Paper No. 39

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte KATSUJI IGARASHI,
JUN YONEMITSU,
YOICHI YAGASAKI,
YASUSHI FUJINAMI,
TOMOYUKI SATO, MOTOKI KATO,
AND TERUHIKO SUZUKI

Appeal No. 1998-0884
Application No. 08/084,642

HEARD: May 16, 2000

Before BARRETT, RUGGIERO, and BARRY, Administrative Patent Judges.

BARRY, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134 from the final rejection of claims 2, 8, 32, 43, 56, and 58.

We reverse.

BACKGROUND

The invention at issue in this appeal relates to predictive encoding of a television picture. By reducing temporal redundance between successive television pictures, predictive encoding avoids the need to transmit a picture in its entirety. More specifically, corrections are applied to a previously encoded picture to obtain a current picture. Frame-based motion compensation and field-based motion compensation are known types of predictive encoding.

In the invention, a television picture is treated as a mosaic of areas. Each area is predictively encoded using either frame-based motion compensation or field-based motion compensation, depending on which will produce the least amount of motion compensation data. Frame-based predictive encoding typically is used for areas that are stationary during a sequence of pictures. Field-based predictive encoding typically is used for areas exhibiting movement in the series of pictures. The type of orthogonal transformation is selected to match the type of predictive encoding. Such selection simplifies the construction of an encoder according to the invention.

Claim 2, which is representative for our purposes, follows:

> 2. A picture signal encoding method comprising the steps of:
> receiving an interlaced signal having frames each containing an odd field and an even field and representing a current picture and at least one other picture
> first evaluating said odd and even fields for said frame representing said current picture to determine how much data is produced if said current picture is encoded by frame-based predictive encoding, said frame-based predictive encoding using only odd field data and even field data from a previously encoded reference picture as a prediction of said current picture;
> second evaluating said odd and even fields for said frame representing said current picture to determine how much data is produced if said current picture is encoded by field-based predictive encoding, said field-based predictive encoding using only either the odd field data or the even field data from the previously encoded reference picture as the prediction of said current picture;
> determining whether frame-based prediction encoding or field-based prediction encoding of said current picture produces a lesser quantity of data;
> selecting said frame-based predictive encoding or said field-based predictive encoding as a function of the predictive encoding that produces said lesser quantity of data; and
> predictively encoding said current picture relative to at least one of the other pictures represented by said interlaced signal using the selected one of said frame-based predictive encoding and said field-based predictive encoding.

The reference relied on in rejecting the claims follows:

Krause et al. (Krause) 5,091,782 Feb. 25, 1992.

Claims 2, 8, 32, 43, 56, and 58 stand rejected under 35 U.S.C. § 102(b) as anticipated by Krause. Rather than repeat the arguments of the appellants or examiner in toto, we refer the reader to the briefs and answers for the respective details thereof.

OPINION

In reaching our decision in this appeal, we considered the subject matter on appeal and the rejection advanced by the examiner. Furthermore, we duly considered the arguments and evidence of the appellants and examiner. After considering the totality of the record, we are persuaded that the examiner erred in rejecting claims 2, 8, 32, 43, 56, and 58. Accordingly, we reverse.

We begin by noting the following principles from Rowe v. Dror, 112 F.3d 473, 478, 42 USPQ2d 1550, 1553 (Fed. Cir. 1997).

> A prior art reference anticipates a claim only if the reference discloses, either expressly or inherently, every limitation of the claim. See Verdegaal Bros., Inc. v. Union Oil Co., 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "[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).

With these principles in mind, we consider the appellants' argument and the examiner's reply.

Regarding claims 2, 8, 32, 43, 56, and 58, the appellants argue, "a selection based upon the amount of data that is produced (as in the present invention) is markedly different from a selection based upon the amount of error that is produced (as described by Krause '782)." (Appeal Br. at 16.) The examiner replies, "the claims must be interpreted as broadly as their terms reasonably allow.... In the present case, it is reasonable to interpret the term 'data' as 'error'...." (Examiner's Answer at 7.) He adds, "when data is ... read to encompass error, Krause clearly meets this limitation (col. 8, ln.49-57)." (Id. at 8.)

Claims 2, 8, 32, 43, 56, and 58 each specify in pertinent part the following limitation: "selecting said frame-based predictive encoding or said field-based predictive encoding as a function of the predictive encoding that produces said lesser quantity of data ...." In other words, the claims each recite selecting between frame-based predictive encoding and field-based predictive encoding based on which encoding produces a smaller quantity of data.

The examiner fails to show a disclosure of the claimed limitations in the prior art. Although Krause teaches selecting between frame-based predictive encoding and field-based predictive encoding, the selection is not based on which encoding produces a smaller quantity of data. To the contrary, the selection is based on which encoding is more accurate. Specifically, the reference includes the following passage.

> [A]ccumulated errors from the respective frame and field formatted paths are compared at a comparator 122, which provides an output signal at terminal 124 indicative of which path produced the least error for a particular pair of pixel data blocks.
>
> The output signal from the error evaluation and selection components actuates switch 39 (FIG. 3) to

> connect the compression path having the least error to downstream processing circuitry. [Col. 8, ll. 49-57.]

By selecting between frame-based predictive encoding and field-based predictive encoding based on which encoding technique produces a smaller error, Krause bases selection on accuracy.

Selection based on the accuracy of data is not tantamount to selection based on the quantity of the data. We see no inconsistency between this conclusion and the rule that the U.S. Patent and Trademark Office (PTO) should give claims their broadest reasonable interpretation during prosecution. "The operative word is *reasonable*: the PTO has no such obligation regarding *unreasonable* interpretations." Genentech, Inc. v. Wellcome Foundation Ltd., 29 F.3d 1555, 1564 n. 22, 31 USPQ2d 1161, 1168 n.22 (Fed. Cir. 1994).

Because Krause bases selection on the accuracy of data, we are not persuaded that the reference discloses the claimed limitation of "selecting said frame-based predictive encoding

or said field-based predictive encoding as a function of the predictive encoding that produces said lesser quantity of data ....” The absence of this disclosure negates anticipation. Therefore, we reverse the rejection of claims 2, 8, 32, 43, 56, and 58 as anticipated by Krause.

CONCLUSION

To summarize, the rejection of claims 2, 8, 32, 43, 56, and 58 under 35 U.S.C. § 102(b) is reversed.

REVERSED

LEE E. BARRETT Administrative Patent Judge	)
JOSEPH F. RUGGIERO Administrative Patent Judge	) BOARD OF PATENT APPEALS AND INTERFERENCES
LANCE LEONARD BARRY Administrative Patent Judge	)

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