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Takeo

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(54) **METHOD, APPARATUS AND RECORDING MEDIUM FOR DATA COMPRESSION**

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(30) **Foreign Application Priority Data**

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Dec. 9, 1998 (JP) 10-350159

(51) **Int. Cl.**
G06K 9/36 (2006.01)

(52) **U.S. Cl.** **382/251**; 382/232

(58) **Field of Classification Search** 382/232-253
See application file for complete search history.

(56) **References Cited**

PUBLICATIONS

IEEE Transactions of Image Processing, vol. 4, Jun. 1995, pp. 725-733, "Image Coding Using Wavelet Transforms and Entropy-Constrained Trellis-Coded Quantization".

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(57) **ABSTRACT**

Fast and efficient data compression can be carried out. Original image data are subjected to wavelet transform. The obtained wavelet-transformed data are classified and bit allocation is determined. Based on the determined bit allocation, the wavelet-transformed data are quantized and quantized data are obtained. The quantized data are classified into 0 data and non-zero data. Binary classification information data indicating this classification are also obtained. The classification information data are coded according to a coding method having a comparatively simple operation, such as Huffman coding and run length coding. The multi-valued, non-zero data are coded according to a coding method having a high compression efficiency although having a comparatively complex operation, such as universal coding and Golomb-Rice coding.

30 Claims, 10 Drawing Sheets

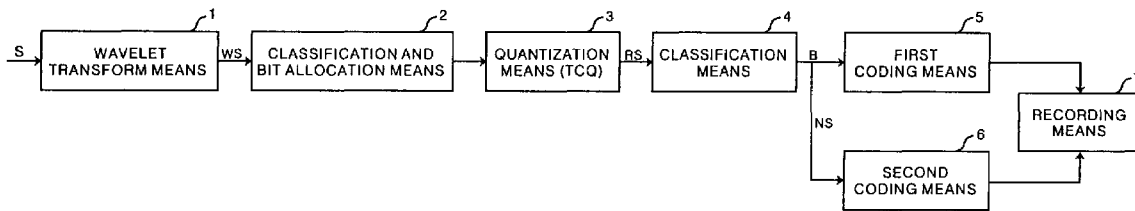
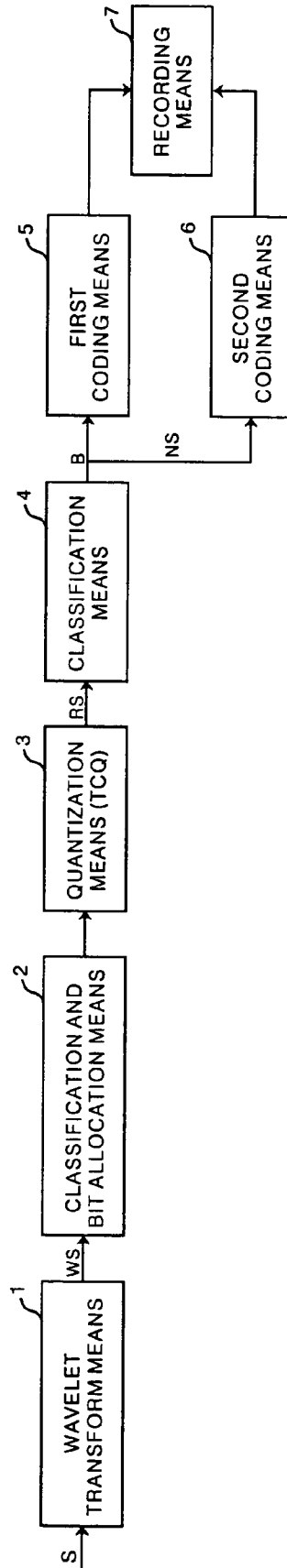


FIG. 1



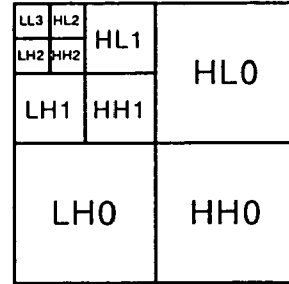
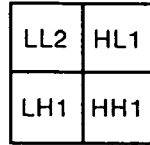
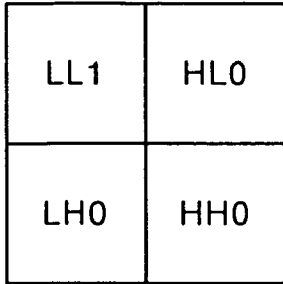


FIG.2a FIG.2b FIG.2c

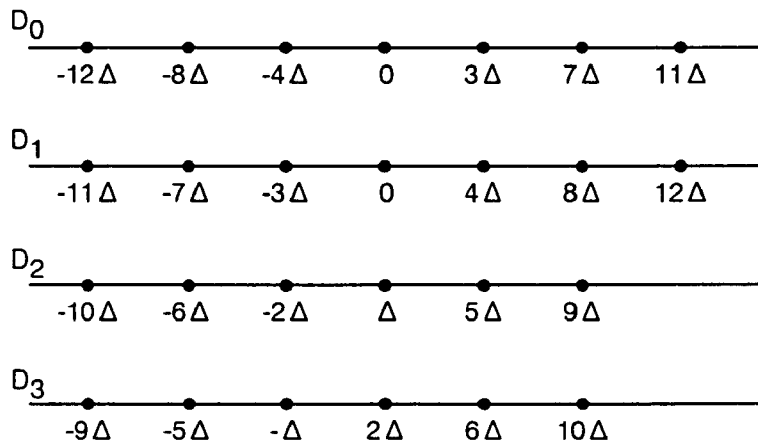


FIG.3

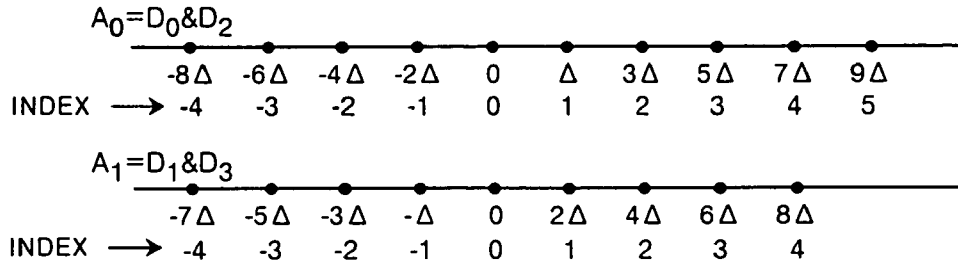


FIG. 4

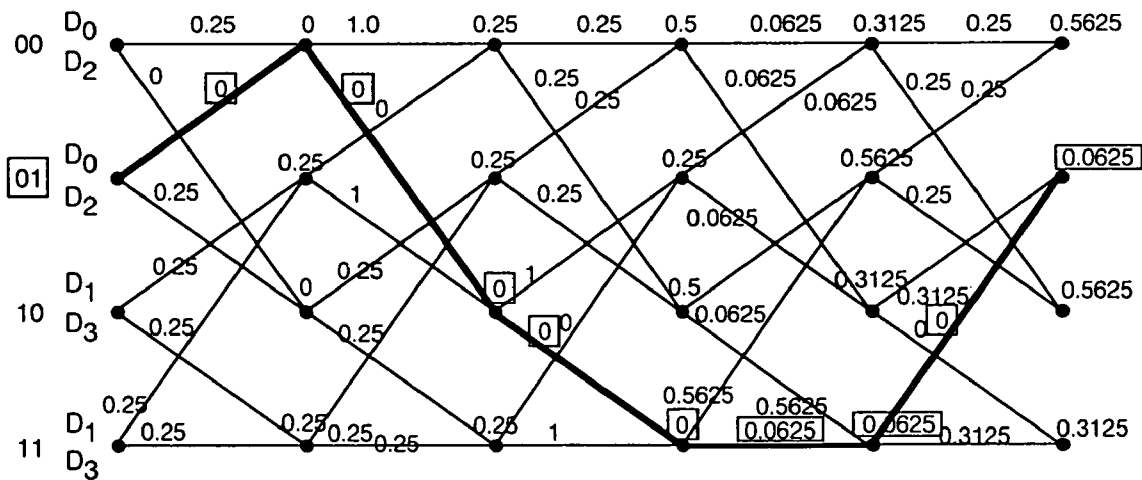


FIG. 5

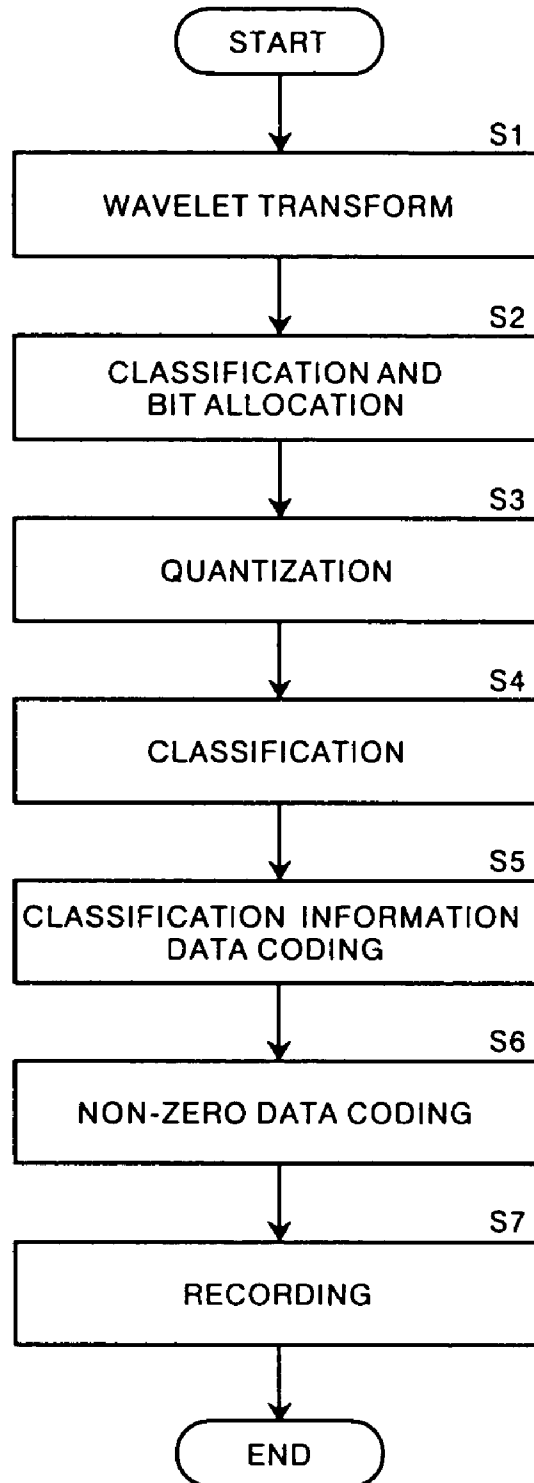


FIG.6

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