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Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

[Continued on next page]

(54) Title: TECHNIQUE FOR ENCODING/DECODING OF CODEBOOK INDICES FOR QUANTIZED MDCT SPECTRUM IN SCALABLE SPEECH AND AUDIO CODECS

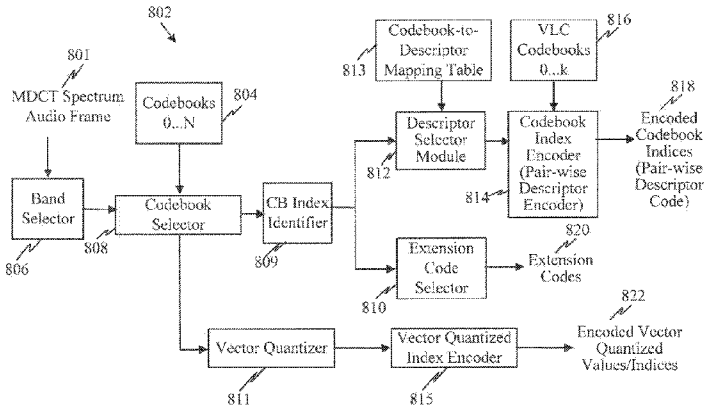

FIGURE 8 SPECTRUM ENCODER

(57) Abstract: Codebook indices for a scalable speech and audio codec may be efficiently encoded based on anticipated probability distributions for such codebook indices. A residual signal from a Code Excited Linear Prediction (CELP)-based encoding layer may be obtained, where the residual signal is a difference between an original audio signal and a reconstructed version of the original audio signal. The residual signal may be transformed at a Discrete Cosine Transform (DCT)-type transform layer to obtain a corresponding transform spectrum. The transform spectrum is divided into a plurality of spectral bands, where each spectral band having a plurality of spectral lines. A plurality of different codebooks are then selected for encoding the spectral bands, where each codebook is associated with a codebook index. A plurality of codebook indices associated with the selected codebooks are then encoded together to obtain a descriptor code that more compactly represents the codebook indices.

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