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(54) HYBRID ENERGY OFF HIGHWAY VEHICLE ELECTRIC POWER STORAGE SYSTEM AND METHOD

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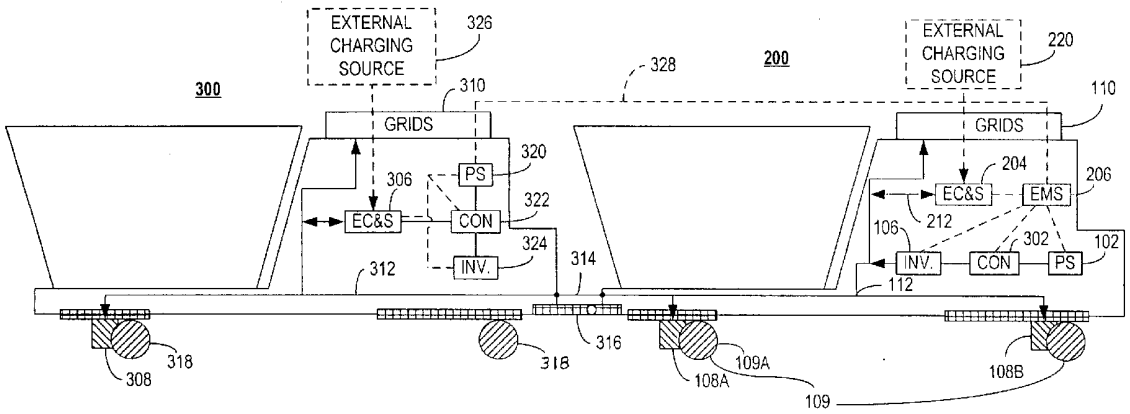
(57) **ABSTRACT**

An electrical energy capture system for use in connection with a hybrid energy off highway vehicle system of a off highway vehicle. The hybrid energy off highway vehicle system includes an off highway vehicle, a primary power source, and an off highway vehicle traction motor propelling the off highway vehicle in response to the primary electric power. The off highway vehicle traction motor has a dynamic braking mode of operation generating electrical energy. The electrical energy capture system includes an energy management processor carried on the off highway vehicle. The capture system also includes an off highway vehicle electric generator connected to and driven by the primary power source for selectively supplying primary electric power, wherein the generator is responsive to said processor. An electrical energy storage device is carried on a off highway vehicle and is in electrical communication with the off highway vehicle traction motor. The storage device is responsive to the processor, selectively stores electrical energy generated in the dynamic braking mode, and selectively provides secondary electric power from said stored electricity electrical energy to the off highway vehicle traction motor. The off highway vehicle traction motor is responsive to the secondary electric power. The processor provides a first control signal to the electrical energy storage device to control the selective storing of the electrical energy generated in the dynamic braking mode, and to control the selective providing of secondary electric power to the off highway vehicle traction motor. The processor also provides a second control signal to the generator for controlling the selective supplying of primary electric power to the off highway vehicle traction motor.



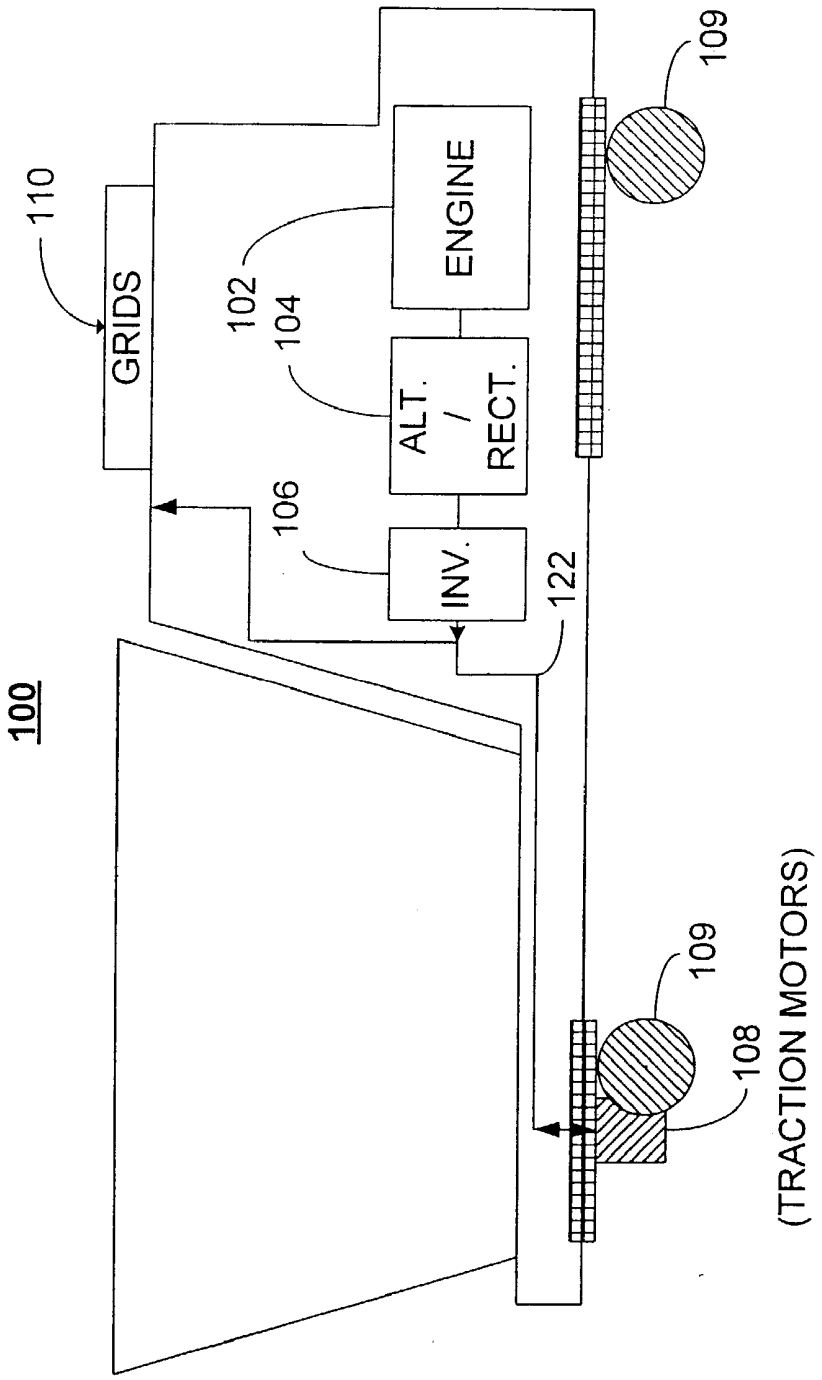


FIG. 1A
PRIOR ART

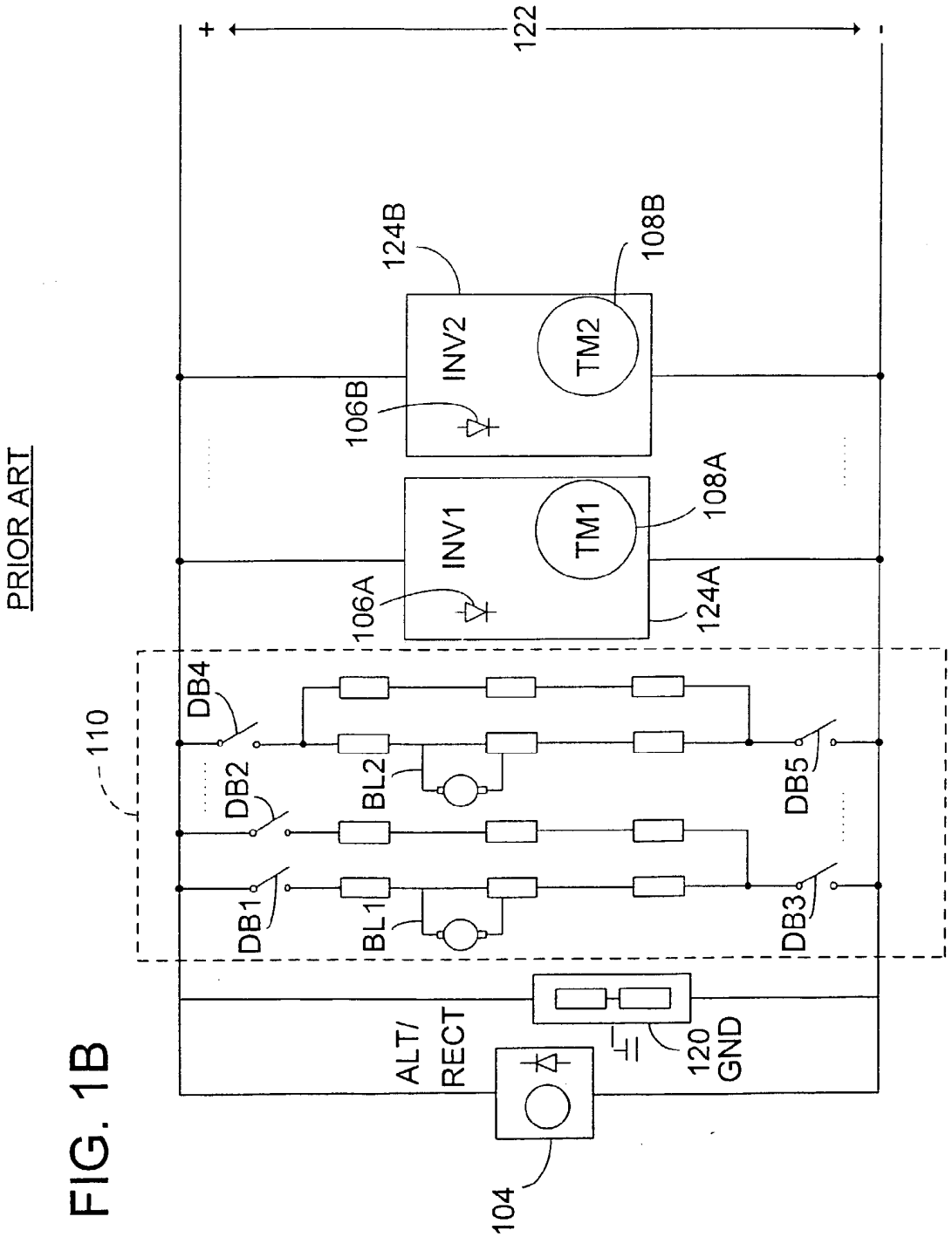


FIG. 1B

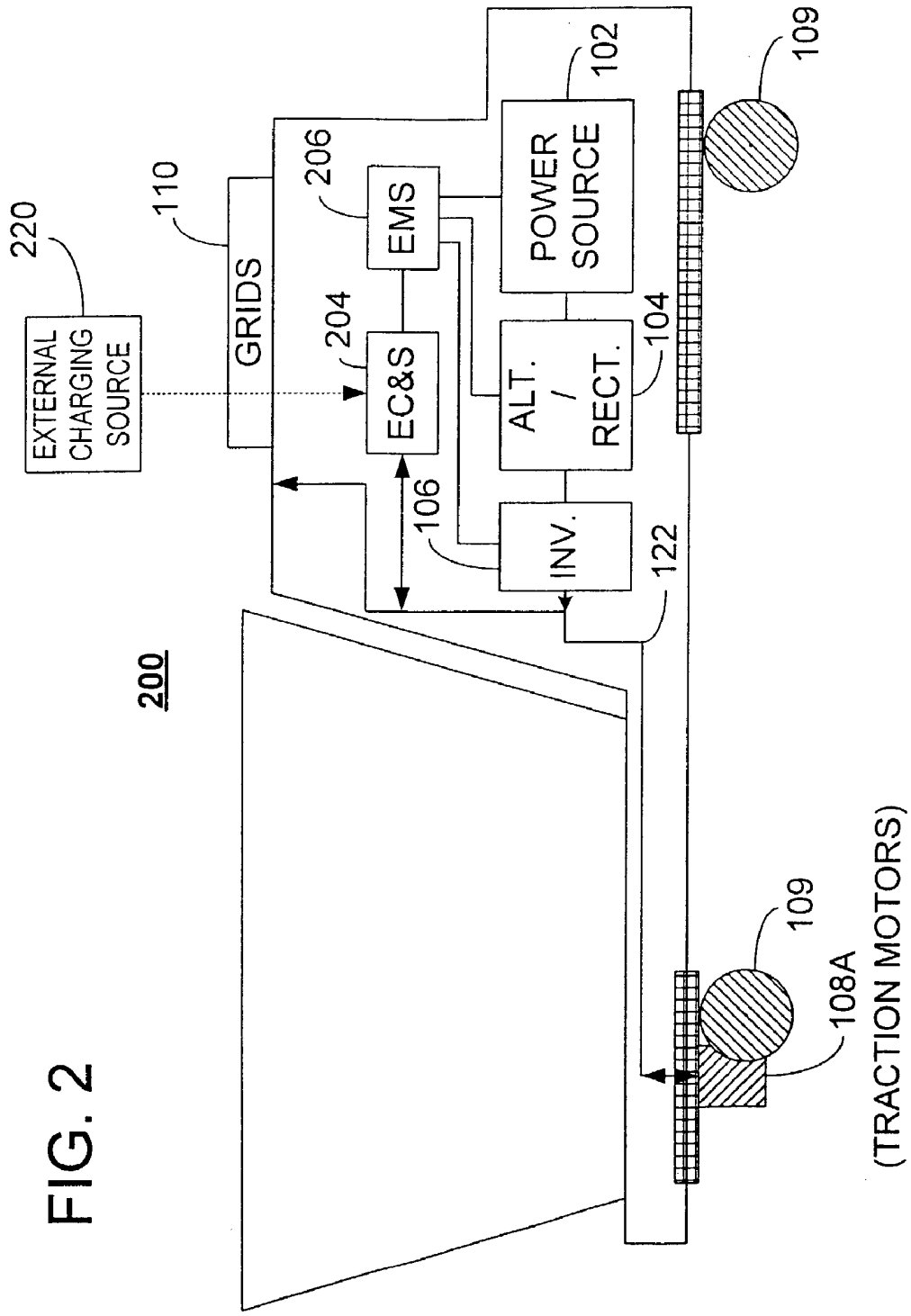


FIG. 2

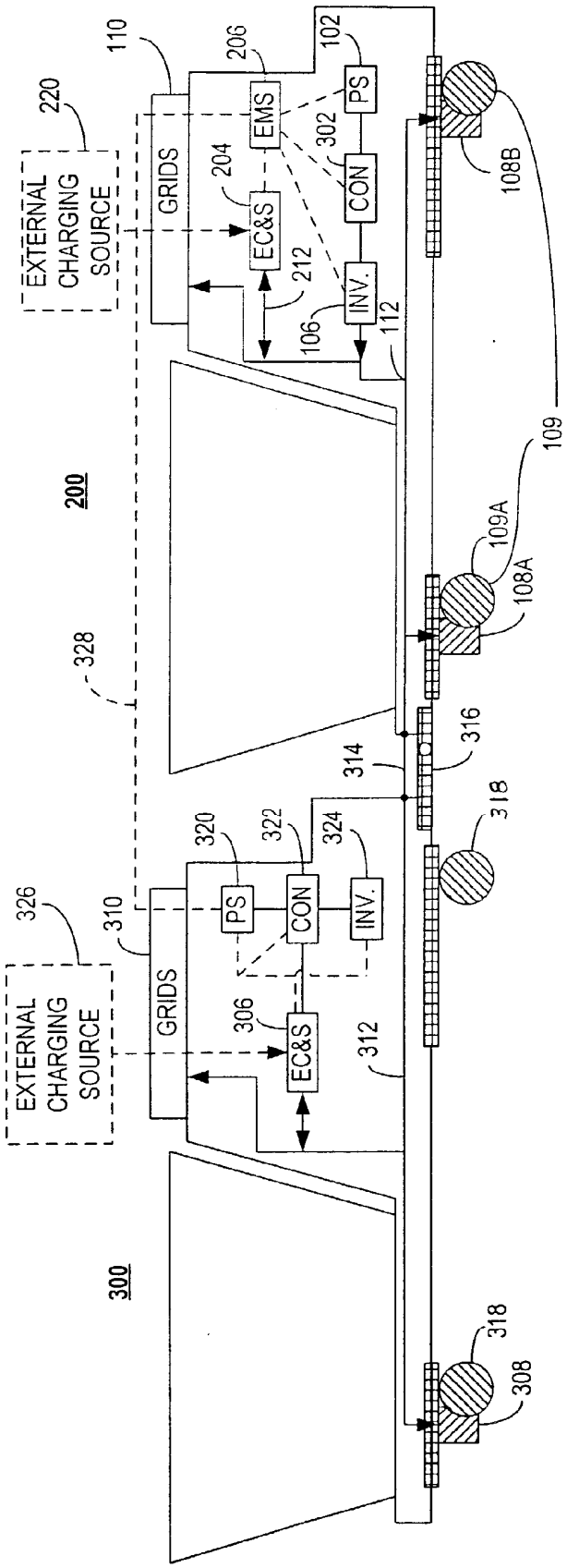


FIG. 3

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