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Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
12/274,323 11/19/2008 Kenneth Rose 032052-3254.US06 1035

25096 7590 11/28/2016
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PATENT-SEA
P.O. BOX 1247
SEATTLE, WA 98111-1247

EXAMINER

HESS, MICHAEL J

ART UNIT PAPER NUMBER

2481

NOTIFICATION DATE DELIVERY MODE

11/28/2016

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte KENNETH ROSE

Appeal 2015-003066
Application 12/274,323
Technology Center 2400

Before JASON V. MORGAN, JUSTIN BUSCH, and
NABEEL U. KHAN, *Administrative Patent Judges*.

KHAN, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant¹ appeals under 35 U.S.C. § 134(a) from the Non-Final Rejection of claims 1, 4–13, 16, 17, 22, 23, 25–29, 34, 35, 37–41 and 45–67. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

¹ According to Appellant, the real party in interest is Wasinoski Proctor, LLC. App. Br. 2.

THE INVENTION

Appellant's invention relates to:

A scalable predictive coder in which the current frame of data is predicted at the enhancement-layer by processing and combining the reconstructed signal at: (i) the current base-layer (or lower layers) frame; and (ii) the previous enhancement layer-frame. The combining rule takes into account the compressed prediction error of the base-layer, and the parameters used for its compression.

Abstract.

Exemplary independent claim 1 is reproduced below.

1. An encoder for performing scalable predictive coding, the encoder comprising:

a base layer encoder configured to reconstruct base layer data representing a current base layer frame to create reconstructed base layer data, the reconstruction performed using a base layer compression parameter, the base layer compression parameter comprising at least one of a quantized base layer residual, a quantization interval, or a partition region; and

an enhancement layer encoder configured to:

store, in a delay component, previous frame reconstructed enhancement layer data generated from processing a previous frame of enhancement layer data;

receive, distinct from the base layer data representing the base layer frame, the base layer compression parameter;

obtain, from the delay component, the previous frame reconstructed enhancement layer data;

reconstruct enhancement layer data representing the current frame based at least in part on the previous frame reconstructed enhancement layer data; and

predict enhancement layer data representing the current enhancement layer frame by processing and combining the reconstructed base layer data and the

previous frame reconstructed enhancement layer data, wherein the predicting enhancement layer data representing the current enhancement layer frame uses the received base layer compression parameter.

REFERENCES and REJECTIONS

1. Claims 1, 7, 13, 25, 37, and 64–66 are rejected under 35 U.S.C. § 112 first paragraph (pre-AIA), as failing to comply with the written description requirement. Non-Final Act. 9.

2. Claims 46, 49, 52, 55, and 58 are rejected under 35 U.S.C. § 112 first paragraph (pre-AIA), for lack of enablement. Non-Final Act. 9.

3. Claims 1, 13, 25, 37, 66, and 67 are rejected under 35 U.S.C. § 112 second paragraph (pre-AIA), as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. Non-Final Act. 10.

4. Claims 1, 13, and 66 are rejected under 35 U.S.C. § 112 second paragraph (pre AIA), as including means-plus-function limitations without disclosing corresponding structure, material, or acts for the claimed functions. Non Final Act. 11.

5. Claims 1, 4–13, 16, 17, 22, 23, 25–29, 34, 35, 37–41, and 45–67 are rejected under 35 U.S.C. § 102(b) as being anticipated by Horne et al. (US 5,515,377, issued May 7, 1996). Non-Final Act. 13.

6. Claims 1, 4–13, 16, 17, 22, 23, 25–29, 34, 35, 37–41, and 45–67 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Horne. Non-Final Act. 24.

ANALYSIS

A. Rejection of Claims 1, 7, 13, 25, 37, and 64–66 under the Written Description Requirement

The Examiner finds “the specification and provisional application failed to yield a sufficient disclosure regarding ‘receiv[ing], distinct from the base layer data representing the base layer frame, the base layer compression parameter,’ as recited in representative independent claim 1.” Non-Final Act. 9. Accordingly, the Examiner rejects claims 1, 7, 13, 25, 37, and 64–66 as failing the written description requirement of 35 U.S.C. § 112, first paragraph, and denies Appellant’s claimed priority to the filing date of Provisional Application No. 60/068,331 (hereinafter “the provisional application”) at least with respect to the disputed recitation. *See* Non-Final Act. 3.

Appellant argues that “persons of ordinary skill in the art would recognize that the inventors had possession of what is claimed” based on paragraphs 27, 44, 48, 51, and 54 and Figures 4 and 7 of Appellant’s Specification.² App. Br. 17. According to Appellant, these figures and passages show the base compression parameters being passed from the base layer to the enhancement layer separately from [i.e. distinct from] the representation of the base layer frame” App. Br. 20–21.

² Appellant also argues that the provisional application at pages 3–4 and Figure 2 shows that Appellant had possession of the claimed features as of the filing date of the provisional application and that the claims should benefit from the priority date of the provisional. However, there are no pending rejections that turn on whether Appellant had possession of the claimed features on the filing date of the provisional application rather than on the filing date of the non-provisional application. Thus, we do not address this issue.

A written “description must ‘clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed.’” *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc) (quoting *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563 (Fed. Cir. 1991)). “In other words, the test for sufficiency is whether the disclosure of the application relied upon reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date.” *Id.* (citing *Vas-Cath*, 935 F.2d at 1563). An applicant may show possession of the claimed invention by describing the claimed invention with all of its limitations using such descriptive means as words, structures, figures, diagrams, and formulas that fully set forth the claimed invention. *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997).

Here, the Figures and description included in the Specification show that the enhancement layer receives compression parameters from the base layer (or other layers below it) that are shown to be separate and distinct from other data received from the base layer representing the base layer frame, such as base layer bits and base layer residual. *See* Spec. Figs. 5–7 (showing base compression parameters, base layer bits, and base layer residual separately); *see also* Spec. ¶ 48 (indicating that the Compressor/Quantizer outputs (1) the layer’s bits, (2) reconstructed residual and (3) the set of compression parameters for use by a higher layer.).

The Examiner points to Appellant’s Specification as indicating that the data representing a frame is equivalent to or includes the compression parameters. *See* Ans. 20–21 (citing Spec. ¶ 17). But paragraph 17 of Appellant’s Specification explicitly defines a frame as either a “group of contiguous samples of an original input signal *or* a set of parameters

extracted from the original group of samples (such as a set of transform coefficients)” (emphasis added). Thus, the compression parameters are not necessarily equivalent to or included in the data representing a frame, but rather, could be samples of the original input signal. Further, even if the Examiner is correct that the frame data includes the compression parameters, the claim does not preclude overlap between the data representing the base layer frame and distinctly received compression parameters such that the distinctly received compression parameters are redundant. Whether redundant or not, Appellant’s Specification is replete with examples of compression parameters being distinctly received. Accordingly, we agree with Appellant that the Specification demonstrates that Appellant has satisfied the written description requirement.

B. Rejection of Claims 46, 49, 52, 55, and 58 under the Enablement Requirement

Claim 46, which we take as representative of claims 49, 52, 55 and 58, recites “the first enhancement layer encoder reconstructs enhancement layer data representing the current frame *using* a first enhancement layer compression parameter.” App. Br. 52 (Claims App’x) (emphasis added).

The Examiner finds

the ‘use’ limitation encompasses all ‘uses’ of a first enhancement layer compression parameter that lead to enhancement layer data representing a current frame. This overly broad scope is not supportable by the Specification. Particularly, the Examiner finds that, as to *Wands* factor (8), ‘the breadth of the claims’ with regard to the ‘use’ of a first enhancement layer compression parameter is unbounded as it encompasses every means of obtaining enhancement layer data. Examiner finds that as to *Wands* factor (2), ‘the amount of direction and guidance presented’ by Applicant is minimal; as to *Wands* factor (3), there

are no ‘working examples’ presented by Applicant in the Specification.

Non-Final Act. 9–10.

Appellant argues the Specification describes that “[a]t each layer, a set of parameters are used within that layer to generate a prediction for that layer.” App. Br. 26 (citing Spec. ¶¶ 27, 48, and 51); *see also* Reply Br. 9 (citing Spec. ¶¶ 16, 48–49). This, according to Appellant, provides the requisite enablement to one of ordinary skill to “reconstruct[] enhancement layer data representing the current frame *using* a first enhancement layer compression parameter,” as claimed. Further, Appellant argues “not everything necessary to practice the invention need be disclosed. In fact, what is well-known is best omitted.” Reply Br. 10 (citations omitted). Appellant argues that “[a]s shown by both the Horne reference . . . and the Background section of Applicant’s Specification, an encoder that ‘reconstructs enhancement layer data’ ‘us[ing] a first enhancement layer compression parameter’ is known by those of ordinary skill in the art” and therefore does not have to be disclosed. Reply Br. 10 (citing Horne 4:3–20).

We agree with Appellant. The test for compliance with the enablement requirement is whether the disclosure, as filed, is sufficiently complete to enable one of ordinary skill in the art to make and use the claimed invention without undue experimentation. *In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1988). The limitation at issue requires the first enhancement layer encoder to reconstruct enhancement layer data using a first enhancement layer compression parameter. In other words, the encoder is using data from its own layer to reconstruct the current frame. As Appellant points out, such an approach was well-known. Reply Br. 10. Thus, we agree with Appellant that one of ordinary skill in the art would

have been able to practice the claimed feature without undue experimentation.

C. Rejection of Claims 1, 13, 25, 37, 66, and 67 as Being Indefinite for Reciting “receive, distinct from the base layer data representing the base layer frame, the base layer compression parameter”

The Examiner finds “the limitation drawn to ‘receive, distinct from the base layer data representing the base layer frame, the base layer compression parameter’ [of claim 1, which we take as representative] does not make sense to one skilled in the art.” Non-Final Act. 10. According to the Examiner “‘the base layer data representing the base layer frame’ would necessarily include [the compression] parameters [such as a quantized base layer residual, a quantization interval, or a partition region].” *Id.* Thus, the Examiner concludes that “[t]he skilled artisan does not immediately understand what ‘the base layer data representing the base layer frame’ means if it is not the distinct parameters received separately by the enhancement layer encoder.” *Id.* at 11. The Examiner points to Appellant’s Specification as further indicating that the compression parameters are at least a portion of the data representing a base layer frame. *See* Ans. 27 (citing Spec. ¶ 17 (“A ‘frame’ as used herein refers [] to . . . a set of parameters . . .”)).

Appellant argues that, read in light of the Specification, one of ordinary skill would understand that the base layer frame would be represented as coefficients, such as transform coefficients, and the compression parameters would be separate from those coefficients. App. Br. 29. Further, Appellant points out the Examiner is relying only on a portion of paragraph 17, and that paragraph 17 when read as a whole, indicates the

base layer frame could alternatively consist of “a group of contiguous samples of an original input signal.” Reply Br. 3–4, 12. Appellant concludes that

the definitions of terms in Applicants’ Specification and their use in the claims does not necessitate that a frame is equivalent to compression parameters, does not require that compression parameters are always quantized base layer residuals, and does not prohibit overlap between the reconstructed base layer data received by the enhancement layer and the distinctly received compression parameter.

Reply Br. 12.

We agree with Appellant. “A patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig, Insts., Inc.*, 134 S. Ct. 2120, 2124 (2014). As explained above (*supra* section A), paragraph 17 defines a frame, at least alternatively, as “a group of contiguous samples of an original input signal.” Spec. ¶ 17. Thus, frame data does not necessarily include the compression parameters. Further, also explained above (*supra* section A), we agree that the claim does not prohibit overlap between the base layer data and the compression parameters. Accordingly, we find that claim 1 delineates, with reasonable certainty to those skilled in the art, the scope of the invention.

D. Rejection of Claims 1, 13, and 66 as Being Indefinite for Reciting Means-Plus-Function Elements without Disclosing Corresponding Structure

The Examiner finds “[c]laims 1, 13, and 66 disclose limitations that are presumed to invoke 35 U.S.C. § 112, sixth paragraph” (Non-Final Act.

12), but that “the written description fails to disclose the corresponding structure, material, or acts for the claimed functions” (Non-Final Act. 11) of those limitations. Specifically, the Examiner finds the term “encoder configured to” is a “non-structural term (a term that simply is a substitute for the term ‘means for’) not modified by sufficient structure.” Non-Final Act. 13.

Appellant argues “persons of ordinary skill in the art would understand that an ‘encoder’ is a term for the structure that performs encoding functions.” App. Br. 31 (citing Microsoft Computer Dictionary, 5th ed., 2002). Thus, according to Appellant “an encoder/decoder is recognized in the art to denote specific structure, and is not simply ‘a nonce word’ that is ‘merely a substitute for the term means for.’” App. Br. 31 (internal quotations omitted).

“The standard [for whether § 112 paragraph 6 applies] is whether the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure.” *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1349 (Fed. Cir. 2015). The use of the word “means” in a claim limitation creates a rebuttable presumption that § 112 paragraph 6 applies. *Personalized Media Communications, LLC v. Int’l Trade Comm’n*, 161 F.3d 696, 703–04 (Fed. Cir. 1998). Conversely, the failure to use the word “means” creates a rebuttable presumption that § 112 paragraph 6 does not apply. *Id.* “When a claim term lacks the word ‘means,’ the presumption [that § 112, paragraph 6 does not apply] can be overcome . . . if . . . the claim term fails to ‘recite sufficiently definite structure’ or else recites ‘function without reciting sufficient structure for

performing that function.’” *Williamson*, 792 F.3d at 1349 (quoting *Watts v. XL Sys., Inc.*, 232 F.3d 877, 880 (Fed. Cir. 2000)).

First, we note that the term “means” is not used in the claim limitations, creating a presumption that § 112, paragraph 6 does not apply. Next, looking to the words of the claim, we agree with Appellant that the term “encoder” denotes specific structure and is not merely a substitute for the word “means.” In particular, the term encoder is modified by the terms “base layer” and “enhancement layer” indicating to one of skill in the art that the encoders in question are used in a multi-layer scalable coding system and the claims themselves describe the functions performed by the encoders in sufficient detail to impart structure to the claimed encoders. For example, the claims describe the base layer encoder as reconstructing base layer data using as input base layer compression parameters, and describe the enhancement layer encoder as storing and obtaining previous frame enhancement layer data, receiving base layer frame data and compression parameters, reconstructing enhancement layer data, and predicting enhancement layer data representing the current frame using the base layer data and compression parameters.

Thus, we find that the Examiner has not overcome the presumption that § 112, paragraph 6 does not apply to claim limitations at issue. Accordingly, we do not sustain the Examiner’s rejection of claims 1, 13, and 66 as indefinite under 35 U.S.C. § 112, second paragraph.

E. Rejection of Claims 1, 4–13, 16, 17, 22, 23, 25–29, 34, 35, 37–41, and 45–67 under 35 U.S.C. § 102(b)

The Examiner finds Horne discloses “an enhancement layer encoder configured to . . . receive, distinct from the base layer data representing the

base layer frame, the base layer compression parameter . . . and predict enhancement layer data representing the current enhancement layer frame . . . wherein the predicting . . . uses the received base layer compression parameter.” Non-Final Act. 15 (citing Horne 1:39–41, 4:33–38, 5:20–26). In particular, the Examiner finds Horne discloses the use of base layer image data to produce the enhancement layer image signal. *Id.* This is done by decoding the base layer bit stream in Horne’s two-layer video encoder. According to the Examiner, the base layer bit stream includes base layer compression parameters that are distinctly provided to the enhancement layer. Ans. 31–32 (citing Horne Fig. 2, 4:3–7, 4:46–47).

Appellant argues “Horne’s description of a two-layer encoder does not disclose that a compression parameter of the base layer is received by the enhancement later [sic] and used in the enhancement later [sic] to predict enhancement layer frames.” App. Br. 36. Specifically, Appellant argues Horne does not show the compression parameter, such as Q_{BL} , being received separately or being used in predicting the enhancement layer bits. App. Br. 36–37.

We agree with Appellant. Although Horne teaches the use of base layer image data to produce the enhancement layer image signal (*see* Horne 4:33–38), it does not explicitly disclose that compression parameters are received by the enhancement layer encoder distinct from the base layer image data. For example, Horne indicates that the base layer quantization step size, Q_{BL} , is used for encoding the base layer, but does not explicitly disclose Q_{BL} being used to encode the enhancement layer. *See* Horne 3:62–63. Accordingly, we do not sustain the Examiner’s rejection under 35 U.S.C. § 102(b).

F. Rejection of Claims 1, 4–13, 16, 17, 22, 23, 25–29, 34, 35, 37–41, and 45–67 under 35 U.S.C. § 103(a)

The Examiner finds

With respect to the limitation of the independent claims regarding receipt of base layer data representing the base layer frame distinct from the base layer compression parameter, the Examiner notes that parsing data from a base layer stream in order to send it separately is obvious. To combine things that are combinable or separate things that are separable where such combination or separation yields nothing more than a predictable result is the cornerstone of obviousness under KSR.

Non-Final Act. 24.

Appellant responds that “[h]owever, the independent claims are not obvious, not only because Horne does not disclose that a base layer compression parameter is received distinct from the base layer data representing the base layer frame, but also because Horne does not disclose that this distinct compression parameter is used to predict enhancement layer data representing the current enhancement layer frame.” App. Br. 43.

We agree with Appellant. As explained above, Horne does not disclose that base layer compression parameters are received by the enhancement layer distinct from other data representing the base layer frame. Further, the Examiner’s finding that it would have been obvious to separate the compression parameters from the base layer frame data rests on the assumption that the base layer frame data necessarily includes the compression parameters. The Examiner has not provided sufficient evidentiary basis for such a finding. Accordingly, we do not sustain the Examiner’s rejection under 35 U.S.C. § 103(a).

DECISION

The Examiner's rejection of claims 1, 7, 13, 25, 37, and 64–66 under 35 U.S.C. § 112 first paragraph (pre-AIA) for failing to comply with the written description requirement is reversed.

The Examiner's rejection of claims 46, 49, 52, 55, and 58 under 35 U.S.C. § 112 first paragraph (pre-AIA) for lack of enablement is reversed.

The Examiner's rejection of claims 1, 13, 25, 37, 66, and 67 under 35 U.S.C. § 112 second paragraph (pre-AIA), as being indefinite is reversed.

The Examiner's rejection of claims 1, 4–13, 16, 17, 22, 23, 25–29, 34, 35, 37–41, and 45–67 under 35 U.S.C. § 102(b) is reversed.

The Examiner's rejection of claims 1, 4–13, 16, 17, 22, 23, 25–29, 34, 35, 37–41, and 45–67 under 35 U.S.C. § 103(a) is reversed.

REVERSED