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

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[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

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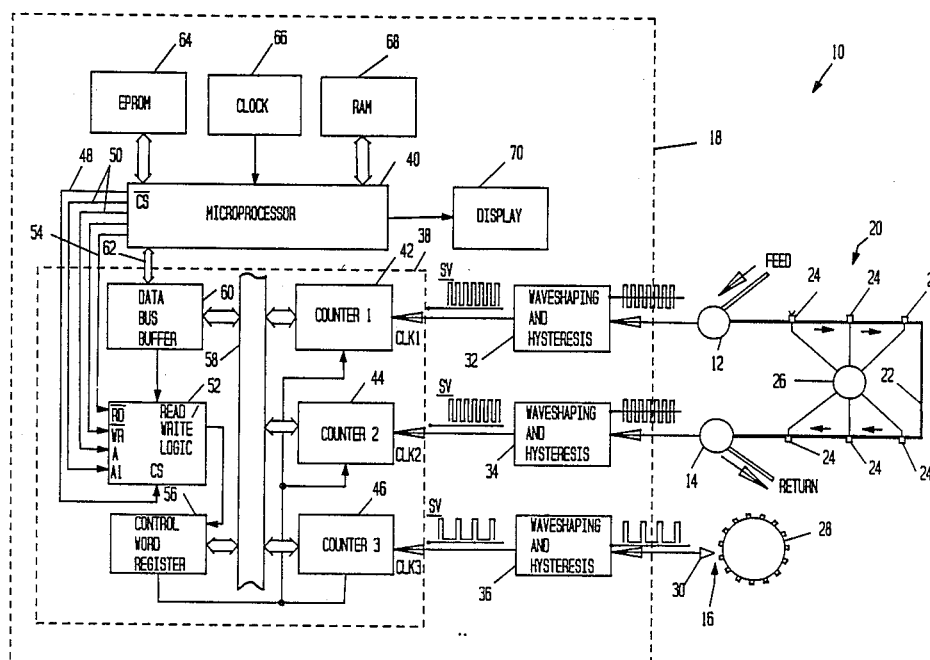|		
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Primary Examiner—Gary Chin
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[57] **ABSTRACT**

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.
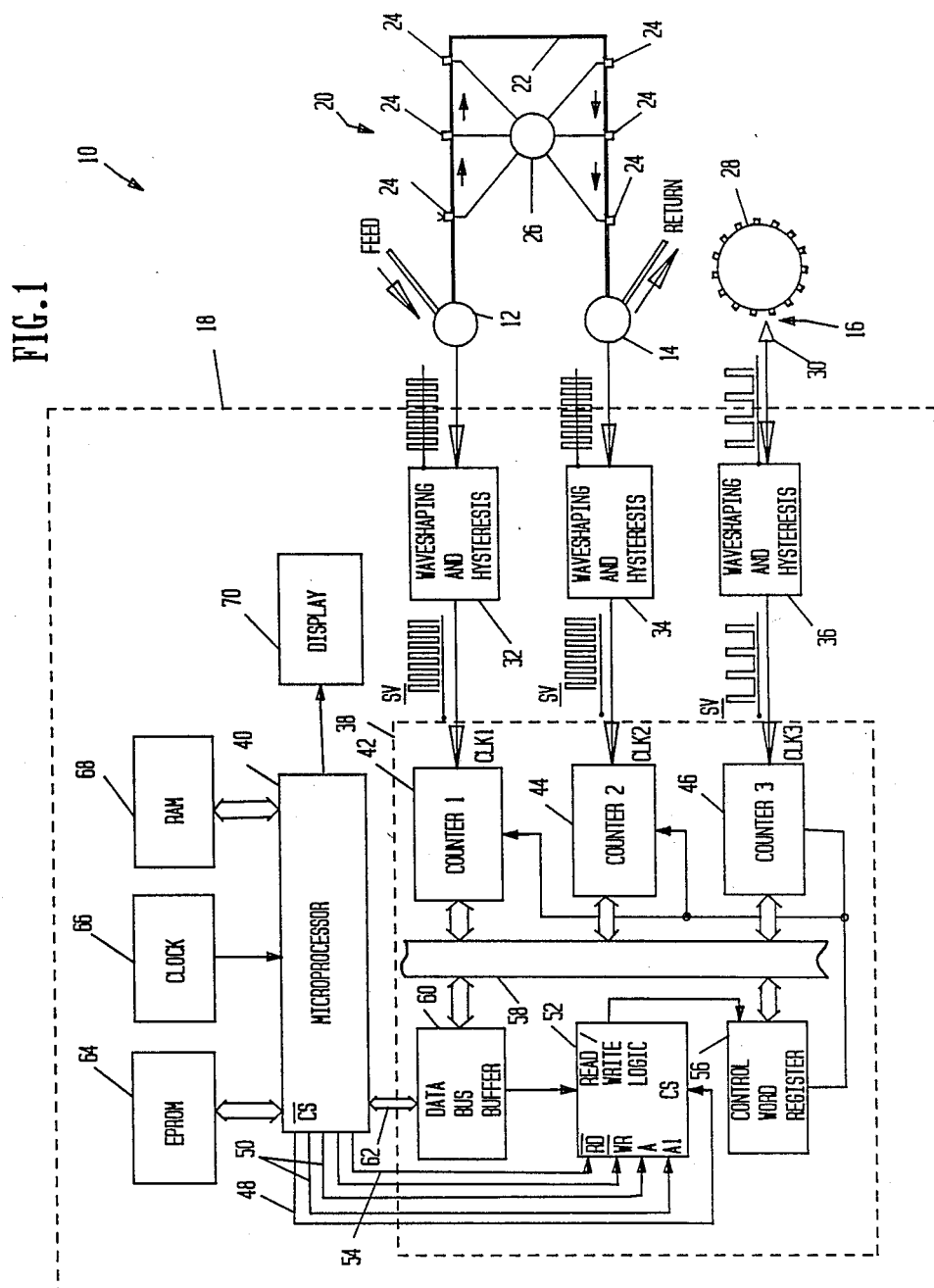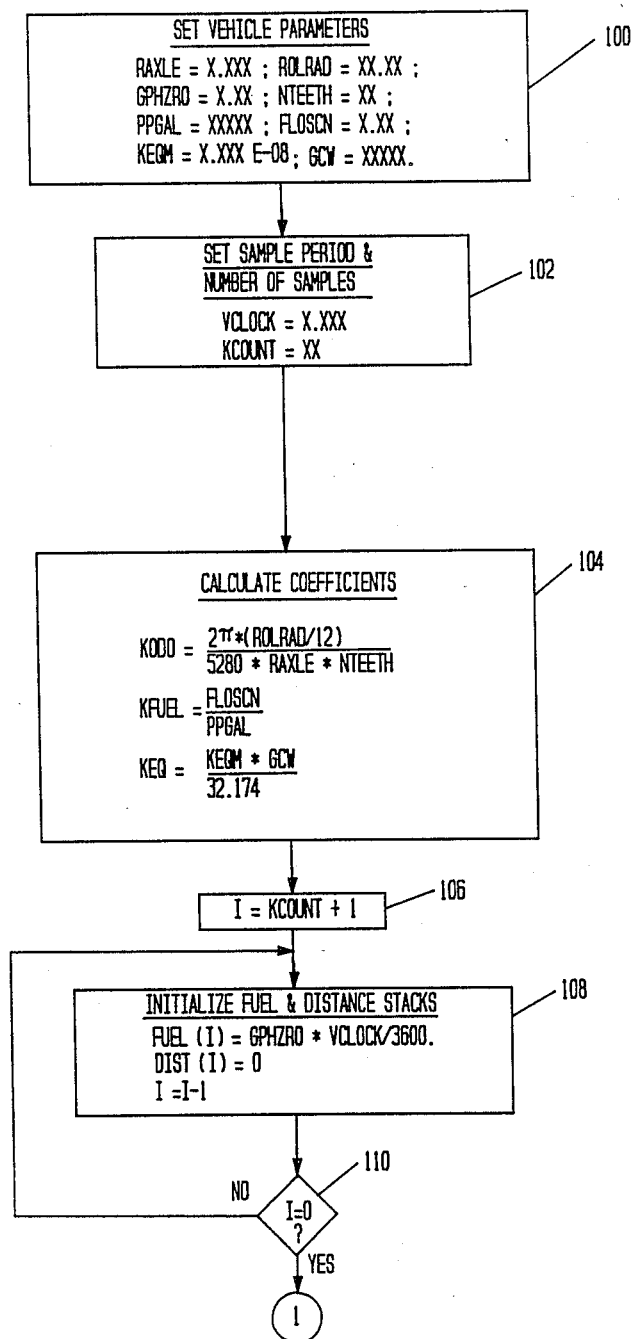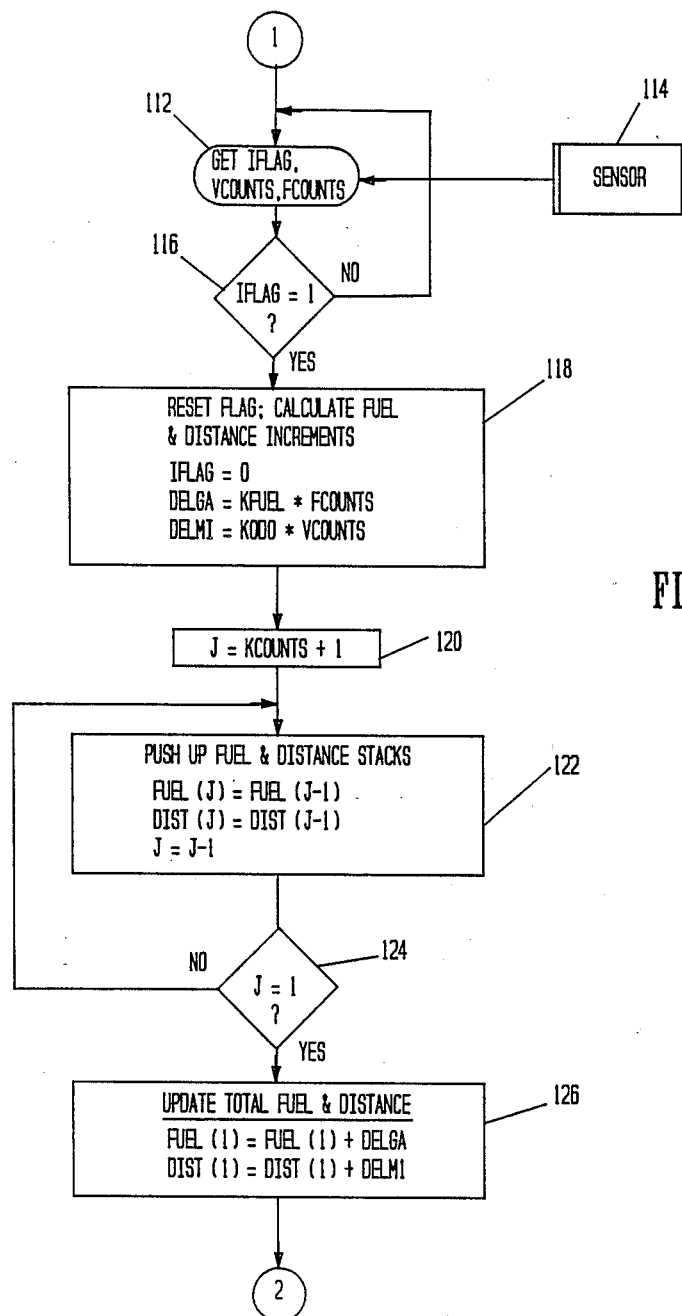
32 Claims, 4 Drawing Sheets

FIG.1

FIG. 2A

FIG. 2B

(2)

FIG. 2C

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CALCULATE WEIGHTED FUEL USED
DURING LAST INTERVAL AND
WEIGHTED DISTANCE TRAVELED &
SPEED DURING LAST TWO INTERVALS

$$WFUEL = (FUEL (1) - FUEL (KCOUNT)) / KCOUNT$$
$$WDIST1 = (DIST(1) - DIST (KCOUNT)) / KCOUNT$$
$$WSPED1 = WDIST1 / VCLOCK$$
$$WDIST2 = (DIST(2) - DIST(KCOUNT + 1)) / KCOUNT$$
$$WSPED2 = WDIST2 / VCLOCK$$

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CALCULATE CORRECTED MPG

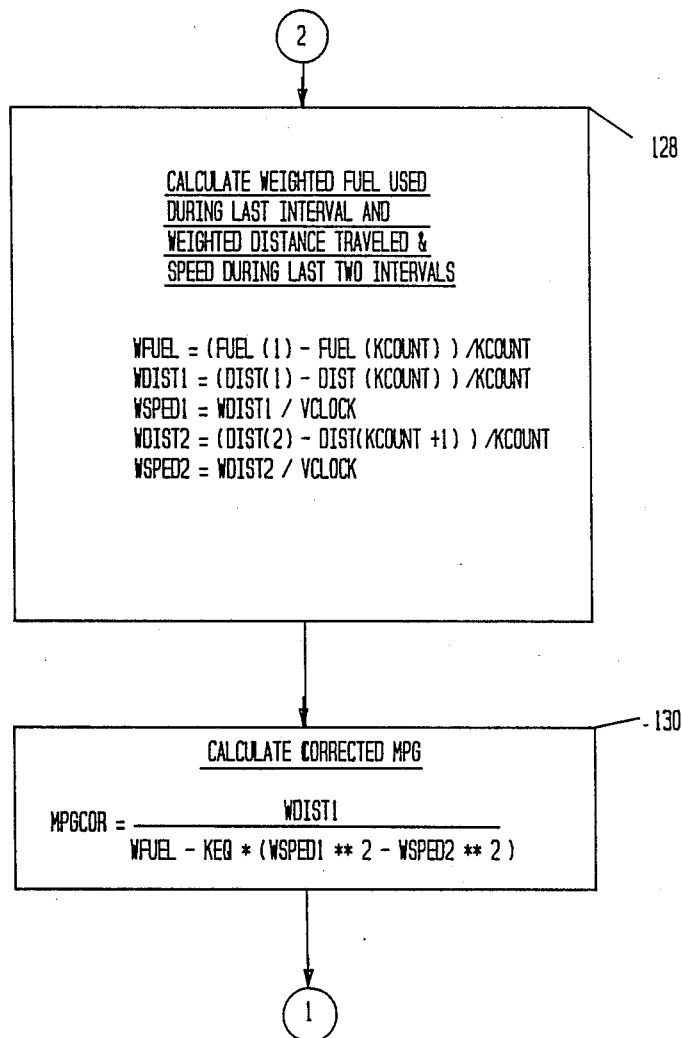$$MPGCOR = \frac{WDIST1}{WFUEL - KEQ * (WSPED1 ** 2 - WSPED2 ** 2)}$$

(1)

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