

(D.W.)

94-3612

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today  
(1) was not written for publication in a law journal and  
(2) is not binding precedent of the Board.

Paper No. 46

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

Ex parte EITARO NISHIHARA,  
ZHIXIONG WU, and YOSHIHIKO OGAWA

MAILED

SEP 25 1995

Appeal No. 94-3672  
Application 07/982,117<sup>1</sup>

PAT.&T.M. OFFICE  
BOARD OF PATENT APPEALS  
AND INTERFERENCES

ON BRIEF

Before THOMAS, CARDILLO, and JERRY SMITH, Administrative Patent Judges.

CARDILLO, Administrative Patent Judge.

<sup>1</sup> Application for patent filed November 25, 1992. According to applicants, the application is a continuation of Application 07/835,078, filed February 18, 1992; which is a continuation of Application 07/629,008, filed December 18, 1990; which is a continuation of Application 07/108,789, filed October 15, 1987.

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DECISION ON APPEAL

This is a decision on the appeal taken under 35 U.S.C. § 134 from the examiner's rejection of claims 3-15,<sup>2</sup> the only claims remaining in this application.

The invention is directed to an image compression apparatus including an orthogonal transformation of image blocks with a subsequent quantization of data based upon two tables. The first table storing bit number data with a second table storing a quantization band to decrease a quantization bandwidth as the number of bits allocated to the image data by the first table is reduced. We reproduce claim 15 as representative as follows:

15. An image compression apparatus comprising:

means for dividing an original image data into a plurality of image data blocks, each of which is constituted by a plurality of pixels;

orthogonal transformation means for orthogonally-transforming the image data blocks output from said dividing means and outputting a plurality of frequency components including a plurality of identical frequency components and corresponding to the pixels;

a first table for storing bit-number data representing the number of bits allocated in accordance with the frequency component of each of the orthogonally-transformed image data blocks obtained by said orthogonal transformation means;

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<sup>2</sup> We note in passing that appellants have indicated two minor errors of a typographical nature as to claims 3 and 13 in the appendix attached to the main brief.

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a second table for storing data for limiting a quantization band to decrease a quantization band width as the number of bits allocated to the image data by said first table is reduced; and

quantization means for quantizing the image data blocks in accordance with the data stored in said first and second tables.

The references of record relied upon by the examiner are:

Powell	4,442,454	Apr. 10, 1984
Cham et al. (Cham)	4,633,296	Dec. 30, 1986
Tzou	4,698,689	Oct. 6, 1987

Claims 3-15 stand rejected under 35 U.S.C. § 103. As evidence of obviousness, the examiner offers Powell considered with Cham and Tzou.

Rather than repeat the arguments of appellants or the examiner, we make reference to the briefs and the answer for the details thereof.

#### OPINION

After a careful review of the record before us, we find that we will reverse the rejection of claims 3-15. Accordingly, the decision of the examiner is reversed.

While we find it to be clear that Tzou alone teaches a good part of the subject matter of claim 15, we also find it to be clear that none of the applied references teaches or suggests

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subject matter like the second table of this claim. In this regard, we note that we agree with appellants' assessment of Tzou's teachings as to bit assignment maps and corresponding incremental bit assignment maps as noted in the paragraph bridging pages 13-14 of the main brief.

In reaching our conclusion we have considered the examiner's assertion that the claimed second table is somehow disclosed by "figure 2B : 1-8 and refer to column 5, lines 18-55" as noted at the bottom of page 5 of the answer. However, column 5, lines 26-31 explains that Fig. 2B(1)-(8) deals with bit iterations and not with second table subject matter in terms of data stored "for limiting a quantization band to decrease a quantization band width as the number of bits allocated to the image data by said first table is reduced." The examiner's further reference to column 5, lines 19-20 (answer, page 6) is also not convincing because this portion of Tzou merely indicates that Fig. 2B is an incremental bit assignment map without any hint at all to any effect of decreasing quantization bandwidth as the number of bits allocated by the first table (presumably that of Fig. 2A) is reduced.

Since the examiner points to nothing in the other two references teaching or suggesting the second table and we can find nothing in these references ourselves that points the way to

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this claimed subject matter, we must reverse the § 103 rejection of claim 15. Moreover, since each of the other independent claims on appeal (3 and 9) contains limitations similar to the second table of this claim, the rejection of these claims and the claims dependent thereon (4-8 and 10-14) must also be reversed.

In addition, we note that each of claims 3-14 also contains preprocessing limitations like those of claim 3. These limitations clearly require that a mean pixel value in each image data block must be determined and used to obtain a difference value between this block mean pixel value and each of the pixels of the corresponding block. Appellants have pointed out that Powell only performs averaging as a form of preprocessing but no subtraction of any kind. See the paragraph bridging pages 10-11 of the main brief. The only subtraction taught by Powell is as a part of his transformation and post transformation processing and not as any part of something reasonably termed preprocessing. Note the full paragraph on page 11 of the main brief.

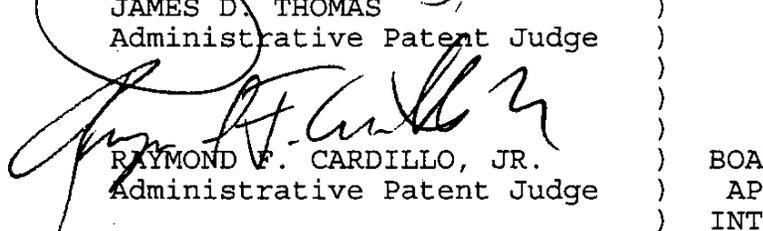
The examiner points to Fig. 5 and column 16, line 45 - column 17, line 4 in apparent rebuttal at page 9 of the answer. However, as appellants have set forth at the above-noted portion of page 11 of the main brief, the operations involved in these cited parts of Powell all involve final processing, not anything that can reasonably said to be preprocessing.

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Since there is nothing in Powell, Cham or Tzou that would further reasonably suggest the preprocessing use of forming a difference between any overall value associated with the pixels of an image block and the individual values of pixels in that block, the rejection of claims 3-14 on § 103 over these references must also be reversed on these grounds.

In light of the fore going, the decision of the examiner is reversed.

REVERSED

  
JAMES D. THOMAS )  
Administrative Patent Judge )  
  
RAYMOND F. CARDILLO, JR. )  
Administrative Patent Judge )  
  
JERRY SMITH )  
Administrative Patent Judge )

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