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Brown

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(54) **METHOD AND APPARATUS FOR COMPRESSION AND DECOMPRESSION OF DATA**

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(51) **Int. Cl.**⁷ **G06K 9/36**

(52) **U.S. Cl.** **382/239**

(58) **Field of Search** 382/232, 236, 382/238-240, 242, 248, 250; 358/432, 433; 348/384.1, 394.1-395.1, 400.1-404.1, 407.1-416.1, 420.1, 421.1, 425.2, 430.1, 431.1; 375/240.02-240.03, 240.11-240.16, 240.18-240.2, 240.22-240.25; 341/51, 63, 65, 67, 79, 107; 708/203, 300, 307-308, 313, 316-317, 400-405

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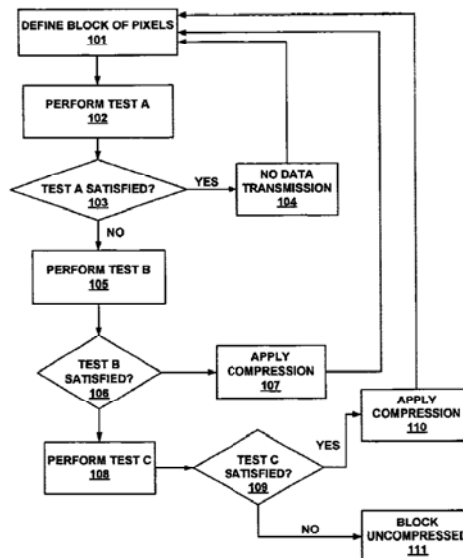
* cited by examiner

Primary Examiner—Jose L. Couso

(57) **ABSTRACT**

The present invention is a compression scheme for compressing audio and video data. An image is divided into blocks of pixels. In one test, if all of the pixels are approximately equal to the corresponding pixels in the previous block, then no data is sent for that block. In a second test, if all of the pixels in a block are approximately equal to a mean pixel value, then only one color value is transmitted. In a third test, if quantization of the pixels via companding results in an acceptable representation, the quantization is performed. The present invention uses quantization codes that are proportional to the logarithm of the magnitude of the range quantized, computation of a magnitude byte that permits rapid discovery of the number of bits used for quantization of a block, recursive packing and unpacking of quantized pixel data, and two-dimensional paths through the block.

14 Claims, 7 Drawing Sheets



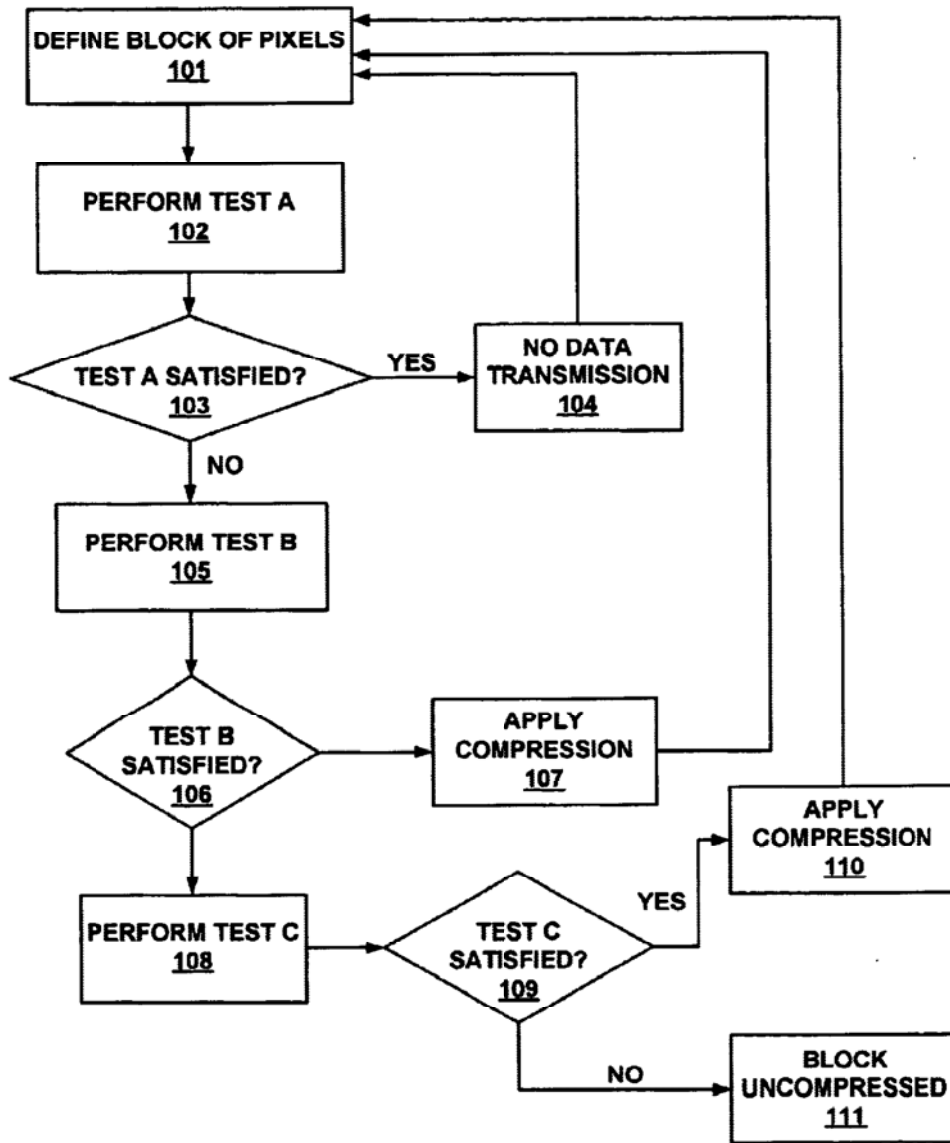


FIGURE 1

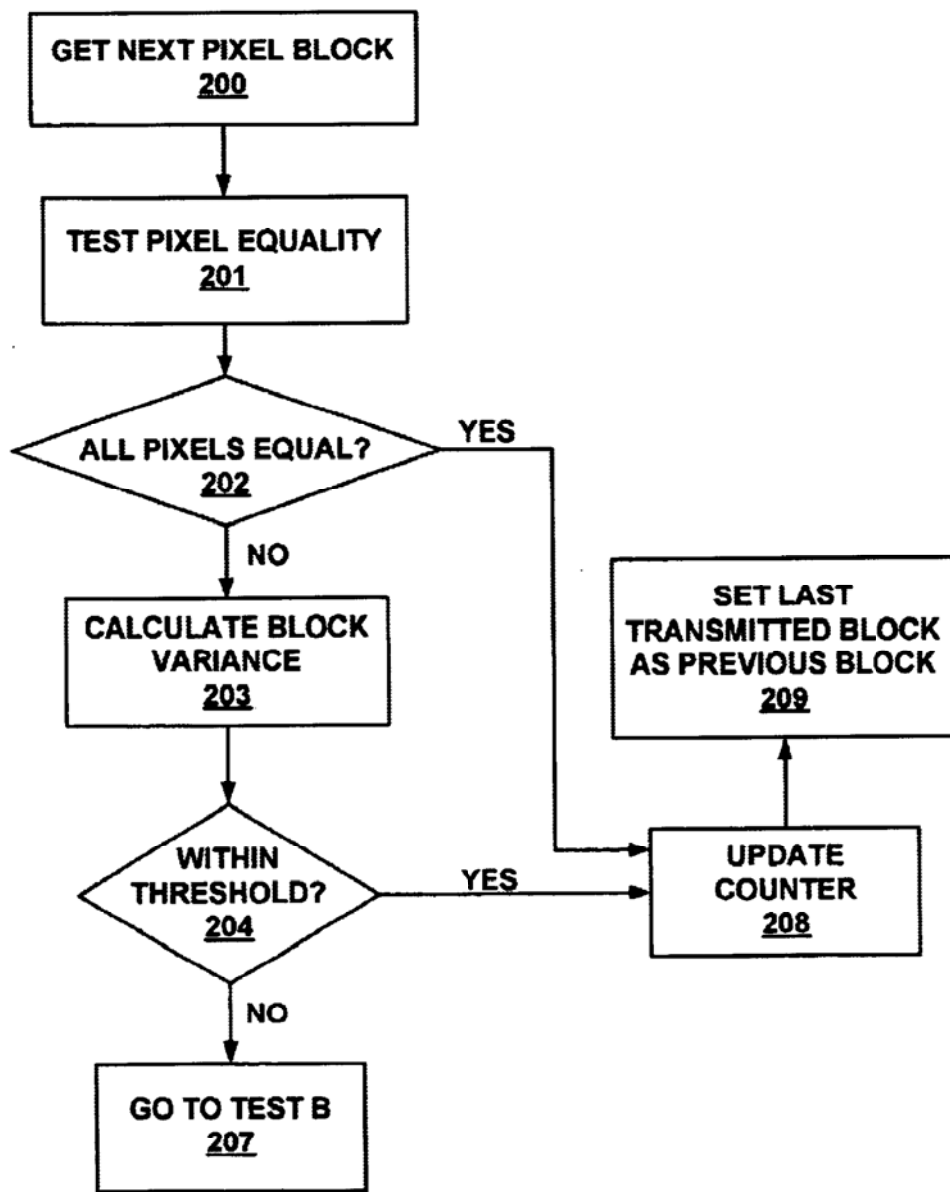


FIGURE 2

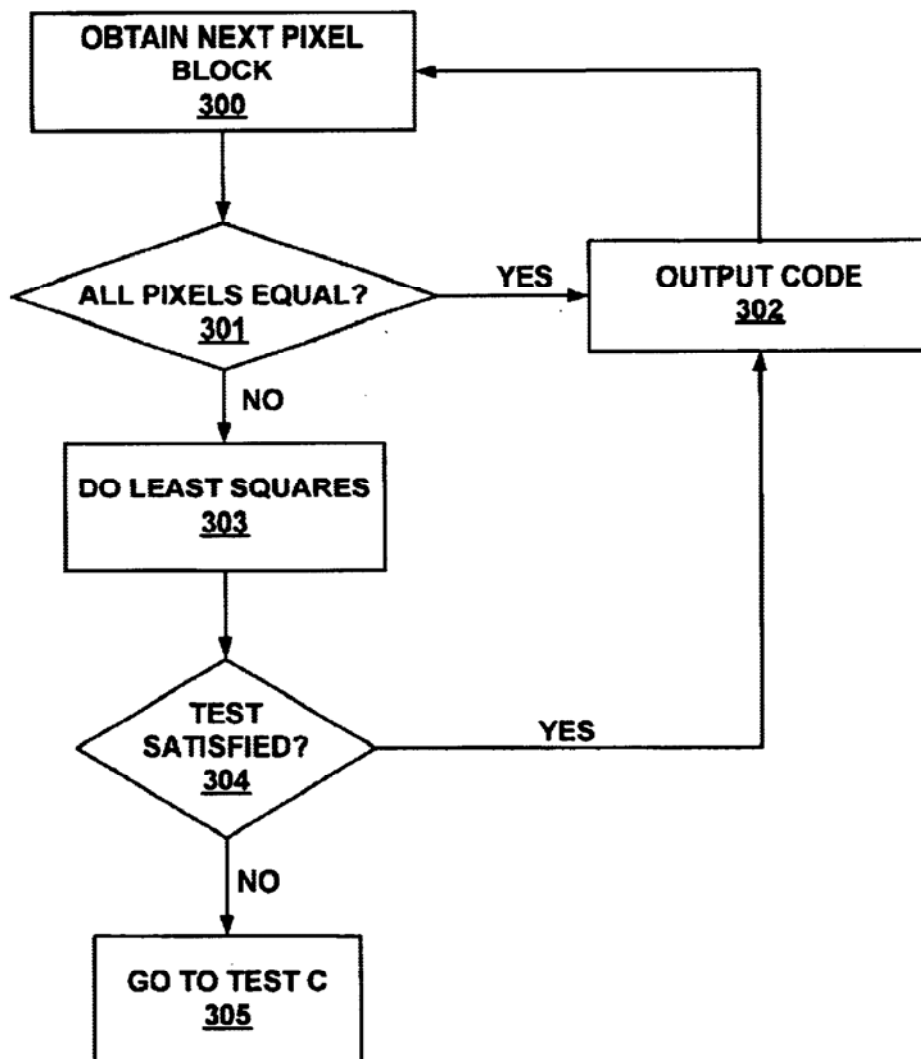


FIGURE 3

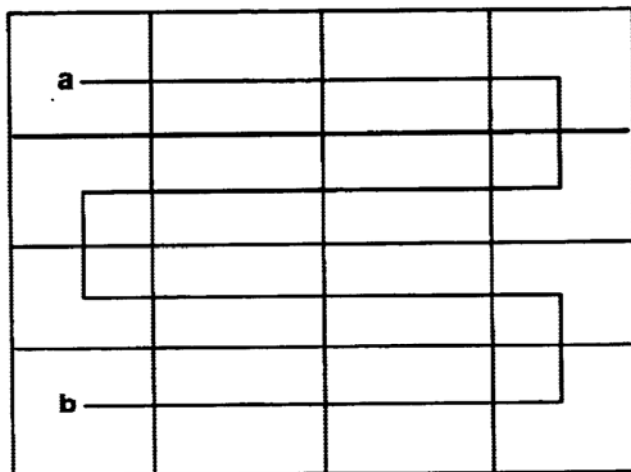


FIGURE 4

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