



US006188945B1

(12) **United States Patent**
Graf et al.

(10) **Patent No.:** **US 6,188,945 B1**
(45) **Date of Patent:** **Feb. 13, 2001**

(54) **DRIVE TRAIN CONTROL FOR A MOTOR VEHICLE**

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(*) Notice: Under 35 U.S.C. 154(b), the term of this patent shall be extended for 0 days.

(21) Appl. No.: **08/937,253**

(22) Filed: **Sep. 12, 1997**

(30) **Foreign Application Priority Data**

Sep. 12, 1996 (DE) 196 37 210

(51) **Int. Cl.**⁷ **B60K 41/04**; F02D 28/00

(52) **U.S. Cl.** **701/58**; 701/54; 180/65.2

(58) **Field of Search** 701/51, 58, 60, 701/61, 54, 53, 48, 57; 180/65.2; 477/20, 107, 109, 110

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,853,720	8/1989	Onari et al.	364/431.07
4,866,622	* 9/1989	Dreher et al.	701/102
5,012,418	4/1991	Petzoid	.
5,113,721	* 5/1992	Polly	477/80
5,150,635	9/1992	Minowa et al.	74/866
5,351,776	10/1994	Keller et al.	180/79.1
5,450,324	9/1995	Cikanek	364/426.02
5,508,923	* 4/1996	Ibamoto et al.	701/70
5,521,823	5/1996	Akita et al.	364/424.05

FOREIGN PATENT DOCUMENTS

4039005A1 6/1991 (DE) .

4401416A1	7/1995	(DE) .
0388107	9/1990	(EP) .
0576703A1	1/1994	(EP) .
2 031 822	4/1980	(GB) .
2240827	8/1991	(GB) .
2255057	10/1992	(GB) .

OTHER PUBLICATIONS

International Application WO 90/03898 (Lang), dated Apr. 19, 1990.

“Systemvernetzung im Automobil”, R. Leonhard, Stuttgart, Feinwerkstechnik im Fahrzeugbau, München, 1993, pp. 87–90.

“Fahrzeugregelung und regelungstechnische Komponentenabstimmung”, U. Zoelch et al., VDM Berichte No. 1225, 1995, pp. 281–297, pertains to motor vehicle control and closed-loop/open-loop control adjustment.

* cited by examiner

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(57) **ABSTRACT**

An integrated drive train control system for a motor vehicle interprets the position of the accelerator pedal and the brake pedal as a wheel torque desired by the driver. A calculating device receives signals representing the positions of the accelerator pedal and the brake pedal. Central control parameters for the drive sources and for the decelerating units of the drive train are generated on the basis of the position signals. A classification device evaluates the sensor signals from the drive train and classifies operating parameters of the motor vehicle.

8 Claims, 5 Drawing Sheets

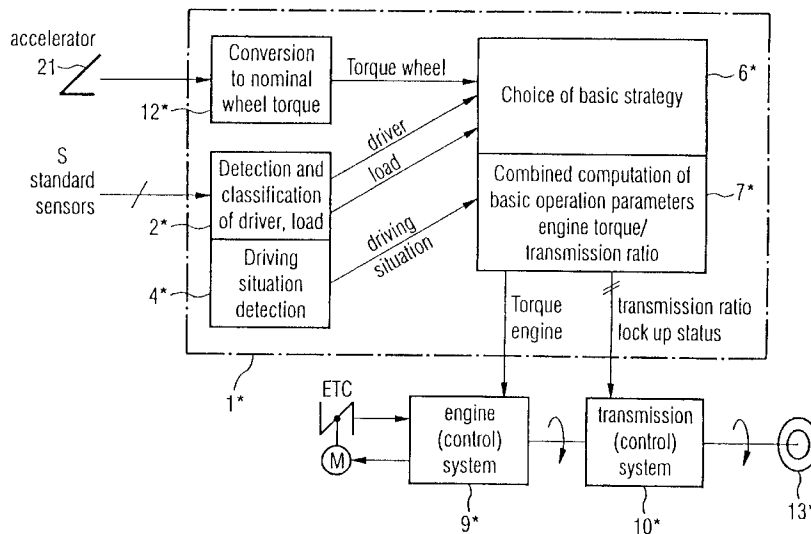
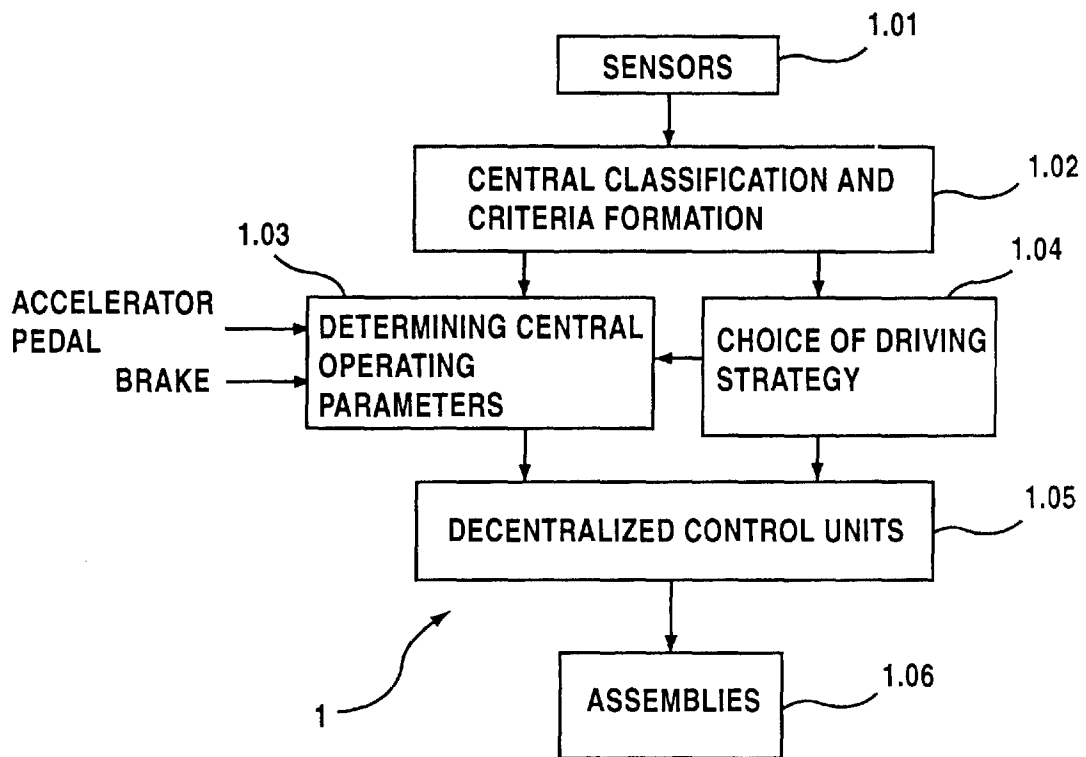


FIG.1



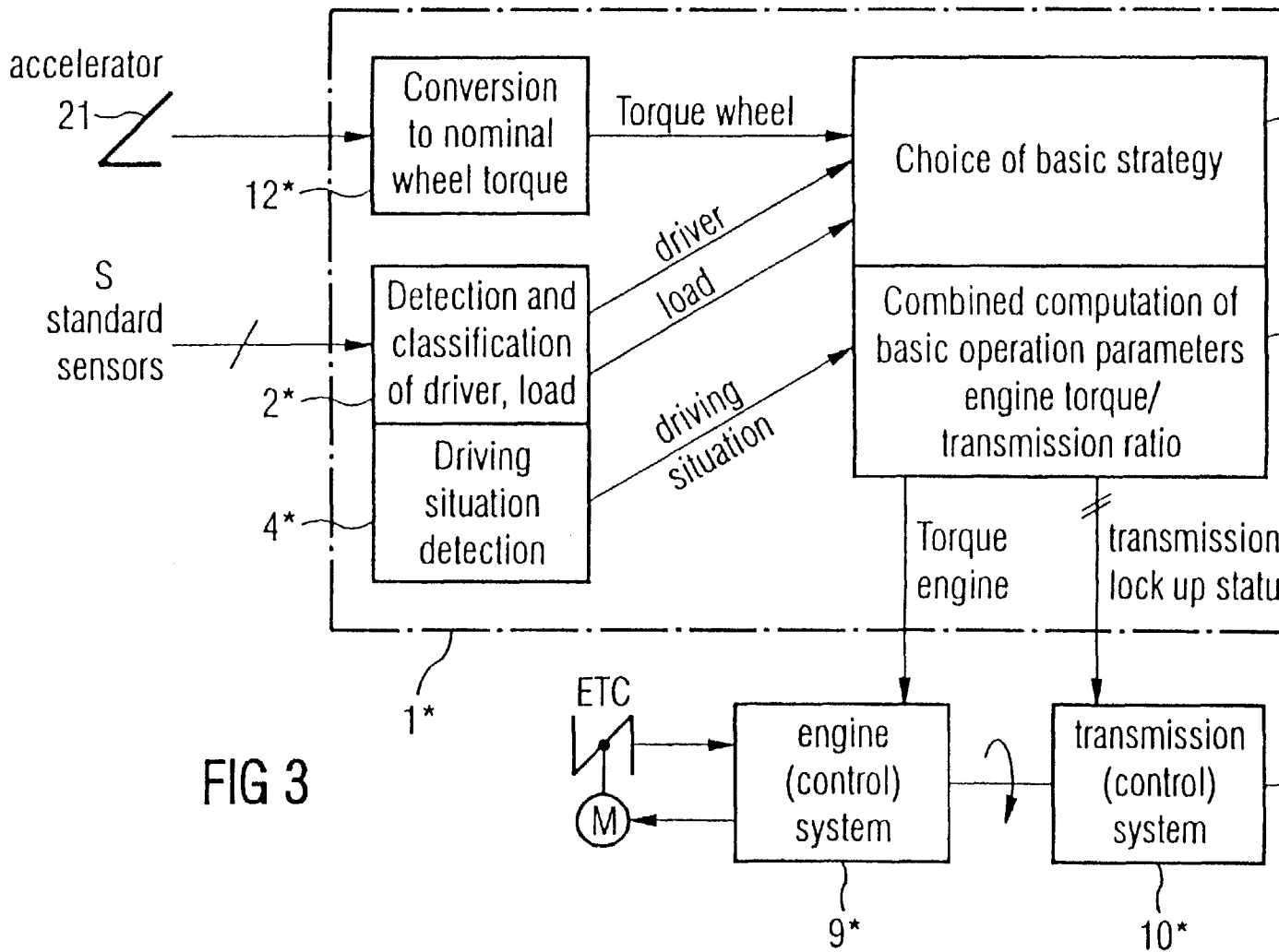
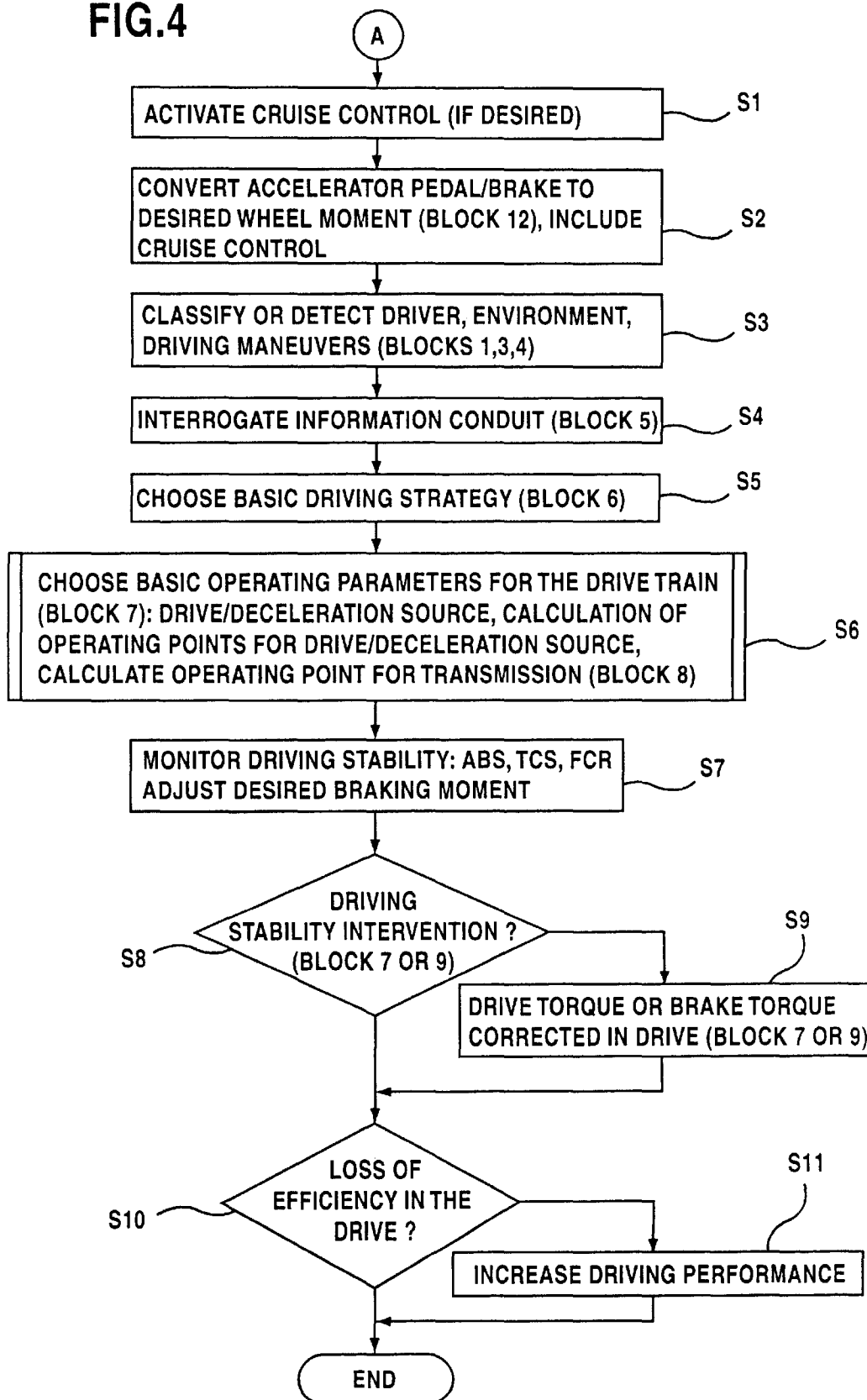


FIG 3

FIG.4



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