

**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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 30

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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**Ex parte** CHRISTOPHER H. STROLLE, ALLEN L. LIMBERG,  
WERNER F. WEDAM, RAYMOND SCHNITZLER,  
HERMANN J. WECKENBROCK, JUNG W. KO, JONG K. YUN

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Appeal No. 1997-0795  
Application 08/087,362

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HEARD: August 15, 2000

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Before JERRY SMITH, FLEMING and RUGGIERO, **Administrative Patent Judges.**  
FLEMING, **Administrative Patent Judge.**

**DECISION ON APPEAL**

This is a decision on appeal from the final rejection of claims 35 through 39 and 52 through 55. Claims 40 through 51 and 56 through 86 have been allowed. Claims 1 through 34 have been withdrawn from consideration.

The invention relates to circuitry for de-emphasizing high frequencies in a luminance signal and for reemphasizing high frequency in a reproduced luminance signal, useful in a system for transmitting a wide bandwidth luminance signal to a narrow bandwidth channel in a backward compatible manner.

Independent claim 35 is reproduced as follows:

35. Apparatus for reversing the spectrum of a video signal descriptive of the scanning of successive image frames supplied at a prescribed frame rate, which scanning is done line-by-line at a prescribed scan line rate, said apparatus comprising:

a source of said video signal having a lower video frequency portion and an upper video frequency portion;

a generator of a carrier signal of a carrier frequency that is a multiple of said prescribed scan line rate and above said upper video frequency portion;

a multiplier having a multiplicand input terminal coupled to receive one of said video and carrier signals and a multiplier input terminal coupled to receive another of said video and carrier signals for generating, a product signal having a first amplitude-modulation sideband that is lower in frequency than said carrier frequency and having a second amplitude-modulation sideband that is higher in frequency than said carrier frequency; and

means for reversing at said prescribed scan line rate the phase of the carrier signal received by said multiplier, each reversal being at a respective instant between successive scan lines, thereby enabling conversion of said product signal into a reversed-spectrum video signal with line-to-line inversion of phase.

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The Examiner relies on the following references:

Smith	2,716,151	Aug. 23, 1955
Drewery et al. (Drewery)	4,322,739	Mar. 30, 1982

Claims 35 through 39 and 52 through 55 stand rejected under 35 U.S.C. § 103 as being unpatentable over Smith in view of Drewery.<sup>1</sup>

Rather than reiterate the arguments of Appellants and the Examiner, reference is made to the briefs and answer for the respective details thereof.<sup>2</sup>

### OPINION

We will not sustain the rejections of claims 35 through 39 and 52 through 55 under 35 U.S.C. § 103.

The Examiner has failed to set forth a *prima facie* case. It is the burden of the Examiner to establish why one having ordinary skill in the art would have been led to the claimed invention by the express teachings or suggestions found in the prior art, or by implications contained in such teachings or suggestions. *In re Sernaker*, 702 F.2d 989, 995, 217, USPQ 1, 6 (Fed. Cir. 1983). "Additionally, when determining

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<sup>1</sup> We note on page 3 of the Examiner's answer that the Examiner states that the rejection is based upon Smith in view of Wilkinson. However, this appears to be a mistake since the remaining pages 4 and 5 set forth a rejection of the claims as being unpatentable over Smith in view of Drewery.

<sup>2</sup> Appellants filed an appeal brief on November 30, 1995, Appellants filed a reply brief on July 3, 1996. The Examiner mailed a letter on September 19, 1996 stating that the reply has been entered and considered but no further response by the Examiner is deemed necessary.

obviousness, the claimed invention should be considered as a whole; there is no legally recognizable 'heart' of the invention." ***Para-Ordnance Mfg. v. SGS Importer Int'l, Inc.***, 73 F.3d 1085, 1087, 37 USPQ2d 1237, 1239 (Fed. Cir. 1995), ***cert. denied***, 519 U.S. 822 (1996), citing ***W. L. Gore & Assocs., Inc. v. Garlock, Inc.***, 721 F.2d 1540, 1548, 220 USPQ 303, 309 (Fed. Cir. 1983), ***cert. denied***, 469 U.S. 851 (1984).

On page 4 of the answer, the Examiner states that Smith discloses that the video signals are processed using a subcarrier at an odd half line harmonic instead of using a line harmonic subcarrier inverted from line to line as specified in claims 35 through 39 and claims 52 through 55. The Examiner further states that Drewery discloses that a line harmonic frequency inverted from line to line, has the same spectral properties as an odd half line harmonic frequency. The Examiner argues that it would have been obvious to one of ordinary skill in the art to use a line harmonic subcarrier inverted at a line rate rather than the odd half line harmonic subcarrier of Smith in view of Drewery because they are art recognized equivalents.

Appellants argue on page 5 of the reply brief that contrary to the Examiner's assertion, Drewery in column 5, line 62 through column 6, line 9, do not teach that a line harmonic frequency inverted from line to line has the same spectral properties as an odd half line harmonic frequency. Appellants further point out that:

Drewery . . . offers no comment on these lines concerning continuous carrier signals at line harmonic frequencies or their spectral properties. Rather, Drewery . . . indicate that the positions at which digital samples are taken can be horizontally interleaved from line to line, even though the samples are taken at twice color subcarrier rate, by introducing a time perturbation of one quarter of a subcarrier period between each pair of lines." (Reply brief, pages 5-6.)

Appellants further point out that Drewery teaches that

with respect to the intraframe analysis of signals by two dimensional spatial Fourier transforms, the modulation signals generated by this sampling procedure has essential spectral properties identical to those generated by conventional sampling procedures in which the samples are in a continuous half-line offset frequency from a multiple of scan line frequency. (Reply brief, page 6.)

Appellants further argue that the Examiner has failed to establish that there is any meaningful analogy between apparatus for carrying out the Drewery perturbation of digital sampling intervals and Appellants' claimed

means for reversing at said prescribed scan line rate the phase of the carrier signal appearing at one of said terminals of said multiplier, each reversal being at a respective instant between successive scan lines, thereby to convert said product signal into a reversed-spectrum video signal with line to line inversion of senses of phase

as defined in independent claim 35, or Appellants' claimed

means for reversing the phase of the carrier at said prescribed scan line rate, each reversal being at a respective instant between successive scan lines, thereby to supply a folding carrier

as defined in claim 52.

The Federal Circuit states that "[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." ***In re Fritch***, 972 F.2d 1260, 1266 n.14, 23 USPQ2d 1780, 1783-84 n.14 (Fed. Cir. 1992), citing *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). It is further established that "[s]uch a suggestion may come from the nature of the problem to be solved, leading inventors to look to references relating to possible solutions to that problem." ***Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc.***, 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed. Cir. 1996), ***citing In re Rinehart***, 531 F.2d 1048, 1054, 189 USPQ 143, 149 (CCPA 1976)(considering the problem to be solved in a determination of obviousness). The Federal Circuit reasons in ***Para-Ordnance Mfg. Inc. v. SGS Importers Int'l Inc.***, 73 F.3d 1085, 1088-89, 37 USPQ2d 1237, 1239-40 (Fed. Cir. 1995), ***cert. denied***, 519 U.S. 822 (1996), that for the determination of obviousness, the court must answer whether one of ordinary skill in the art who sets out to solve the problem and who had before him in his workshop the prior art, would have been reasonably expected to use the solution that is claimed by the Appellants. However, "[o]bviousness may not be established using hindsight or in view of the teachings or suggestions of the invention." ***Para- Ordnance Mfg. v. SGS Importers Int'l***, 73 F.3d

at 1087, 37 USPQ2d at 1239, *citing W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d at 1551, 1553, 220 USPQ at 311, 312-13. In addition, our reviewing court requires the PTO to make specific findings on a suggestion to combine prior art references. *In re Dembiczak*, 175 F.3d 994, 1000-01, 50 USPQ2d 1614, 1617-19 (Fed. Cir. 1999).

Drewery discloses in column 5, lines 57 through 61, that in accordance to their invention, "the conflicting requirements are met by using a sampling frequency having a mean value of  $2f_{sc}$ , but by perturbing its phase so that it has the spatial structure of a continuous frequency which has a half line-frequency offset." In column 5, lines 62 through column 6, line 4, Drewery states by referring to Fig. 6 that the sampling sites are horizontally interleaved on alternative lines by introducing a perturbation of one quarter of a subcarrier period between each pair of lines.

However, we fail to find that Drewery suggests the modification as proposed by the Examiner of switching carrier phase 180 at the ends of the scan lines with the modulating carrier in a multiple of line frequencies, instead of between frames as taught by Smith. Therefore we will not sustain the rejection of claims 35 through 39 and 52 through 55 under 35 U.S.C. § 103.

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In view of the foregoing, the Examiner's decision is reversed.

**REVERSED**

JERRY SMITH	)	
Administrative Patent Judge	)	
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	)	
	)	BOARD OF PATENT
MICHAEL R. FLEMING	)	APPEALS AND
Administrative Patent Judge	)	INTERFERENCES
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JOSEPH F. RUGGIERO	)	
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