

[54] METHOD AND APPARATUS FOR CALCULATING CORRECTED VEHICLE FUEL ECONOMY

[75] Inventor: Donald L. Stephens, La Conner, Wash.

[73] Assignee: Paccar Inc., Bellevue, Wash.

[21] Appl. No.: 29,271

[22] Filed: Mar. 23, 1987

[51] Int. Cl.⁴ G01F 9/00

[52] U.S. Cl. 364/442; 73/113; 73/114

[58] Field of Search 73/112, 113, 114, 117.3; 364/442, 565, 424; 340/52 R

[56] References Cited

U.S. PATENT DOCUMENTS

- 1,595,960 8/1926 Brown .
- 3,153,143 10/1964 Fogarty .
- 3,686,935 8/1972 May 73/112
- 3,908,451 9/1975 Walker et al. 73/114
- 4,050,295 9/1977 Harvey 364/442 X
- 4,113,046 9/1978 Arpino 180/105 E
- 4,129,034 12/1978 Niles et al. 73/117.3
- 4,173,887 11/1979 Fiala 73/114
- 4,210,908 7/1980 Sakakibara 340/754
- 4,247,757 1/1981 Crump, Jr. 235/615
- 4,354,173 10/1982 Kuhn et al. 340/52 F
- 4,475,380 10/1984 Colovas et al. 73/112 X
- 4,564,905 1/1986 Masada et al. 364/442 X
- 4,570,226 2/1986 Aussedat 364/442
- 4,647,902 3/1987 Teshima et al. 340/52 R

FOREIGN PATENT DOCUMENTS

- 8927 3/1980 European Pat. Off. .
- WO83/01686 5/1983 PCT Int'l Appl. .
- 894760 12/1981 U.S.S.R. .
- 1472991 5/1977 United Kingdom .
- 2015739A 9/1979 United Kingdom .
- 2052744A 1/1981 United Kingdom .
- 2127545A 4/1984 United Kingdom .
- 2150295A 6/1985 United Kingdom .

Primary Examiner—Gary Chin
Attorney, Agent, or Firm—Seed and Berry

[57] ABSTRACT

A method and apparatus for calculating a corrected fuel economy rate. A fuel-consuming engine that propels a ground vehicle has at least one fuel rate sensor for measuring the fuel consumption rate of the engine. The apparatus further comprises a sensor for measuring the distance travelled by the ground vehicle. Digital counters accumulate pulse counts from the sensors and the pulse counts are processed by a microprocessor to calculate the distance travelled by the ground vehicle, the fuel consumed by the engine, and the change of the kinetic energy of the vehicle. The microprocessor then corrects the fuel consumed by subtracting the weighted change of the kinetic energy of the vehicle over the sampling period. The microprocessor then calculates the ratio of the distance travelled to the corrected fuel consumed to produce a corrected fuel economy rate, or its reciprocal. The ratio can be displayed on a digital display.

32 Claims, 4 Drawing Sheets

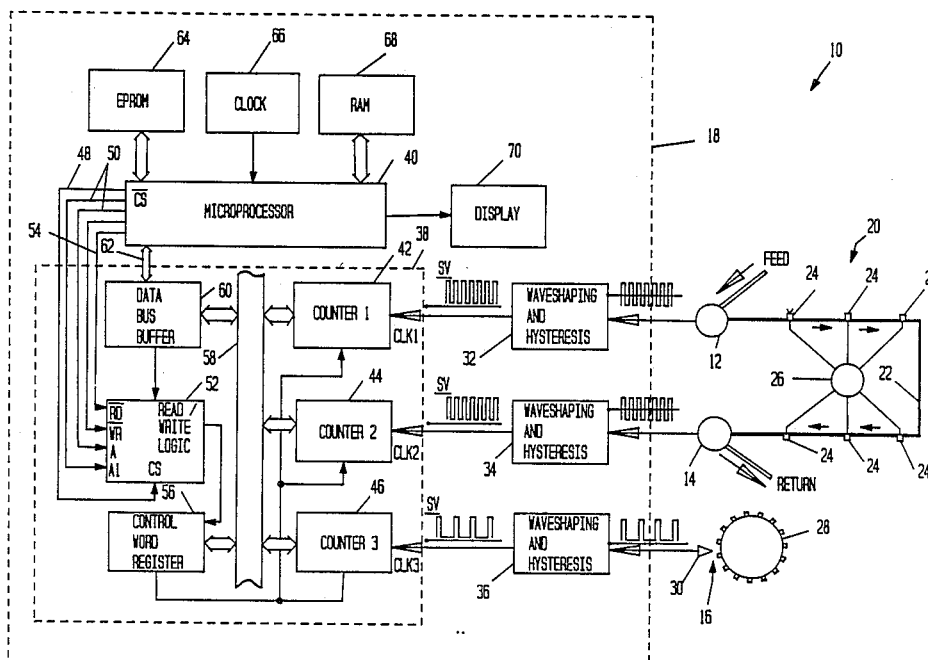


FIG. 1

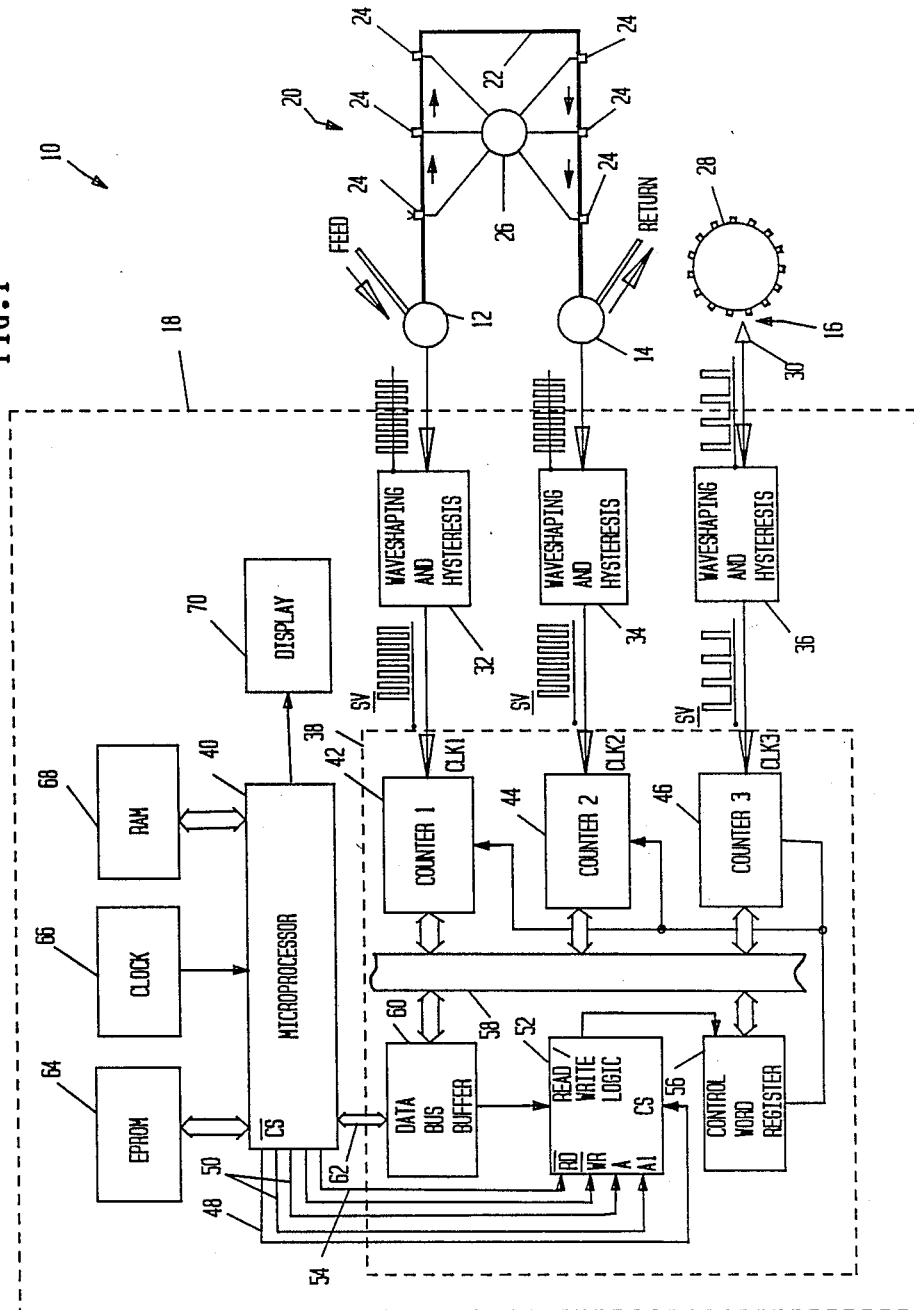
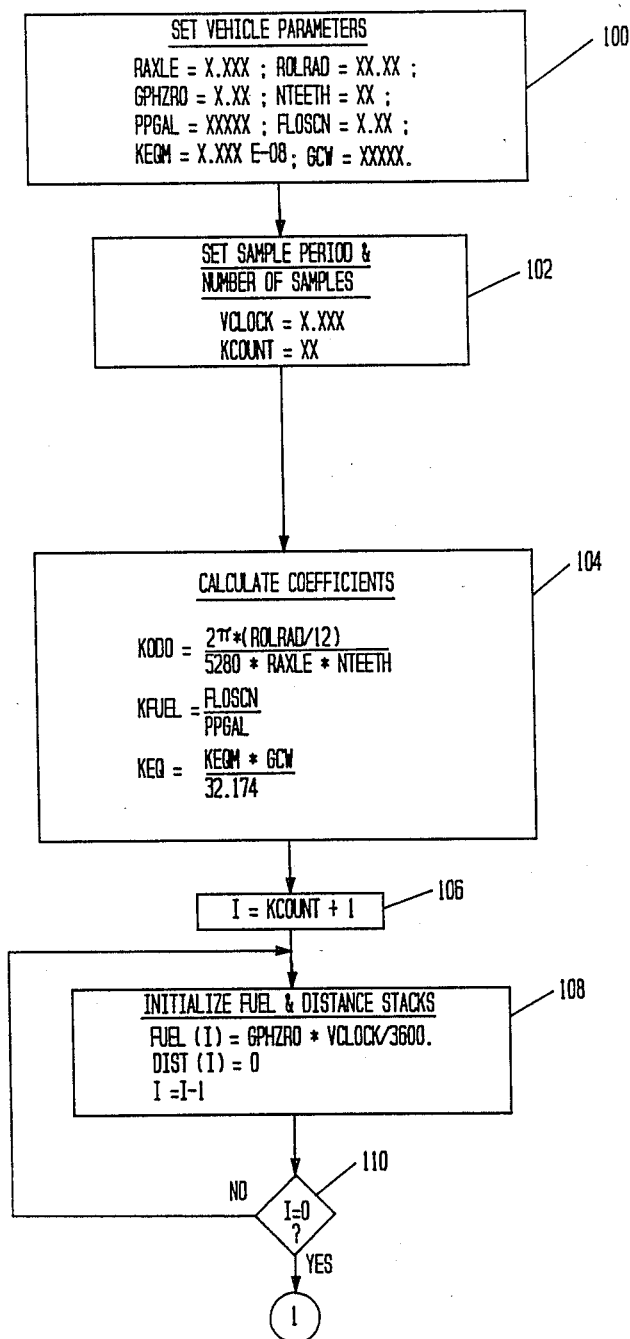


FIG. 2A



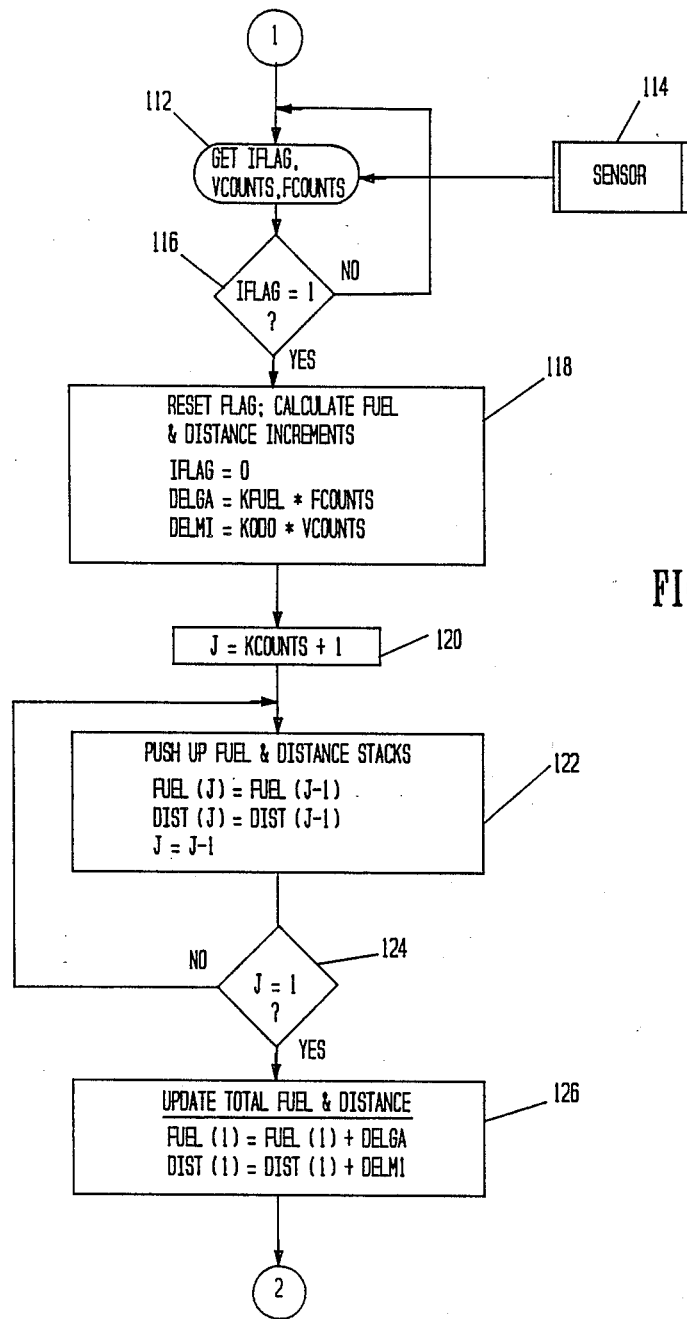
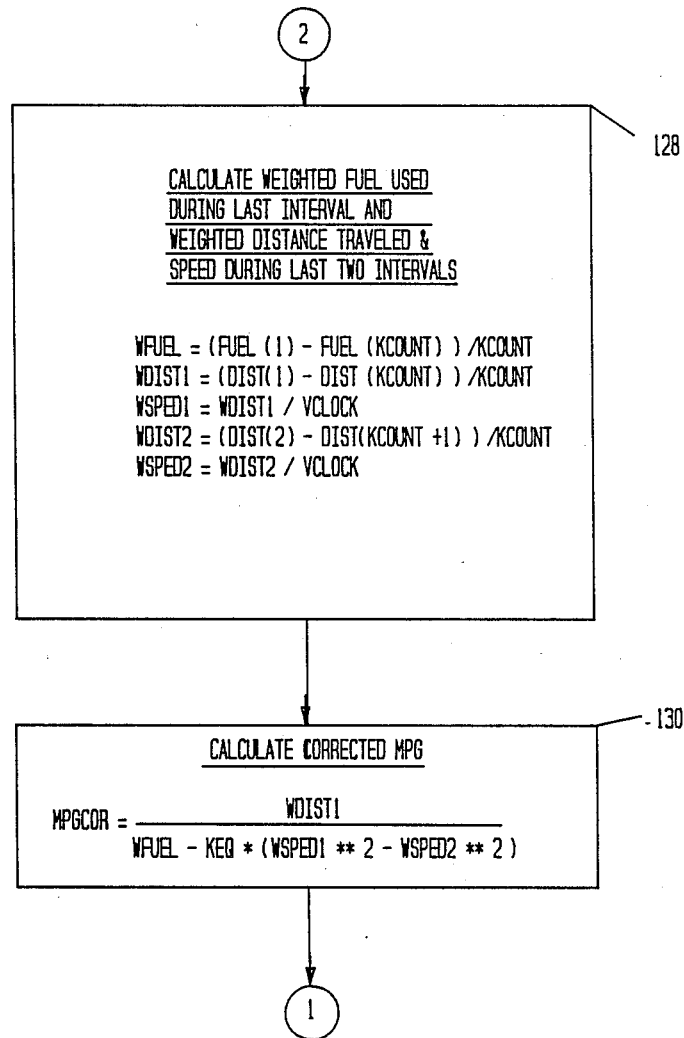


FIG. 2B

FIG. 2C



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.