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O""Shea Getz P.C.
10 Waterside Drive, Suite 205
Farmington, CT 06032

EXAMINER
KHOLDEBARIN, IMAN K

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte NIAZ L. KHAN, DARRYN W. UNFRICHT, ROBERT A. LEVINE and NITEN V. LALPURIA

Appeal 2019-000853
Application 14/341,117
Technology Center 2600

Before ST. JOHN COURTENAY III, LARRY J. HUME, and IRVIN E. BRANCH, *Administrative Patent Judges*.

COURTENAY, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant,[1] Niaz L. Khan et al., appeals from the Examiner's decision rejecting claims 1–9 and 17–25, which constitute all the claims pending in this application. The Examiner indicates that claims 10–16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Final Act. 3. We have jurisdiction over the pending claims under 35 U.S.C. § 6(b).

We affirm-in-part.

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[1] We use the word "Appellant" to refer to "applicant" as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party in interest as Abbott Point of Care, Inc. Appeal Br. 3.

STATEMENT OF THE CASE[2]

Disclosed embodiments of Appellant's invention relate to "apparatus and methods for analysis of whole blood samples in general, and to apparatus and methods for image analysis and image preparation and presentation of unlysed, undiluted whole blood samples in particular." Spec. ¶ 1.

Exemplary Claim

1. A method for imaging a sample of substantially undiluted whole blood, comprising the steps of:

> providing a substantially undiluted whole blood sample admixed with at least one non-Wright stain colorant, which colorant is operable to differentially identify constituents within the sample;
>
> providing an analysis device having an analyzer with at least one processor, at least one sample illuminator, and at least one image sensor;
>
> creating an image of the sample using the analysis device; and
>
> *transforming at least a portion of the created image using the analysis device to produce a transformed image having a coloration recognizable as a* **Wright stained sample**.

Appeal Br. 14 (Claims Appendix) (disputed limitations emphasized).

Rejections

A. Claims 1–3, 5–8, 21, 24, and 25 are rejected under 35 U.S.C. § 103 as being obvious over the combined teachings and suggestions of Wardlaw et al. (US 2009/0238439 A1; published Sept. 24, 2009; (hereinafter

[2] We herein refer to the Final Office Action, mailed Dec. 26, 2017 ("Final Act."); Appeal Brief, filed May 25, 2018 ("Appeal Br."); Examiner's 2nd Answer, mailed Oct. 23, 2018 ("Ans."); and the Reply Brief, filed Nov. 13, 2018 ("Reply Br.").

"Wardlaw '439")) and Luther et al. (US 2009/0252398 A1; published Oct. 8, 2009; (hereinafter "Luther")). Final Act. 3.

B. Claim 4 is rejected under 35 U.S.C. § 103 as being obvious over the combined teachings and suggestions of Wardlaw '439, Luther, and further in view of Ehrenkranz (US 2013/0273524 A1; published Oct. 17, 2013). Final Act. 16.

C. Claim 9 is rejected under 35 U.S.C. § 103 as being obvious over the combined teachings and suggestions of Wardlaw '439, Luther and further in view of Wardlaw (US 5,948,686; issued Sept. 7, 1999) (hereinafter "Wardlaw '686"). Final Act. 18.

D. Claims 17–20, 22, and 23 are rejected under 35 U.S.C. § 103 as being obvious over the combined teachings and suggestions of Wardlaw '439, Luther and further in view of Levine et al. (US 2009/0239257 A1; published Sept. 24, 2009). Final Act. 20. [3]

Principal Issue on Appeal

Issue: Is the disputed limitation ("*transforming at least a portion of the created image using the analysis device to produce a transformed image having a coloration recognizable as a* **Wright stained sample**")

[3] Rejection D: Although claim 22 is listed in the Final Action Summary page as being rejected, we find no detailed statement of rejection to review for dependent claim 22 in the Final Action, mailed Dec. 26, 2017. However, we note dependent claims 20 and 23 recite the same limitations as claim 22: "wherein the constituents are selected from the list of white blood cells, red blood cells, platelets, inclusion bodies, hematoparasites, and plasma." Therefore, we consider claims 20, 22, and 23, as standing or falling together.

taught or suggested by the cited combination of Wardlaw '439 and Luther, within the meaning of independent claim l, as rejected by the Examiner under Rejection A?[4] (emphasis added).

ANALYSIS

Rejection A of Independent Claim 1 under §103

Appellant contends:

> The rejection states that "Wardlaw ['439] does not expressly disclose transforming an image to a transformed image having recognizable coloration." (p. 6, 5-5-17 Office Action). Appellant notes that none of the present claims recite "transforming an image to a transformed image having *recognizable coloration"*. Rather, all of the claims recite "transforming at least a portion of the created image using the analysis device to *produce a transformed image having a coloration recognizable as a Wright stained sample"*. Hence, the rejection ignores a key aspect of the present claims.

Appeal Br. 8.

Appellant urges there is "no disclosure of Wright stain whatsoever in Luther." Appeal Br. 9. Appellant further contends that transforming a 2D image to a 3D image as Luther teaches "is not the same as or suggestive of producing 'a transformed image having a coloration recognizable as a Wright stained sample.'" Appeal Br. 10.

Claim Construction

As an initial matter of claim construction, we turn to the Specification for *context*, and find a "Wright stained blood" sample is described and

[4] We give the contested claim limitations the broadest reasonable interpretation (BRI) consistent with the Specification. *See In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997).

defined as a term of art that would have been familiar to experienced technicians:

> Historically, whole blood samples have been analyzed by a trained technician preparing a dyed sample of blood smeared onto a slide, and subsequently examining the smear under a light microscope. A standard method of preparing the smear includes adding Wright's stain to the sample to facilitate the visual differentiation of constituents within the sample by the clinician. Wright's stain, first prepared in 1902 and extensively used since, is a specially prepared mixture of methylene blue and eosin in methanol, used in staining blood smears. *Because it is a long standing standard examination technique,* **Wright stained blood samples are familiar to experienced technicians**. Since the introduction of Wright's stain, there have been several other related stains including buffered Wright stain, Wright-Giemsa stain, and buffered Wright-Giemsa stain. For purposes of this disclosure, the terms "Wright's stain" and "Wright stain" **are defined** to refer to the Wright's stain itself, as well as stains related thereto such as those listed heretofore.

Spec. ¶ 2 (emphasis added).

The Examiner finds Luther teaches or at least suggests the disputed claim 1 limitation: "*transforming at least a portion of the created image using the analysis device to produce a transformed image having a coloration recognizable as a* **Wright stained sample**," as follows:

> (Refer to para [034]; "in one specific embodiment, a required 3D-like transformed image can be formed as described in reference to either FIG. 1 or FIG. 3 from corresponding original images of a dyed sample, where such original images are captured in spectral bands respectively corresponding to bands of absorption or fluorescence of dyes contained in the sample." and alternatively at para [036]; "specific embodiments of the invention may allow for combining the three-dimensionally perceived image processing described in reference to FIGS. 1 and 3 with other signal enhancement techniques such as spectral deconvolution and pseudo-coloring to produce color-

> compensated 3D-perceived images. For example, elements of the 3D-images (produced at the output of steps 118 of FIG. 1 or 328 of FIG. 3) that correspond to different constituents of the imaged sample tissue may be enhanced by adding pseudo-colors, at respective computer process steps 120 or 330, according to color gamut associated with both dyes contained in the samples and spectral distribution of illuminating light.").

Final Act. 6.

However, the Examiner does not cite to any section of either reference that refers to a transformed image having a coloration recognizable as a Wright stained sample. Based upon our review of the evidence relied upon by the Examiner to support Rejection A, neither Wardlaw '439 nor Luther teach or suggest a "**Wright stained sample**." Claim 1 (emphasis added).

Therefore, based upon our review of the record, we find the Examiner does not explain in sufficient detail how the cited prior art combination teaches or suggests the contested limitation of "transforming at least a portion of the created image using the analysis device to *produce a transformed image having a coloration recognizable as a* **Wright stained sample**." Claim 1 (emphasis added). The Examiner could have relied upon the "Background of the Invention" section of the Specification (paragraph 2) as evidence that a "Wright Stained sample" was a well-known term of art at the time of the invention, but the Examiner did not do so.[5]

Therefore, we are constrained by the record before us to find the Examiner erred in concluding that the cited combination of Wardlaw '439 and Luther renders obvious Appellant's independent claim 1.

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[5] Although the Board is authorized to reject claims under 37 C.F.R. § 41.50(b), no inference should be drawn when the Board elects not to do so. *See* Manual of Patent Examining Procedure (MPEP) § 1213.02.

Accordingly, we reverse the Examiner's § 103 Rejection A of independent claim 1, and for the same reasons, we also reverse Rejection A of remaining independent claims 21, 24, and 25, which each recite the contested limitation "**Wright stained sample**" in the context of similar claim language of commensurate scope. (emphasis added).

Because we have reversed rejection A of each independent claim on appeal, for the same reasons, we also reverse Rejection A of each dependent claim also rejected under Rejection A.

Rejection B of Dependent Claim 4 under §103

Turning to Rejection B of dependent claim 4, we note claim 4 recites: "The method of claim 3, wherein the transformed image includes at least one image portion representative of a red blood cell, which image portion has coloration recognizable as a **Wright stained** red blood cell." (emphasis added).

We note claim 4 was rejected over the combined teachings and suggestions of Wardlaw '439, Luther, and Ehrenkranz. The Examiner finds Ehrenkranz teaches an "image portion has coloration recognizable as a Wright stained red blood cell (Refer to para [030, 035, 099]; 'Staining step (Stain Port): introduce staining fluid (e.g., Wright's stain) into the counting chamber to stain the monolayer of cells.')." Final Act. 17.

Turning to the evidence, Ehrenkranz describes that a Wright stain may be used to stain the peripheral blood smear, for example, at paragraph 35:

> Preparing the peripheral blood smear on a transparent slide may further include (5) fixing the peripheral blood smear in alcohol, and (6) staining the peripheral blood smear with a stain. For

> example, **Wright's stain may be used to stain the peripheral blood smear.**

Ehrenkranz, ¶ 35.

Thus, we find Ehrenkranz, considered in combination with Wardlaw '439 and Luther, teaches the use of a slide image portion that has coloration recognizable as a **Wright stained** red blood cell. Turning to the record, we find Appellant has not advanced any separate, substantive arguments traversing the Examiner's Rejection B of claim 4, which relies upon Ehrenkranz (e.g., ¶ 35) for teaching the Wright stain.

Instead, Appellant merely argues: "Appellant respectfully traverses the rejection of claim 4. Claim 4 depends from claim 1. Appellant directs the Board to the above remarks. For at least the reasons cited above, [A]ppellant respectfully submits that claim 4 is patentable and request[s] the rejection be reversed." Appeal Br. 12.

But claim 1 was rejected under Rejection A, which is supported by the Examiner's proffered combination of Wardlaw '439 and Luther. Ehrenkranz was additionally relied upon as evidence in support of Rejection B of claim 4, but was not relied upon in support of Rejection A. Although Luther teaches transforming an image in terms of "a 3D-like image is created from two 2D-images" (¶ 30), Luther also teaches: "the user may define the *spectral bands 304* for image acquisition (which may or may not be *associated with* **dyes** that the biological sample may contain) and request to acquire and show, 306, on the graphical display the two original images captured in the *chosen spectral bands*." Luther ¶ 30.

Given this evidence (including Ehrenkranz's Wright stain ¶ 35), we are of the view that the claimed **Wright stained** color transformation would have merely been a predictable result, particularly given that a **Wright stained** blood sample is a term of art, as described in Appellant's Specification at paragraph two, as reproduced above. [6] Therefore, we find Appellant's argument unpersuasive regarding Rejection B of dependent claim 4, because Appellant fails to address the teachings and suggestions of the tertiary Ehrenkranz reference, as relied upon by the Examiner as evidence in support of Rejection B of claim 4. Accordingly, we sustain the Examiner's Rejection B of claim 4.[7]

Rejections C and D under §103

Regarding the remaining dependent claims rejected under Rejections C and D, on this record, we find the Examiner has not shown how the additionally cited secondary references ("Wardlaw '686 and Levine

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[6] *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 401 (2007) ("[A] combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.").

[7] Regarding our affirmance of Rejection B of dependent claim 4, see *Callaway Golf Co. v. Acushnet Co*., 576 F.3d 1331, 1344 (Fed. Cir. 2009) ("A broader independent claim cannot be nonobvious where a dependent claim stemming from that independent claim is invalid for obviousness."). In the event of further prosecution of this application, and regarding all claims on appeal, we leave it to the Examiner to consider *Callaway Golf* and the description of "Wright Stain" in Appellant's "Background of the Invention" section at paragraph two of the Specification. Although the Board is authorized to reject claims under 37 C.F.R. § 41.50(b), no inference should be drawn when the Board elects not to do so. *See* Manual of Patent Examining Procedure (MPEP) § 1213.02.

respectively) overcome the deficiencies of the base Wardlaw '439 and Luther combination, as discussed above regarding Rejection A of independent claims 1, 21, 24, and 25. Therefore, we are constrained on this record to reverse the Examiner's Rejection C of claim 9, and for the same reason, we reverse Rejection D of claims 17–20, 22, and 23. [8]

CONCLUSIONS

The Examiner erred with respect to obviousness Rejections A, C, and D of claims 1–3, 5–9 and 17–25 under 35 U.S.C. § 103 over the cited prior art combinations of record.

The Examiner did not err with respect to obviousness Rejection B of dependent claim 4 under 35 U.S.C. § 103 over the cited prior art combination of record.

[8] As noted above (n.3, *supra*.), we consider claims 20, 22, and 23, as standing or falling together. Since we are reversing the Examiner's Final Action Rejection D of claims 20 and 23, dependent claim 22 stands with dependent claims 20 and 23, which recite essentially identical limitations to claim 22.

DECISION SUMMARY

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1–3, 5–8, 21, 24, 25	103	Wardlaw ’439, Luther		1–3, 5–8, 21, 24, 25
4	103	Wardlaw ’439, Luther, Ehrenkranz	4	
9	103	Wardlaw ’439, Luther, Wardlaw ’686		9
17–20, 22, 23	103	Wardlaw ’439, Luther, Levine		17–20, 22, 23
Overall Outcome			4	1–3, 5–9, 17–25

FINALITY AND RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv). *See* 37 C.F.R. § 41.50(f).

AFFIRMED-IN-PART