

UNITED STATES PATENT AND TRADEMARK OFFICE

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Ex parte CRAIG M. DOWELL and GEOFFREY T. DUNBAR

Appeal No. 2002-1777
Application No. 08/953,219

ON BRIEF

Before HAIRSTON, LALL, and BARRY, *Administrative Patent Judges*.
BARRY, *Administrative Patent Judge*.

DECISION ON APPEAL

A patent examiner rejected claims 1-30. The appellants appeal therefrom under 35 U.S.C. § 134(a). We reverse.

BACKGROUND

The invention at issue on appeal concerns the streaming of compressed images over a computer network. The Joint Photographic Experts Group ("JPEG") image compression algorithm can be used to compress images for transmission via a computer network. JPEG operates by first transmitting initial, absolute value data and then transmitting subsequent difference data, which is based on the preceding

data. (Spec. at 2, 14.) Consequently, if JPEG-coded data are lost or corrupted during transmission, any subsequent data are meaningless, and none of the represented image can be displayed. (*Id.* at 1-2.)

In contrast, the object of the invention is to configure image data, such as data suitable for JPEG compression, into a format that can be streamed and displayed even if part of the image is corrupted or lost during transmission. (*Id.* at 40.) More specifically, image data grouped into JPEG minimum coded units ("MCUs") are scrambled according to a reversible pattern that rearranges the MCUs *vis-à-vis* each other. (*Id.* at 4.) Then, the scrambled image data are compressed into restartable segments "by providing restart interval information to a JPEG compressor along with the reorganized MCUs." (*Id.*) After compression, the data are packetized, with the restart interval information written into headers that accompany of the packets, for transmission. (*Id.* at 40.)

When the packets arrive at their destination, they are depacketized and parsed to determine from their restart interval information which restart segments have arrived. Each restart segment that has arrived is sent to a JPEG decompressor, resulting in a scrambled bitmap image having gaps wherever data segments were lost. The image is then unscrambled, resulting in small, isolated pixels of missing data scattered

throughout the image instead of concentrated in areas. Fill-in techniques from the surrounding pixels are used to improve the perceived image quality further. (*Id.*)

A further understanding of the invention can be achieved by reading the following claims:

1. A method of configuring data, comprising, reorganizing a plurality of data sections into a reversible pattern of reorganized data, for at least one of the data sections that is reorganized, the reorganizing of the data section being performed independent of a temporal decoding relationship with any of the other data sections, compressing the data sections into a plurality of compressed segments that can be independently decompressed from one another, and maintaining segment location information identifying the locations of the compressed segments.

28. A method of configuring data, comprising, compressing the data into compressed segments that can be independently decompressed from one another, packetizing the compressed segments into packets for transmission, writing selected segment location information into a selected packet by identifying first and last segments in the selected packet, and writing the segment location information into a location in the selected packet that is separate from the first and last segments.

Claims 1-4, 6-17, and 21-30 stand rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 5,1503,012 ("Sotheran"). Claims 5 and 18 -20 stand rejected under 35 U.S.C. § 103(a) as obvious over Sotheran and U.S. Patent No. 4,835,607 ("Keith").

OPINION

Rather than reiterate the positions of the examiner or appellants *in toto*, we address the two points of contention therebetween. First, the examiner makes the following assertions.

Sotheran teaches a method of configuring data . . . comprising: reorganizing a plurality of data sections into a reversible pattern of recognized data (see figure 85 (note that two P-frames are reorganized into a reversible pattern (These two P-frames are moved way from I-frame in comparing; with the original position therefore, considered as reversible pattern)); and col. 48, lines 42-45 and 64-67), for at least one of the data section that is reorganized (see figure 85. Note that two P-frames are organized), the reorganizing of the data section being performed independent of a temporal decoding relationship with any of the other data sections (see col. 47, lines 15-20; and col. 48, lines 42-45 and 64-67. Note that temporal decoder as shown in the cited passages does not decode JPEG-encoded data, temporal decoder does reorganize or reorder MPEG encoded data. Thus, JPEG-encoded data is considered to be *applicant's any of the other data section*. Therefore, these cited passages meets claimed language). . . .

(Examiner's Answer at 3-4.) The appellants argue, "although all of the data types are compressed by the system of Sotheran, for all but one of the data types (MPEG), there are not data sections that are reorganized, and, for the one data type (MPEG) that includes data sections that are reorganized, there is not a single data section that is reorganized independent of a temporal decoding relationship between the data section and any other data sections." (Reply Br. at 4-5.)

"Analysis begins with a key legal question -- *what is the invention claimed?*" *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1567, 1 USPQ2d 1593, 1597 (Fed. Cir. 1987). In answering the question, "the Board must give claims their broadest reasonable construction. . . ." *In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1668 (Fed. Cir. 2000).

Here, independent claim 1 specifies in pertinent part the following limitations: "reorganizing a plurality of data sections into a reversible pattern of reorganized data, for at least one of the data sections that is reorganized, the reorganizing of the data section being performed independent of a temporal decoding relationship with any of the other data sections. . . ." Similarly, independent claim 16 specifies in pertinent part the following limitations: "reorganizing a plurality of data sections, for at least one of the data sections that is reorganized, the reorganizing of the data section being performed independent of a temporal decoding relationship with any of the other data sections. . . ." Further similarly, independent claim 29 specifies in pertinent part the following limitations: "reorganizing the original pattern of MCUs into a reversible pattern of reorganized MCUs, for at least one of the MCUs that is reorganized, the reorganization of the MCU being performed independent of a temporal decoding relationship with any of the other MCUs. . . ." Giving the independent claim their broadest, reasonable construction, the limitations require reorganizing sections of data wherein one of the

sections is reorganized in a way independent of a temporal decoding relationship between that section and the other sections being reorganized.

"Having construed the claim limitations at issue, we now compare the claims to the prior art to determine if the prior art anticipates those claims." *In re Cruciferous Sprout Litig.*, 64 USPQ2d 1202, 1206 (Fed. Cir. 2002). "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros., Inc. v. Union Oil Co.*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (citing *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 715, 223 USPQ 1264, 1270 (Fed. Cir. 1984); *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1548, 220 USPQ 193, 198 (Fed. Cir. 1983); *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 771, 218 USPQ 781, 789 (Fed. Cir. 1983)). "[A]bsence from the reference of any claimed element negates anticipation." *Kloster Speedsteel AB v. Crucible, Inc.*, 793 F.2d 1565, 1571, 230 USPQ 81, 84 (Fed. Cir. 1986).

Here, Sotheran's inventive "embodiment chosen for description . . . relates to the decoding of a plurality of encoded picture standards. More specifically, this embodiment relates to the decoding of any one of the well known standards known as JPEG, MPEG and H.261." Col. 1, ll. 17-21. For his part, the examiner relies on a

combination of the reference's MPEG-encoded data and its JPEG-encoded data as teaching the claimed reorganized sections of data. (Examiner's Answer at 3-4.) More specifically, he asserts that the reference's reorganization is performed by the "Temporal Decoder" described in columns 47 and 48 of Sotheran. (*Id.* ("[T]emporal decoder does reorganize or reorder MPEG encoded data."))

Although the reference's Temporal Decoder does reorganize Sotheran's MPEG-encoded data, the examiner fails to show that the Temporal Decoder reorganizes its JPEG-encoded data. To the contrary, he admits that it does not. (*Id.* at 3 ("Note that temporal decoder as shown in the cited passages does not decode JPEG-encoded data. . . .")) The first passage of the reference cited by the examiner confirms his admission. Specifically, it discloses that "the Temporal Decoder is not required to decode-JPEG encoded video. Accordingly, signals . . . pass directly through the Temporal Decoder without further processing when the Temporal Decoder is configured for JPEG operation." Col. 47, ll. 16-20. The absence of such a showing negates anticipation. Therefore, we reverse the anticipation rejection of claim 1 and claims 2-4 and 6-15, which depend therefrom; of claim 16 and claims 17 and 21-27, which depend therefrom; and of claim 29 and claim 30, which depends therefrom.

"In rejecting claims under 35 U.S.C. Section 103, the examiner bears the initial burden of presenting a *prima facie* case of obviousness." *In re Rijckaert*, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993)(citing *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992)). "A *prima facie* case of obviousness is established when the teachings from the prior art itself would . . . have suggested the claimed subject matter to a person of ordinary skill in the art." *In re Bell*, 991 F.2d 781, 783, 26 USPQ2d 1529, 1531 (Fed. Cir. 1993) (quoting *In re Rinehart*, 531 F.2d 1048, 1051, 189 USPQ 143, 147 (CCPA 1976)).

Here, the examiner fails to allege, let alone show, that the addition of Keith cures the aforementioned deficiency of Sotheran. Absent a teaching or suggestion of reorganizing sections of data wherein one of the sections is reorganized in a way independent of a temporal decoding relationship between that section and the other sections being reorganized, the examiner fails to present a *prima facie* case of obviousness. Therefore, we reverse the obviousness rejection of claims 5 and 18-20.

Second, the examiner asserts, "figure 33 describes the start and end of token which refers to maintaining segments location information." (Examiner's Answer at 9.) The appellants argue, "the disclosure in Sotheran is directed to objects that are placed

in a data stream to indicate the end of one data segment and the beginning of another."
(Appeal Br. at 23.)

Independent claim 28 specifies in pertinent part the following limitations: "writing selected segment location information into a selected packet by identifying first and last segments in the selected packet, and writing the segment location information into a location in the selected packet that is separate from the first and last segments." Giving the independent claim its broadest, reasonable construction, the limitations require writing data corresponding to the first and last segments of a packet of data into the packet at a location separate from the first and last segments.

Sotheran's Figure 33 "shows the start and the end of a token." Col. 8, l. 18. The reference explains that "[t]okens . . . consist of one or more words of (binary) digital data," col. 26, ll. 11-12; "[e]ach token consists of a series of binary bits separated into one or more blocks of token words." Col. 25, ll. 59-61. "Furthermore, the bits fall into one of three types: address bits (A), data bits (D), or an extension bit (E)." *Id.* at ll. 62-63. Regarding the latter, "an extension bit is transmitted along with the address and data fields in each token so that a processing stage can pass on a token (which can be of arbitrary length) without having to decode its address at all." Col. 27, ll. 6-9. "When a stage encounters a token word whose extension bit is LOW (a '0'), it is known to be

the last word of the token. The next word is then assumed to be the first word of a new token." *Id.* at 14-17. The examiner fails to show, however, that the LOW extension bit is written into the token at a location separate from the first and last words of the token. To the contrary, the LOW extension bit is part of the last word of the token. The absence of such a showing negates anticipation. Therefore, we reverse the anticipation rejection of claim 28.

CONCLUSION

In summary, the rejection of claims 1-4, 6-17, and 21-30 under § 102(e) and the rejection of claims 5 and 18 -20 under § 103(a) are reversed.

REVERSED

KENNETH W. HAIRSTON
Administrative Patent Judge

PARSHOTAM S. LALL
Administrative Patent Judge

LANCE LEONARD BARRY
Administrative Patent Judge

)
)
)
)
)
) BOARD OF PATENT
) APPEALS
) AND
) INTERFERENCES
)
)
)
)

Appeal No. 2002-1777
Application No. 08/953,219

Page 12

Michalik & Wylie, PLLC
14645 Bel-Red Road
Suite 103
Bellevue, WA 98007