



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

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(54) **INFORMATION CODING METHOD AND DEVICES UTILIZING ERROR CORRECTION AND ERROR DETECTION**

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(\*) Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

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(52) **U.S. Cl.** ..... **714/755; 714/758**

(58) **Field of Search** ..... 714/746, 758, 714/704, 755; 358/133; 341/95; 375/299, 346; 370/337

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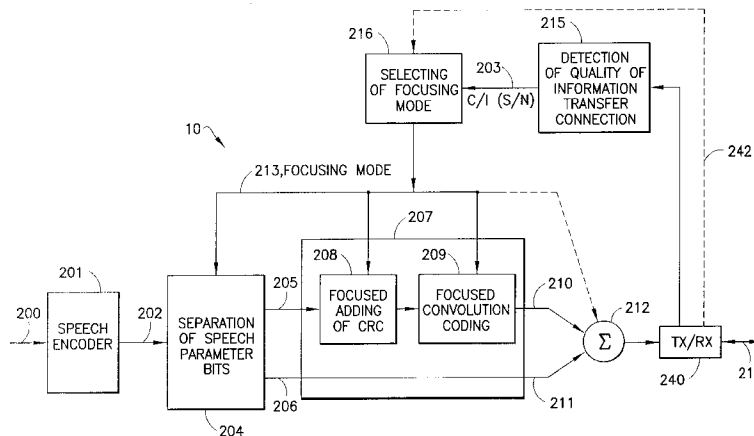
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(57) **ABSTRACT**

Focused error correction and/or focused error detection is used in the information coding system. A speech encoding method, in which the number of speech parameter bits on which error correction coding and/or error detection coding focuses is automatically adjusted in relation to the number of total speech parameter bits as a function of the quality of the information transfer connection. There is no need to reduce the number of bits used for speech encoding. Thus the voice quality of the speech remains high. The error correction and/or error detection is focused on the bits most important for the voice quality e.g., as a function of the C/I (Channel to Interference)13 parameter describing the quality of the information transfer connection. The muting of speech synthesizing occurring in prior systems on poor information transfer connection is reduced by using focused error detection.

**16 Claims, 12 Drawing Sheets**



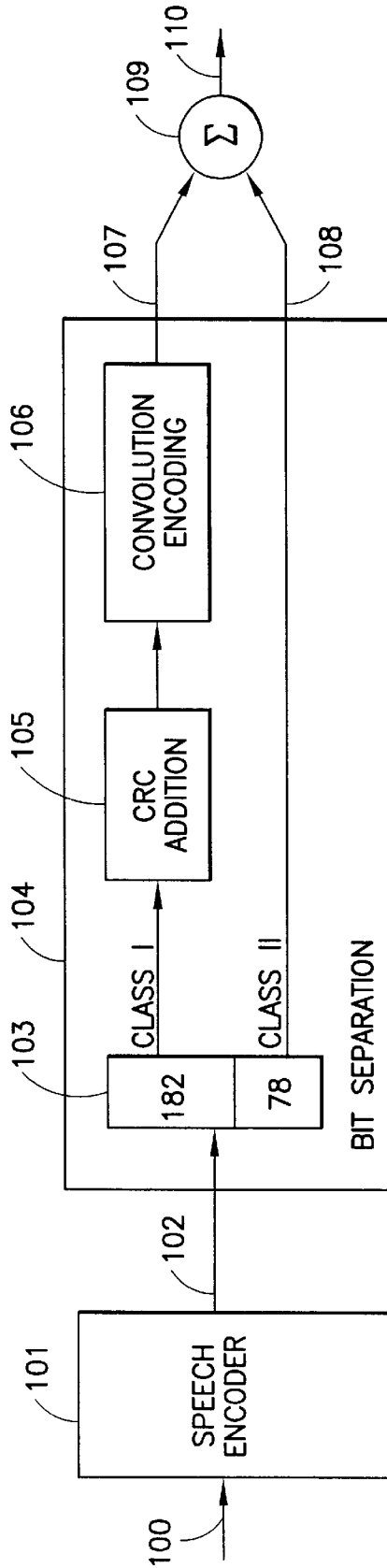


FIG. 1A

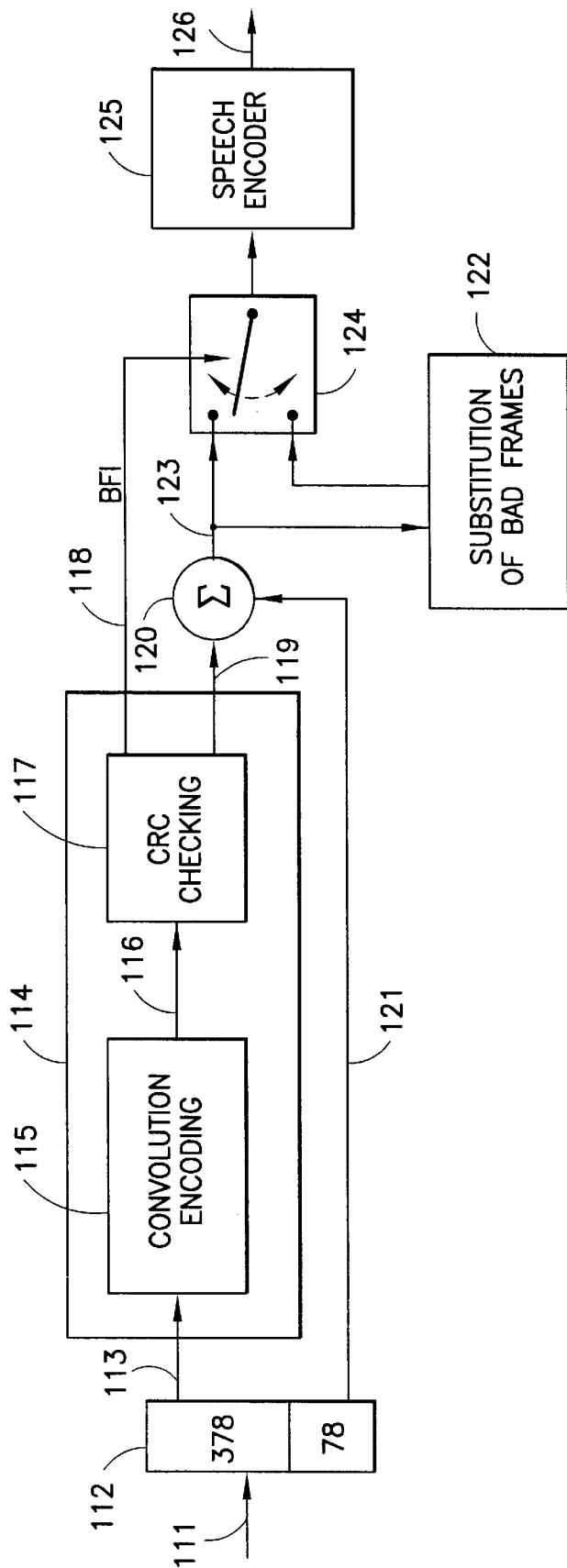
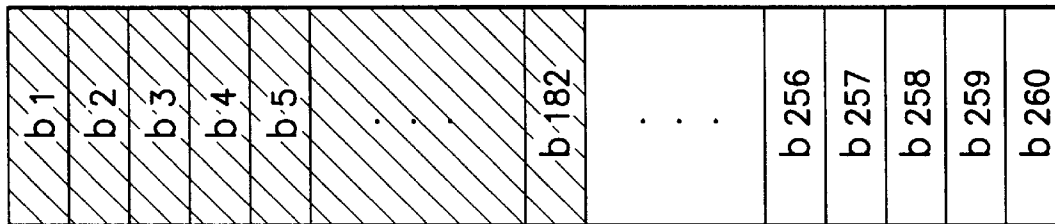


FIG. 1B



BITS PROTECTED WITH CONVOLUTION CODING



UNPROTECTED BITS



FIG.1C

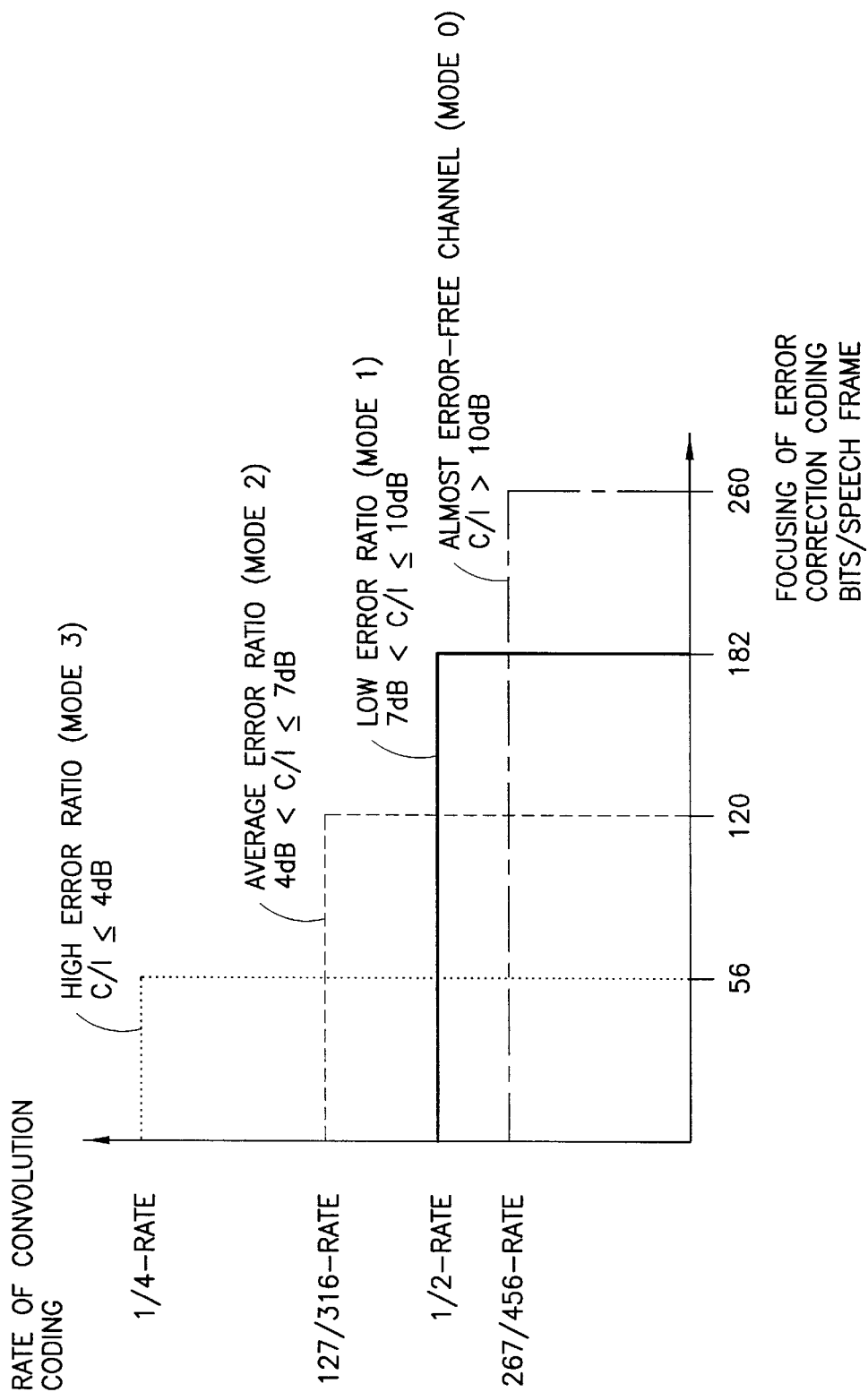


FIG.2

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