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

(11) EP 1 132 894 A3

(12) EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
19.09.2001 Bulletin 2001/38

(43) Date of publication A2:
12.09.2001 Bulletin 2001/37

(21) Application number: **01108523.0**

(22) Date of filing: **06.11.1997**

(51) Int Cl.[7]: **G10L 19/12**

(84) Designated Contracting States:
DE FR GB IT

(30) Priority: **07.11.1996 JP 29473896**
21.11.1996 JP 31032496
19.02.1997 JP 3458297
19.02.1997 JP 3458397

(62) Document number(s) of the earlier application(s) in accordance with Art. 76 EPC:
97911460.0 / 0 883 107

(71) Applicant: **MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.**
Kadoma-shi, Osaka-fu 571 (JP)

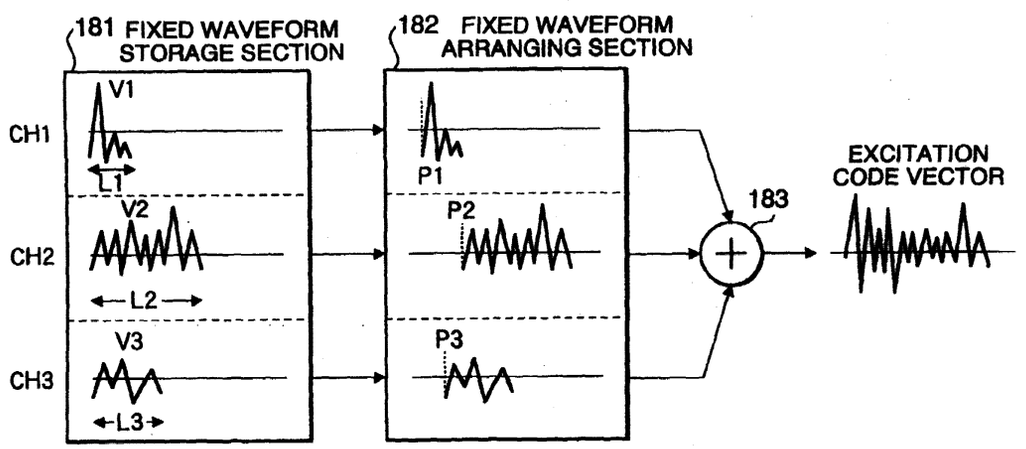
(72) Inventors:
- **Yasunaga, Kazutoshi**
  Kawasaki-shi, Kanagawa 216 (JP)
- **Morii, Toshiyuki**
  Kawasaki-shi, Kanagawa 215-0015 (JP)
- **Watanabe, Taisuke**
  Sagamihara-shi, Kanagawa 228 (JP)
- **Ehara, Hiroyuki**
  Yokohama-shi, Kanagawa 233-0016 (JP)

(74) Representative: **Grünecker, Kinkeldey,**
Stockmair & Schwanhäusser Anwaltssozietät
Maximilianstrasse 58
80538 München (DE)

(54) **Vector quantisation codebook generation method**

(57) In a CELP type speech coder, the excitation is quantized by vectors from a random codebook. The random codebook is made of a fixed waveform storage section (181), followed by a vector rearranging unit (182). The rearranging section (182) shifts the vectors to positions determined to minimize the quantization distortion using a pulse placement methodology of an algebraic coder. The vectors are then summed (183) to generate the excitation code vector.

FIG. 18



EP 1 132 894 A3

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 01 10 8523

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.7)
A	SALAMI R ET AL: "REAL-TIME IMPLEMENTATION OF A 9.6 KBIT/S ACELP WIDEBAND SPEECH CODER" PROCEEDINGS OF THE GLOBAL TELECOMMUNICATIONS CONFERENCE (GLOBECOM),US,NEW YORK, IEEE, vol. -, 6 December 1992 (1992-12-06), pages 447-451, XP000357827 ISBN: 0-7803-0608-2 * paragraph '00IV! * ---	1	G10L19/12
A	KIM S J ET AL: "A COMPLEXITY REDUCTION METHOD FOR VSELP CODING USING OVERLAPPED SPARSE BASIS VECTORS" PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON SIGNAL PROCESSING APPLICATIONS AND TECHNOLOGY, 18 October 1994 (1994-10-18), XP000866009 * figure 1 * * paragraph 'OIII! * -----	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			G10L

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	24 July 2001	Krembel, L

CATEGORY OF CITED DOCUMENTS

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

EPO FORM 1503 03.82 (P04C01)