United States Patent [19]

Makamura et al.

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[54] **LINEAR PREDICTION SPEECH CODING WITH HIGH-FREQUENCY PREEMPHASIS**

[75] Inventors: **Makio Makamura; Yoshihiro Unno,** both of Tokyo, Japan

[73] Assignee: **NEC Corporation,** Tokyo, Japan

[21] Appl. No.: **765,737**

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[30] **Foreign Application Priority Data**

Sep. 26, 1990 [JP] Japan 2-256493

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[52] U.S. Cl. 315/2.32; 395/2.28; 395/2.29

[58] Field of Search 395/2; 381/29-36, 381/46, 47

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[57] **ABSTRACT**

High frequency components of input digital speech samples are emphasized by a preemphasis filter (11). From the preemphasized samples a spectral parameter (a_i) is derived at frame intervals. The input digital samples are weighted by a weighting filter (13) according to a characteristic that is inverse to the characteristic of the preemphasis filter (11) and is a function of the spectral parameter (a_i). A codebook (18, 19) is searched for an optimum fricative value in response to a pitch parameter that is derived by an adaptive codebook (16) from a previous fricative value ($v(n)$) and a difference between the weighted speech samples and synthesized speech samples which are, in turn, derived from past pitch parameters and optimum fricative values, whereby the difference is reduced to a minimum. Index signals representing the spectral parameter, pitch parameter and optimum fricative value are multiplexed into a single data stream.
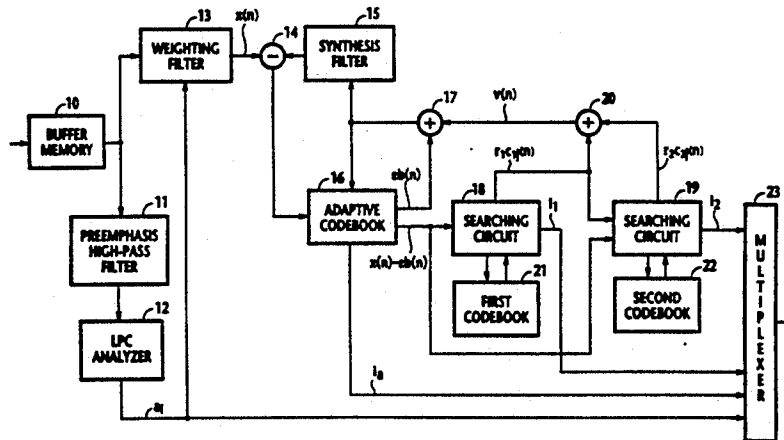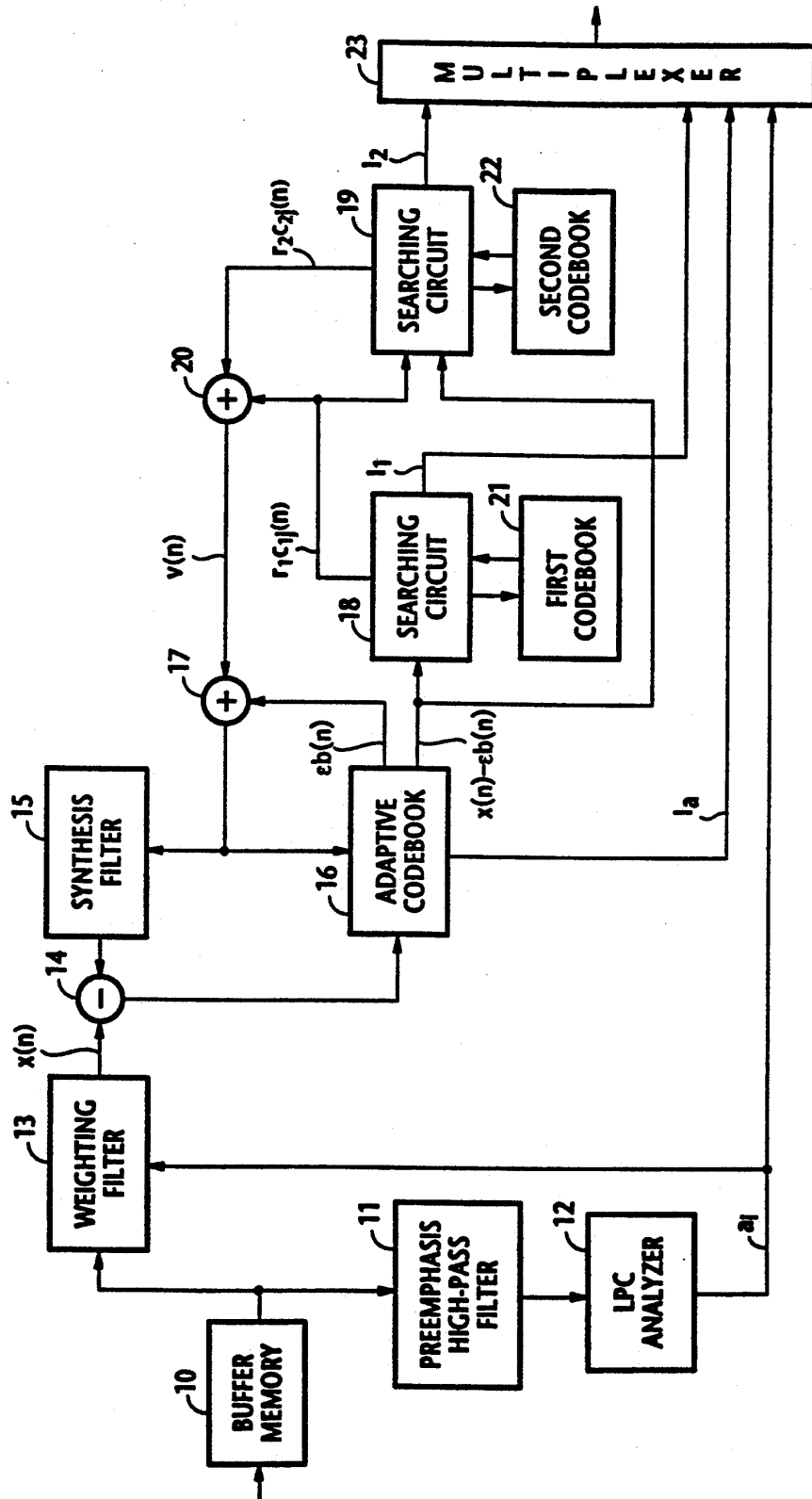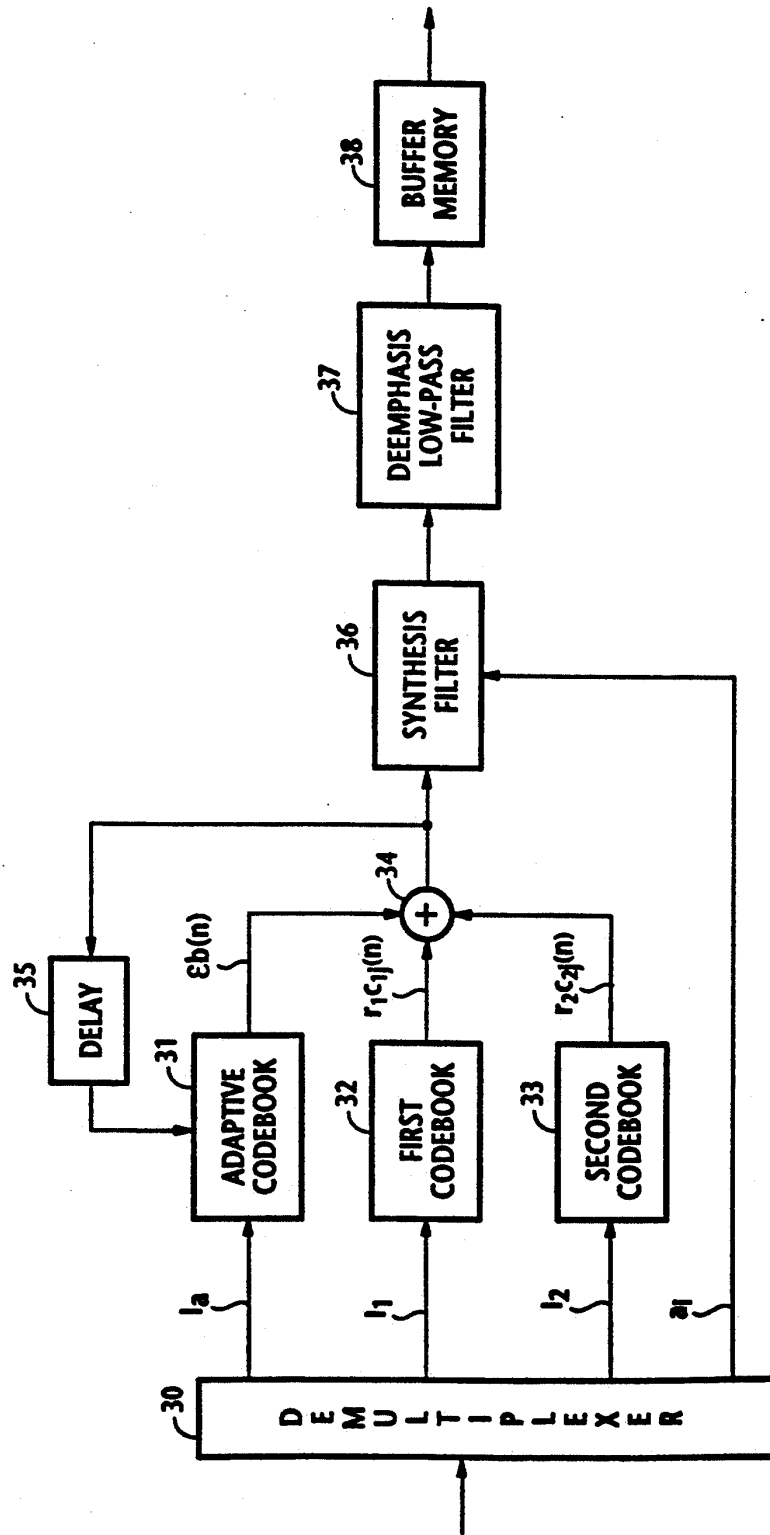
4 Claims, 4 Drawing Sheets
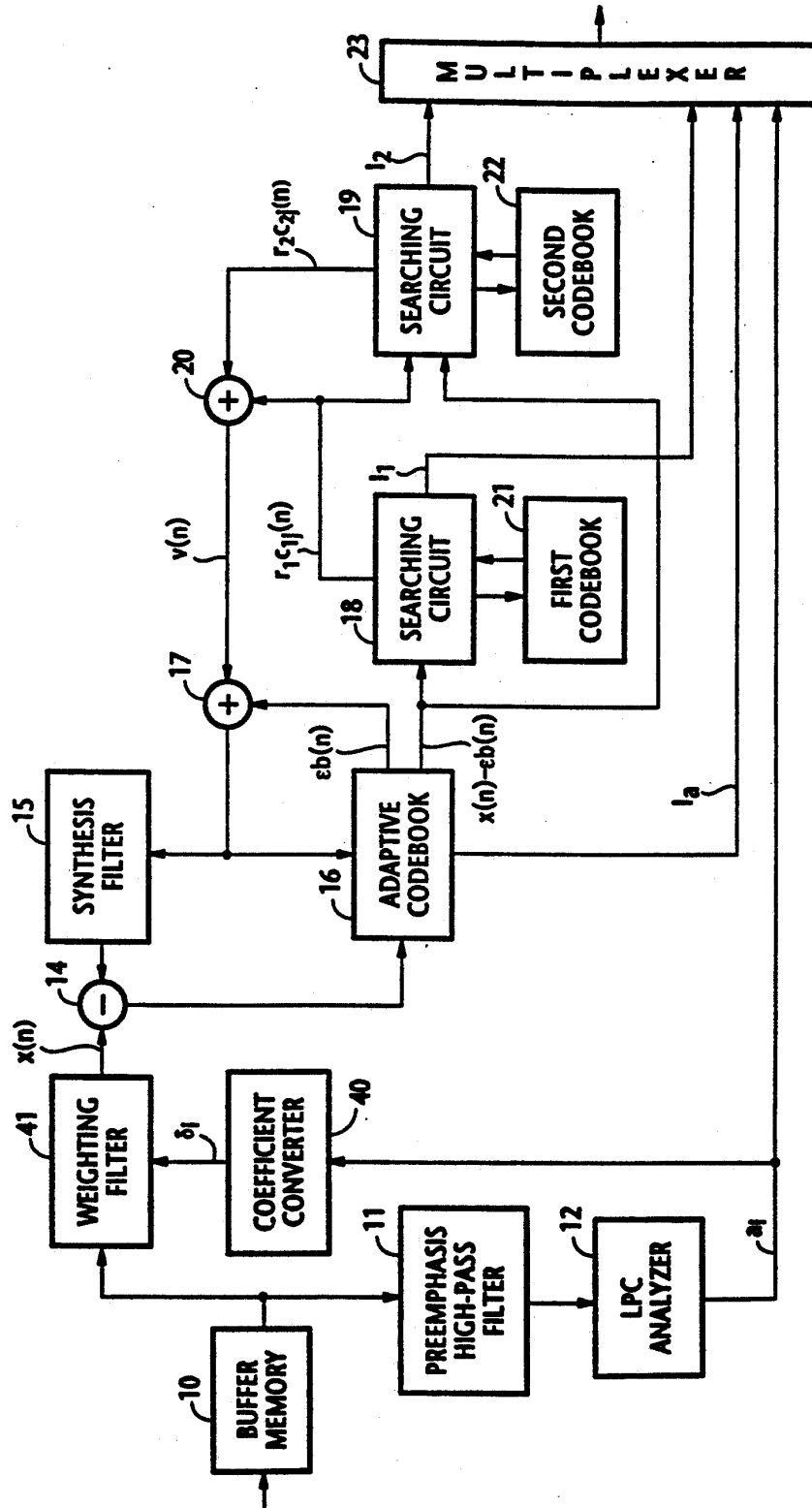
FIG. 1

FIG. 2

FIG. 3

FIG. 4

DOCKET ALARM
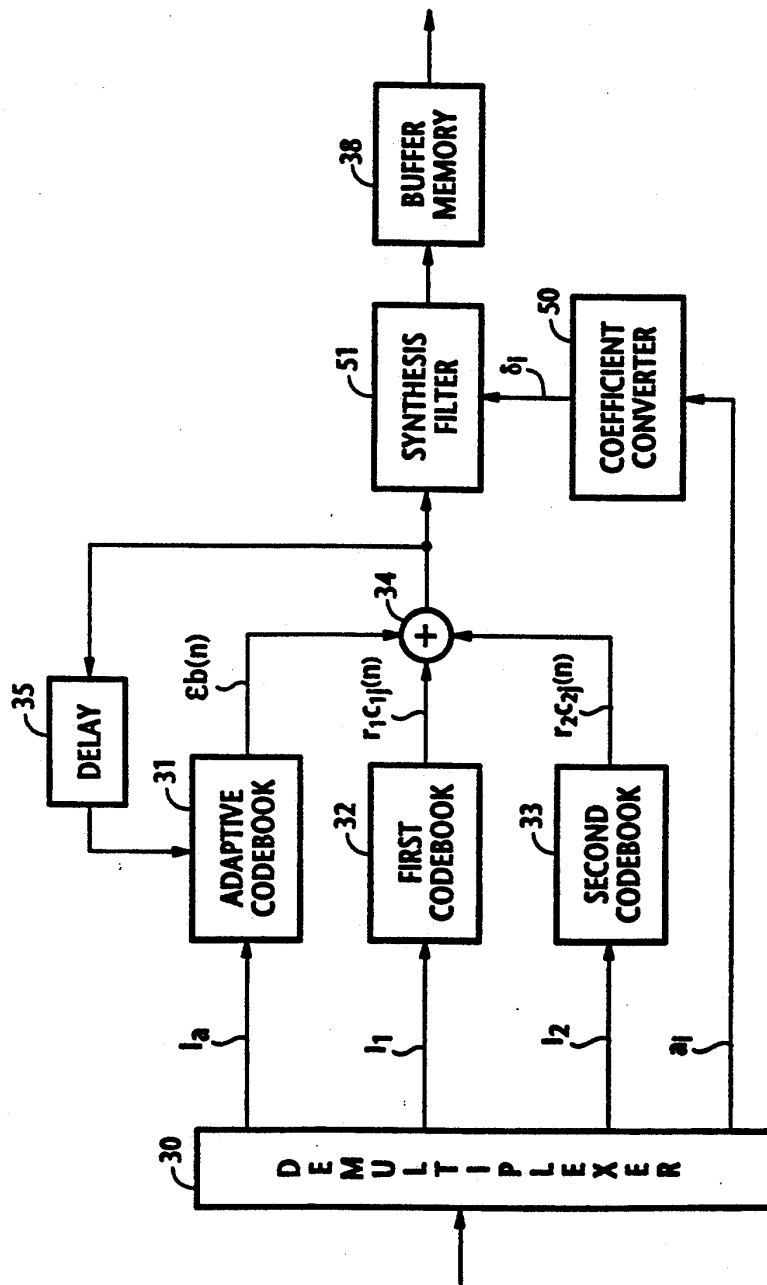
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