



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:  
**31.05.2000 Bulletin 2000/22**

(51) Int. Cl.<sup>7</sup>: **F02D 41/14**

(43) Date of publication A2:  
**24.02.1999 Bulletin 1999/08**

(21) Application number: **98113470.3**

(22) Date of filing: **20.07.1998**

(84) Designated Contracting States:  
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU  
MC NL PT SE**  
Designated Extension States:  
**AL LT LV MK RO SI**

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(30) Priority: **22.07.1997 JP 19612397**

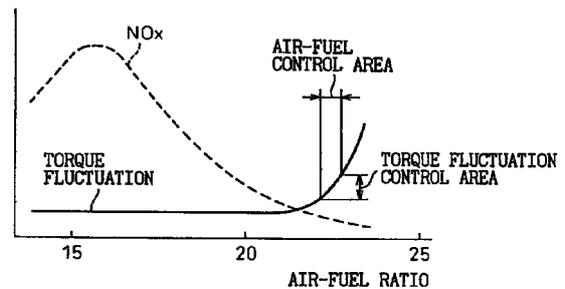
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(54) **Method of controlling an air-fuel ratio of an engine**

(57) The elapsed time  $Ta(i)$  of a  $30^\circ$  crank angle near top dead center of compression and the elapsed time  $Tb(i)$  of a  $30^\circ$  crank angle near  $90^\circ$  after top dead center of compression are found. The difference  $DTa(i)$  of the elapsed times  $Ta(i)$  between  $720^\circ$  crank angle for a first cylinder and a second cylinder performing combustion after the first cylinder is found. The assumed elapsed time when assuming that there is no torque fluctuation is calculated from the difference  $DTa(i)$  of the elapsed time of the first cylinder and the elapsed time of the second cylinder is calculated and the assumed elapsed time is used to calculate the basic amount of torque fluctuation. A set value is found based on the engine speed. The set value represents a deviation of the basic amount of torque fluctuation due to the detection error of the elapsed time, and due to the torsional vibration of the engine drive system and the torsional vibration of the crankshaft. The set value is subtracted from the basic amount of torque fluctuation to calculate the amount of torque fluctuation. The air-fuel ratio is controlled based on the amount of torque fluctuation.

Fig.3





European Patent  
Office

EUROPEAN SEARCH REPORT

Application Number  
EP 98 11 3470

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The present search report has been drawn up for all claims			
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>7 April 2000</b>	Examiner <b>Libeaut, L</b>
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- & : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			

EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
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