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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JOHN HANCOCK LUPHER,
JOHN FRANCIS McHALE, and
DOUGLAS AINSWORTH SCOTT[1]

Appeal 2018-006169
Application 14/715,590
Technology Center 2600

Before ALLEN R. MacDONALD, JEREMY J. CURCURI, and
JON M. JURGOVAN, *Administrative Patent Judges*.

JURGOVAN, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant seeks review under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 1–20. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.[2]

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[1] We use the word "Appellant" to refer to "applicant(s)" as defined in 37 C.F.R. § 1.42. According to Appellant, the real party in interest is TrackingPoint, Inc. Appeal Br. 1.

[2] Our Decision refers to the Specification ("Spec.") filed May 18, 2015, the Final Office Action ("Final Act.") mailed January 25, 2017, the Appeal Brief ("Appeal Br.") filed October 26, 2017, the Examiner's Answer ("Ans.") mailed February 22, 2018, and the Reply Brief ("Reply Br.") filed April 23, 2018.

BACKGROUND

The claims are directed to a rifle scope with a video display, an optical sensor to capture video of a view area, and image processing circuitry that compresses video frames, aligns visual elements within adjacent compressed frames, and decompresses the frames to produce video output of the view area that is stabilized relative to the target. Spec. Abstract.

Claim 1, reproduced below with argued claim language shown in emphasis, is representative of the claimed invention, and incorporates the mentioned features:

> 1. A rifle scope comprising:
> a display;
> at least one optical sensor to capture video of a view area; and
> image processing circuitry coupled to the display and the at least one optical sensor, the image processing circuitry configured to compress each frame of a sequence of frames of the video, to select visual elements within the compressed frames, *to align the visual elements within adjacent ones of the compressed frames of the sequence of compressed frames*, and to decompress the frames to produce a video output corresponding to the view area that is stabilized relative to a target.

Appeal Br. 14 (Claims Appendix). Independent claims 9 and 16 are apparatus and method claims similar to claim 1. The remaining claims depend from one of these three independent claims.

REJECTIONS[3]

Claims 1 and 3–20 stand rejected under 35 U.S.C. § 103 based on Bockmon (US 2012/0042559 A1, published February 23, 2012),

[3] The Final Office Action rejected claims 1 and 3–20 on the ground of non-statutory obviousness-type double patenting but this rejection was

Venkatraman (US 2013/0107066, published May 2, 2013) and Qi (US 2005/0179784 A1, published August 18, 2005). Final Act. 35–48.

Claim 2 stands rejected under 35 U.S.C. § 103 based on Bockmon, Venkatraman, Qi, and Ishii (US 2012/0086822 A1, published April 12, 2012).

ANALYSIS

Obviousness Rejections of Claims 1 and 3–20

A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc*., 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) where present, objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

Appellant argues similar limitations of independent claims 1, 9, and 16 together as one group and presents no separate arguments for the dependent claims. App. Br. 12. Accordingly, we select claim 1 as

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withdrawn in the Examiner's Answer in view of the terminal disclaimer filed May 31, 2017. *See* Final Act. 5–34, Ans. 15. Accordingly, we do not address this rejection in our decision.

representative of all of the claims grouped together, and we specifically address only this claim in our analysis. *See* 37 C.F.R. § 41.37(c)(1)(iv).

Appellant argues that the combination of Bockmon, Venkatraman, and Qi fails to disclose the limitation of claim 1 reciting image processing circuitry configured "to align the visual elements within adjacent ones of the compressed frames of the sequence of compressed frames" and similar limitations in independent claims 9 and 16.

Specifically, Appellant contends "Bockmon discloses electromagnetic actuators that compensate for man-machine wobble and that mechanically position isolated components to correct for angular deflection." App. Br. 6 (citing Bockman, Abstract, ¶¶ 3, 38). Appellant contends "Bockmon does not disclose or otherwise suggest aligning visual elements within compressed frames as recited in the claims." *Id.* Although we agree with Appellant's assessment of Bockmon, at least with respect to the parts cited, the Examiner did not rely on Bockmon to disclose the argued claim feature. Final Act. 36. Accordingly, we proceed in our analysis to Appellant's argument concerning Venkatraman.

Appellant states "Venkatraman discloses using image processing techniques to track the shift in images on a frame-by-frame basis while tracking movement of the camera using inertial sensors and calculating a degree of similarity between the image shift predicted by image processing as compared to estimates based on the inertial sensors." App. Br. 6 (citing Venkatraman, Abstract). Appellant argues, however, that "Venkatraman makes no mention of aligning visual elements within compressed frames as recited in the claims." App. Br. 6.

We agree with Appellant's argument that Venkatraman fails to disclose the argued claim feature. Although the Examiner finds that Venkatraman discloses alignment of visual elements within adjacent frames for stabilization, Venkatraman's technique appears to use *uncompressed* images. App. Br. 36 (citing Venkatraman Fig. 9 [916], ¶ 101). The Examiner acknowledges that Venkatraman is deficient because it uses *uncompressed* images for stabilization, and thus relies on Qi to supply the missing claim limitation. *Id.* at 37 (citing Qi ¶¶ 39, 59).

Appellant argues that Qi uses motion vectors calculated from uncompressed frames for both image stabilization and compression. App. Br. 7–8 (citing Qi ¶¶ 56, 57, 66, Fig. 3). Hence, Appellant argues Qi does not disclose stabilization by aligning visual elements in *compressed* frames. The Examiner responds that Qi teaches "[t]he stabilizer 7 estimates the global (frame-level) motion vectors in the image based on the block-level and/or macroblock level vectors computed from the MPEG compression step." Ans. 16 (citing Qi ¶ 43). The Examiner interprets this Qi statement as meaning that "the MPEG compression step has already been performed when the global motion vectors are being computed for image stabilization." *Id.*

The argued claim language, however, requires aligning visual elements within adjacent *compressed* frames. Qi's use of the same motion vectors for compression and stabilization does not disclose the use of visual elements within the compressed frames to align them (notwithstanding that Qi may disclose that compression occurs before stabilization). In other words, as Appellant states, "Qi does not mention performing stabilization on compressed frames" using visual elements as claimed. App. Br. 8.

Accordingly, the Examiner errs in finding Qi discloses the argued claim feature, and the rejection lacks "some articulated reasoning with rational underpinning to support the legal conclusion of obviousness." *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

Thus, we do not sustain the obviousness rejection of claim 1. As we have grouped the claims together in our analysis, we also do not sustain the obviousness rejections of claims 3–20 for the same reasons.

Our decision on the argument addressed above is dispositive of the obviousness rejections of claims 1 and 3–20, so we do not reach Appellant's remaining arguments.

Obviousness Rejection of Claim 2

Claim 2 depends from claim 1, and was separately rejected over the combination of Bockmon, Venkatraman, Qi, and Ishii. Final Act. 48–49. The Examiner relies on Ishii to disclose a field programmable gate array (FPGA) circuit as recited in claim 2, and does not rely on Ishii to disclose the argued feature of claim 1 discussed above, which Appellant contends is missing from Ishii. *Id.*; App. Br. 9. Accordingly, for the same reasons stated for claim 1, we do not sustain the rejection of claim 2.

DECISION

We reverse the Examiner's rejection of claims 1–20 as obvious under 35 U.S.C. § 103.

Claims Rejected	35 U.S.C. §	References	Affirmed	Reversed
1, 3–20	103	Bockmon, Venkatraman, Qi		1, 3–20
2	103	Bockmon, Venkatraman, Qi, Ishii		2
Overall Outcome				1–20

REVERSED