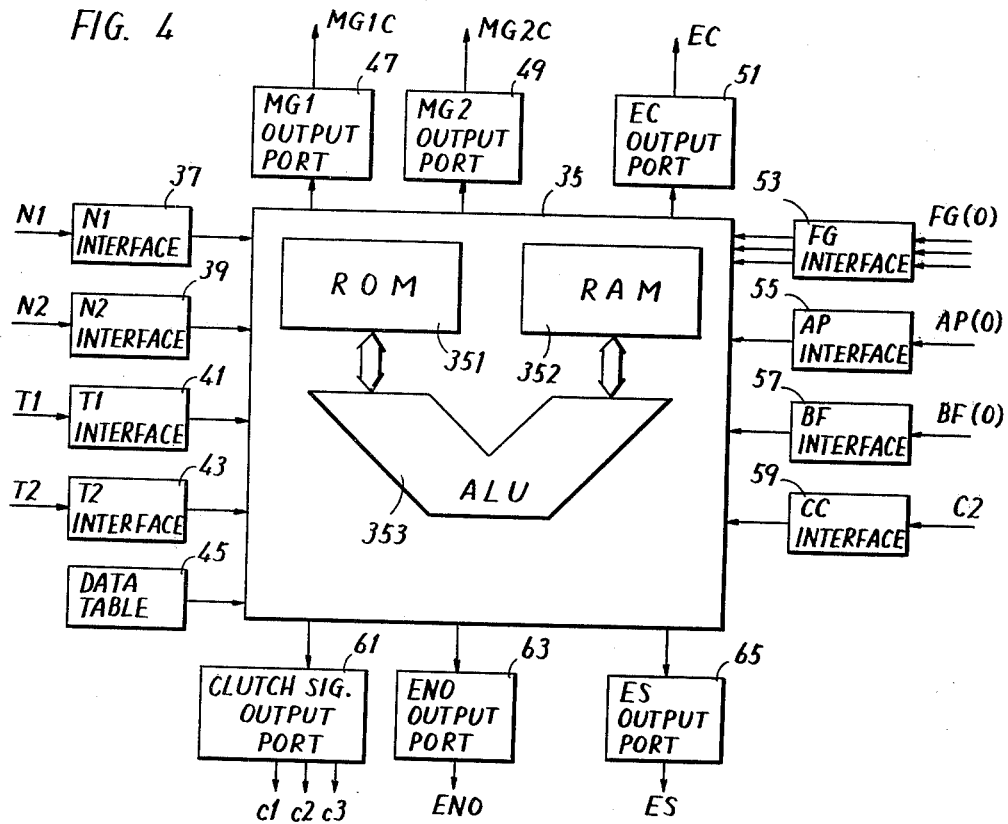
FIG. 6B

FIG. 7

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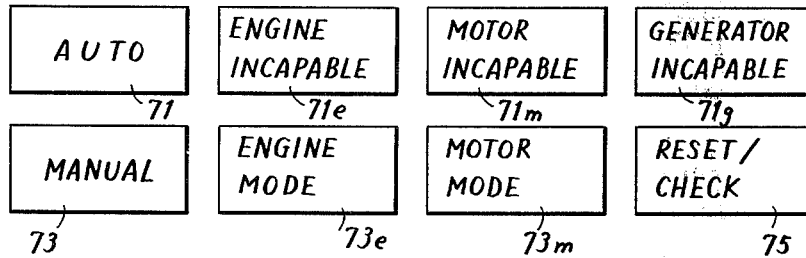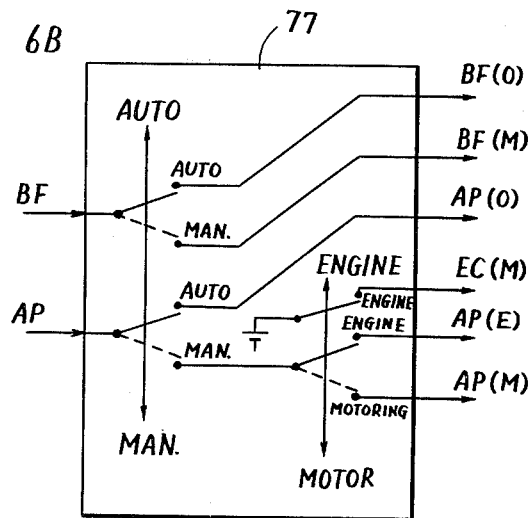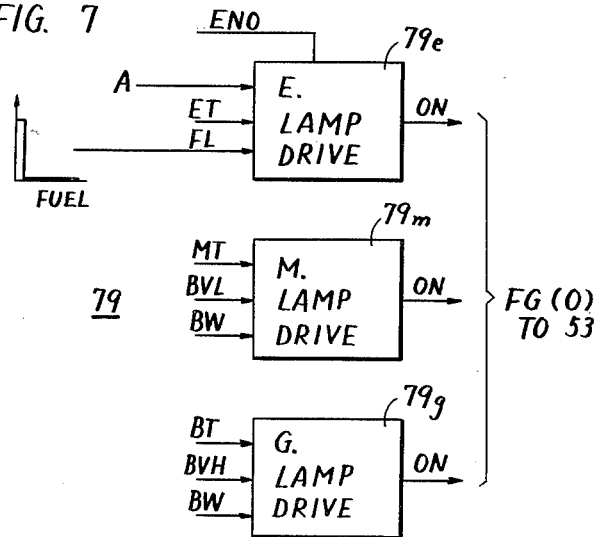
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