

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 24

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte YIWAN WONG

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Appeal No. 1999-2825  
Application 08/967,251

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ON BRIEF

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Before JERRY SMITH, BARRETT and BARRY, Administrative Patent Judges.

JERRY SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134 from the examiner's rejection of claims 1-9, which constitute all the claims in the application.

The disclosed invention pertains to a heuristic based motion estimation method and apparatus for video compression.

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Representative claim 1 is reproduced as follows:

1. A heuristic based motion estimation method for video compression, said method comprising the steps of:

defining a target block in a video clip;

defining a simplified signature block from said target block, said simplified signature block being based on a row and column sum of pixels only within said target block;

searching a reference frame using said simplified signature block;

searching for a best match in an area centered around said target block in said reference frame using said simplified signature block;

computing a sum of an absolute pixel-by-pixel difference using motion vectors of said area and a zero motion vector;

selecting a new block with a motion vector with a minimum sum of said absolute pixel-by-pixel difference; and

searching a new area centered around said new block for a minimum absolute difference match.

The examiner relies on the following reference:

Kondo et al. (Kondo)                      5,453,800                      Sep. 26, 1995

Claims 1-9 stand rejected under 35 U.S.C. § 102(e) as being anticipated by the disclosure of Kondo.

Rather than repeat the arguments of appellant or the examiner, we make reference to the brief and the answer for the respective details thereof.

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OPINION

We have carefully considered the subject matter on appeal, the rejection advanced by the examiner and the evidence of anticipation relied upon by the examiner as support for the rejection. We have, likewise, reviewed and taken into consideration, in reaching our decision, the appellant's arguments set forth in the brief along with the examiner's rationale in support of the rejection and arguments in rebuttal set forth in the examiner's answer.

It is our view, after consideration of the record before us, that the disclosure of Kondo does not fully meet the invention as recited in the claims on appeal. Accordingly, we reverse.

Anticipation is established only when a single prior art reference discloses, expressly or under the principles of inherency, each and every element of a claimed invention as well as disclosing structure which is capable of performing the recited functional limitations. RCA Corp. v. Applied Digital Data Systems, Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir.); cert. dismissed, 468 U.S. 1228 (1984); W.L. Gore and Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

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The examiner's rejection is set forth in the final rejection [Paper No. 13] and in the previous Office action [Paper No. 10]. With respect to all the claims on appeal, appellant argues that Kondo does not disclose or suggest the simplified signature block being based on a row and column sum of pixels only within the target block as claimed. Appellant argues that Kondo discloses a subtractor for forming differences and not an adder for forming sums [brief, pages 6-7].

The examiner responds that the generation of a spatial average value of motion for correction in Kondo anticipates using a row and column sum as claimed. The examiner also finds that the use of an integrating function in Kondo anticipates row and column sum manipulation, and for the case of the frequency distribution table formation, sum of difference output integration along both rows and columns before the averaging step [answer, pages 4-6].

We will not sustain this rejection of claims 1-9. Although we agree with the examiner that Kondo performs a sum of differences calculation along rows and columns of a data block, Kondo does not disclose the step of defining a simplified signature block from said target block, said simplified signature block being based on a row and column sum of pixels only within

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said target block, and searching a reference frame using said simplified signature block. The sum of differences calculation in Kondo is part of the motion vector estimation and uses a representative point memory of the full target block in making this calculation. The representative point memory simply assumes that the pixel located at the center of a block of data is representative of the entire block of data. There is no disclosure in Kondo that a simplified signature block should be defined based on a row and column sum of pixels as claimed. Although there are some similarities in the computations of Kondo and the claimed invention, the specifics of the claimed simplified signature block are not disclosed by Kondo.

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Since Kondo does not fully disclose every feature of the claimed invention, the rejection of claims 1-9 is not sustained. Therefore, the decision of the examiner rejecting claims 1-9 is reversed.

REVERSED

	)	
JERRY SMITH	)	
Administrative Patent Judge	)	
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	)	
	)	BOARD OF PATENT
LEE E. BARRETT	)	
Administrative Patent Judge	)	APPEALS AND
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	)	INTERFERENCES
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LANCE LEONARD BARRY	)	
Administrative Patent Judge	)	

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TEXAS INSTRUMENTS INCORPORATED  
P. O. BOX 655474, M/S 3999  
DALLAS, TX 75265

JS:caw