United States Patent [19]



mileu States I ale

Lateur et al.

[54] HYBRID PARALLEL ELECTRIC VEHICLE

- [75] Inventors: Michel J. Lateur, Redwood City; Daniel P. Pliskin, Palo Alto, both of Calif.
- [73] Assignee: Nevcor, Inc., Stanford, Calif.
- [21] Appl. No.: **372,173**
- [22] Filed: Jan. 12, 1995
- [51] Int. Cl.⁶ B60K 1/00
- [52] U.S. Cl. 180/65.2; 180/65.4; 180/165

[56] References Cited

U.S. PATENT DOCUMENTS

3,122,696 2/1964 Graybeal et al. 322/20

[11] **Patent Number:** 5,823,280

[45] **Date of Patent:** Oct. 20, 1998

| 3,566,717 | 3/1971 | Berman et al 74/859 |
|-----------|---------|------------------------|
| 4,155,019 | 5/1979 | Weghaupt 310/61 |
| 4,187,436 | 2/1980 | Etienne 290/27 |
| 4,407,132 | 10/1983 | Kawakatsu et al 60/716 |
| 5,067,932 | 11/1991 | Edwards 475/5 |
| 5,365,153 | 11/1994 | Fujita et al 318/34 |

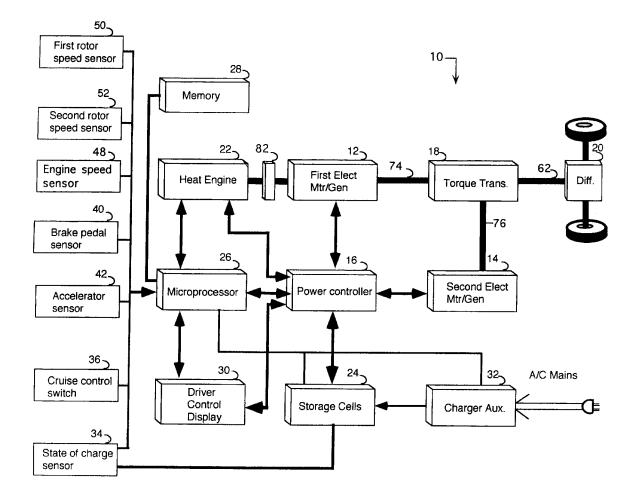
Primary Examiner-Richard M. Camby

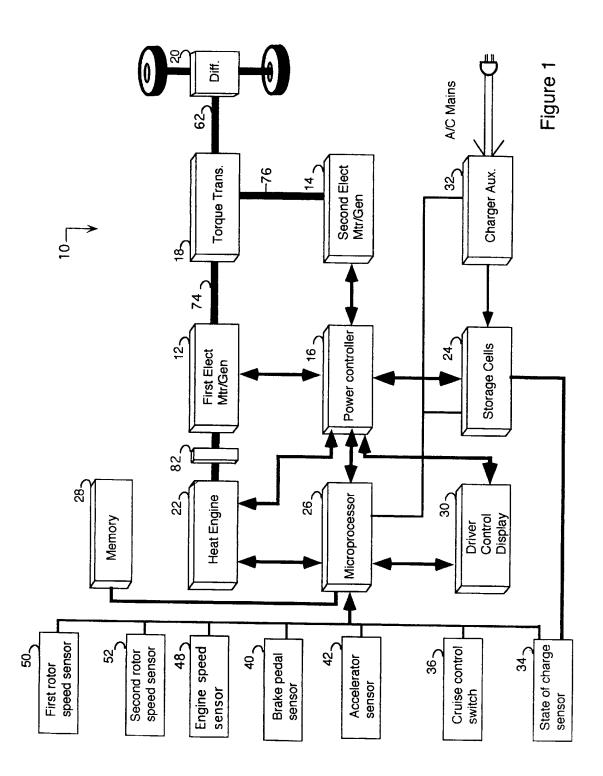
Attorney, Agent, or Firm—Flehr Hohbach Test Albritton & Herbert LLP

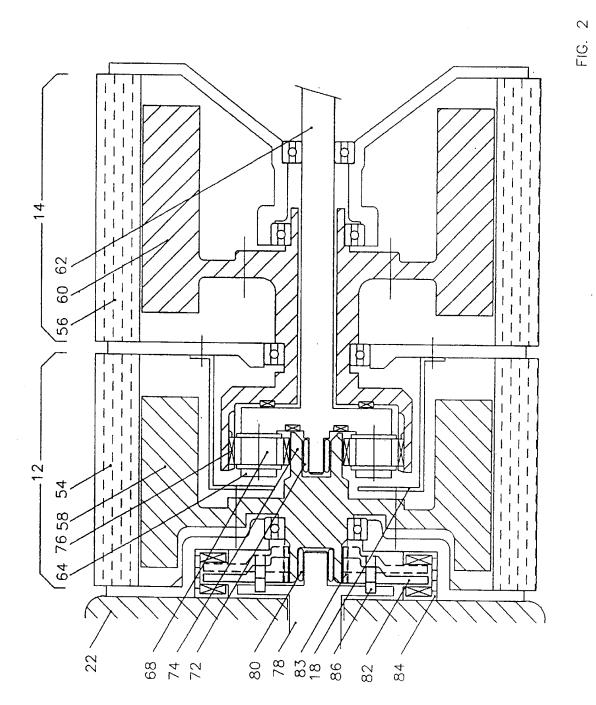
[57] ABSTRACT

A hybrid electric drive system is described that includes a heat engine having a drive shaft, and two electric motor/generators having rotors that are coaxially connected to the drive shaft. A control arrangement for these elements is also described that provides a relatively simple combined operation for driving a vehicle.

19 Claims, 9 Drawing Sheets







DOCKET A L A R M Find authenticated court documents without watermarks at <u>docketalarm.com</u>.

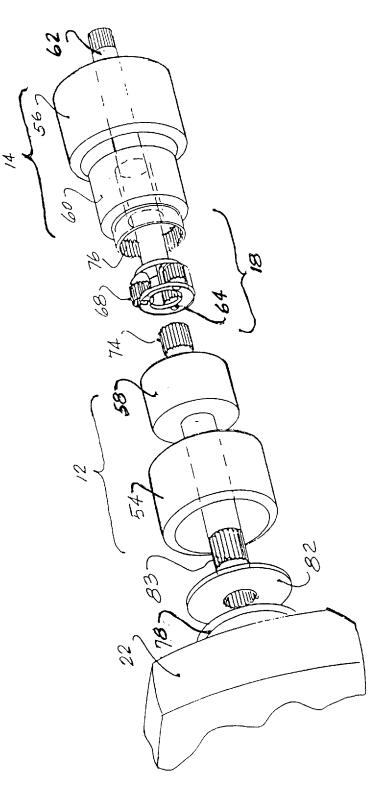
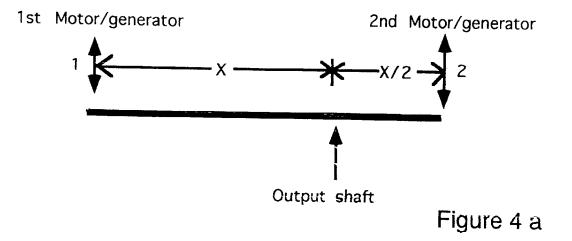


Figure 3

DOCKET A L A R M Find authenticated court documents without watermarks at <u>docketalarm.com</u>.



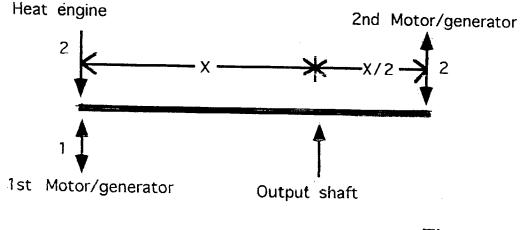


Figure 4 b

DOCKET A L A R M Find authenticated court documents without watermarks at <u>docketalarm.com</u>.

DOCKET A L A R M



Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.