(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 046 599**
A3

(12) EUROPEAN PATENT APPLICATION

(21) Application number: **81106638.0**

(51) Int. Cl.³: **F 02 D 35/00**

(22) Date of filing: **26.08.81**

(30) Priority: **27.08.80 JP 116918/80**

(43) Date of publication of application:
03.03.82 Bulletin 82/9

(88) Date of deferred publication of search report: **04.08.82**

(84) Designated Contracting States:
DE GB IT

(71) Applicant: **Hitachi, Ltd.**
5-1, Marunouchi 1-chome
Chiyoda-ku Tokyo 100(JP)

(72) Inventor: **Manaka, Toshio**
1034, Higashiishikawa
Katsuta-shi Ibaraki(JP)

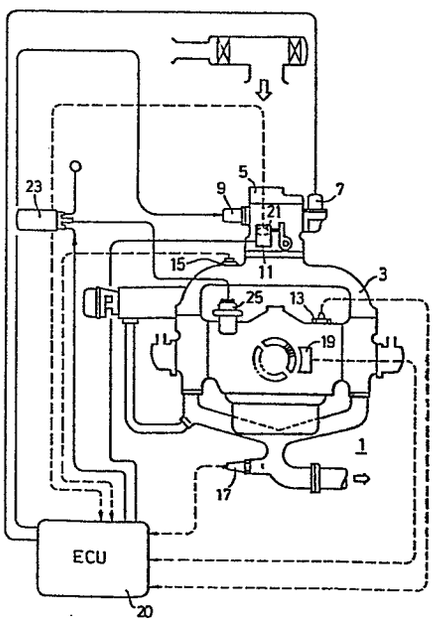
(72) Inventor: **Atago, Takeshi**
1476-51, Tarazaki
Katsuta-shi Ibaraki(JP)

(74) Representative: **Patentanwälte Beetz sen. - Beetz jr.**
Timpe - Siegfried - Schmitt-Fumian
Steinsdorfstrasse 10
D-8000 München 22(DE)

(54) Air-fuel ratio control system for an internal combustion engine.

(57) An air-fuel ratio control system having solenoid-actuated valves (71, 73) disposed in the fuel passage and the air bleed communicated with the fuel passage of a carburetor (5), an electric memory memorizing the data concerning the opening rates of the solenoid-actuated valves for attaining a constant air-fuel ratio through driving of these valves, in relation to the engine speed (N) and the intake vacuum (VC) of the engine, and a controller adapted to control the solenoid-actuated valves at an opening rate which is given as the product of the data read out from the electric memory and a fuel increment coefficient which differs according to the state of engine operation such as acceleration, deceleration and so forth of the engine and which varies depending on the engine temperature (TW). A correction of the air-fuel ratio is performed in accordance with the engine temperature (TW). When the engine is intentionally accelerated or decelerated during warming up of the engine, the rate of fuel supply from the carburetor (5) is changed in accordance with such a change of engine operation to always optimize the air-fuel ratio of the mixture.

FIG. 1



EP 0 046 599 A3

European Patent Office

0046599

Application number

EP 81 10 6638

EUROPEAN SEARCH REPORT

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 3)
A	FR - A - 2 345 594 (ROBERT BOSCH GmbH) * From page 1, line 1 to page 2, line 17; from page 7, line 28 to page 8, line 36; figure 4 * & GB - A - 1 573 179	1	F 02 D 35/00
A	FR - A - 2 389 770 (S.I.B.E.) * Page 2, lines 3-28; page 3, lines 24-30; from page 5, line 17 to page 7, line 41; figure 1 * & US - A - 4 279 230	1,2,5	TECHNICAL FIELDS SEARCHED (Int.Cl. 3) F 02 D
A	US - A - 4 190 618 (SHEFFER) * Figures; from column 1, line 64 to column 2, line 62 *	2,3	
PA D	GB - A - 2 041 579 (HITACHI LTD) * Figures 2,3; from page 2, line 32 to page 3, line 11 * & JP - A - 55 96350	1	CATEGORY OF CITED DOCUMENTS
PA	GB - A - 2 049 992 (NISSAN MOTOR CO.) * In its entirety * & DE - A - 3 015 240 (06-11-1980)	1	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 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 The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	03-05-1982	MOUALED

European Patent Office

EUROPEAN SEARCH REPORT

Application number
EP 81 10 6638

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim
PA	DE - A - 3 010 583 (NISSAN MOTOR CO.) * In its entirety *	1

CLASSIFICATION OF THE APPLICATION (Int. Cl.³)

TECHNICAL FIELDS SEARCHED (Int. Cl.³)