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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte DIRK PREIKSZAS

Appeal 2015-001573
Application 12/931,356
Technology Center 2800

Before BRADLEY R. GARRIS, WESLEY B. DERRICK, and
MONTÉ T. SQUIRE, *Administrative Patent Judges*.

SQUIRE, *Administrative Patent Judge*.

DECISION ON APPEAL¹

Appellant² appeals the Examiner's final rejection of claims 1–17.
35 U.S.C. § 134(a). We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ In this decision, we refer to the Final Office Action appealed from, mailed September 10, 2013 (“Final Act.”), the Appeal Brief dated July 8, 2014 (“App. Br.”), the Examiner’s Answer to the Appeal Brief dated September 8, 2014 (“Ans.”), and the Reply Brief dated November 7, 2014 (“Reply Br.”).

² Appellant identifies Carl Zeiss Microscopy GmbH as the Real Party in Interest. App. Br. 2.

The Claimed Invention

Appellant's disclosure relates to a particle beam device and to a method for operation of a particle beam device. Spec. 1, ll. 5–7, Abstract. Claim 1 is representative of the claims on appeal and is reproduced below from the Claims Appendix to the Appeal Brief (App. Br. 21, 22) (key disputed limitations italicized):

1. A particle beam device, comprising:
 - a sample chamber;
 - a sample which is arranged in the sample chamber;
 - a first particle beam column having a first optical axis, wherein the first particle beam column has a first beam generator for generating a first particle beam and has a first objective lens for focusing the first particle beam onto the sample, wherein, when the first particle beam strikes the sample, interactions between the first particle beam and the sample create first interaction particles;
 - a second particle beam column having a second optical axis, wherein the second particle beam column has a second beam generator for generating a second particle beam and has a second objective lens for focusing the second particle beam onto the sample, wherein, when the second particle beam strikes the sample, interactions between the second particle beam and the sample create second interaction particles;
 - at least one detector which is arranged in a first cavity in a first hollow body, wherein the first cavity has a first inlet opening, wherein a third axis runs from the first inlet opening to the detector, wherein the first optical axis of the first particle beam column and the second optical axis of the second particle beam column are arranged on one plane, wherein the third axis is arranged inclined with respect to or at right angles to the plane, wherein the sample is at a sample potential, wherein the first hollow body is at a first hollow body potential, and wherein a first hollow body voltage is a first potential difference between the first hollow body potential and the sample potential;
 - at least one control electrode, which is at a control electrode potential, arranged on the first particle beam column,*

a control electrode voltage being a third potential difference between the control electrode potential and the sample potential, wherein the second particle beam column has a terminating electrode which is at a terminating electrode potential, wherein a terminating electrode voltage is a fourth potential difference between the terminating electrode potential and the sample potential, wherein at least one of: the first hollow body voltage, the control electrode voltage or the terminating electrode voltage is chosen such that the first interaction particles or the second interaction particles enter the first cavity in the first hollow body through the first inlet opening, and wherein the control electrode voltage is set by a third voltage supply unit and the terminating electrode voltage is set by a fourth voltage supply unit.

The References

The Examiner relies on the following references as evidence in rejecting the claims on appeal:

Thompson et al., (hereinafter "Thompson")	US 5,164,594	Nov. 17, 1992
Sanderson et al., (hereinafter "Sanderson")	US 5,223,711	June 29, 1993
Holle	US 5,463,218	Oct. 31, 1995
Brooks et al., (hereinafter "Brooks")	US 6,417,625 B1	July 9, 2002
Matsuya	US 2004/0227099 A1	Nov. 18, 2004
Tokuda et al., (hereinafter "Tokuda")	US 6,927,391 B2	Aug. 9, 2005
Ogawa	US 2006/0249692 A1	Nov. 9, 2006
Gerlach et al., (hereinafter "Gerlach")	US 2008/0308742 A1	Dec. 18, 2008

The Rejections

On appeal, the Examiner maintains the following rejections:

1. Claims 1–4, 6–8, and 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Thompson in view of Tokuda, Gerlach, Sanderson, and Ogawa. Final Act. 2.
2. Claim 5 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Thompson, Tokuda, Gerlach, Sanderson, and Ogawa as applied to claim 1 above, and further in view of Brooks. Final Act. 6.
3. Claims 9–12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Thompson, Tokuda, Gerlach, Sanderson, and Ogawa as applied to claim 1 above, and further in view of Holle. Final Act. 6.
4. Claims 14 and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Thompson in view of Ogawa. Final Act. 8.
5. Claim 16 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Thompson and Ogawa as applied to claim 14 above, and further in view of Gerlach, Sanderson, and Tokuda. Final Act. 9.
6. Claim 17 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Thompson in view of Tokuda, Gerlach, Sanderson, and Matsuya. Final Act. 11.

OPINION

Rejection 1

Appellant argues claims 1–4, 6–8, and 13 as a group. We select claim 1 as representative of this group, and the remaining claims stand or fall with claim 1. 37 C.F.R. § 41.37(c)(1)(iv).

The Examiner determines that the combination of Thompson, Tokuda, Gerlach, Sanderson, and Ogawa suggests a particle beam device satisfying all of the limitations of claim 1 and would have rendered claim 1 obvious. Final Act. 2–4. The Examiner finds that the combination of Thompson, Tokuda, Gerlach, Sanderson suggests nearly all of claim 1’s limitations, but that it does not “explicitly teach wherein the control electrode voltage is set by a control-electrode-voltage supply unit and the terminating electrode is set by a terminating electrode voltage supply unit,” as recited in the claim. *Id.* at 4. The Examiner, however, relies on Ogawa for teaching this missing limitation. *Id.* In particular, the Examiner finds that Ogawa teaches that “an electrode voltage is set by a voltage supply unit for a first particle beam column and an electrode voltage on another electrode in a second beam column is set by a second voltage supply unit.” *Id.* (citing Ogawa, ¶ 17).

Based on the above findings, the Examiner concludes that it would have been an obvious to a person of ordinary skill in the art at the time of the invention have added “more voltage supply units to set the control electrode voltage and terminating electrode voltage of the first and second beam columns of Thompson, respectively, via the first and second power supply units of Ogawa” because the modification “would have allowed the operator more flexibility in setting voltages for separate beam column components” and a “voltage for a terminating electrode and the voltage for the control electrode could have been separately optimized for desired performance of the two beam columns.” Final Act. 4.

Appellant argues that the Examiner has failed to establish a prima facie case of obviousness because the “cited references do not teach or fairly suggest every element of Appellant’s claimed invention.” App. Br. 12. In

particular, Appellant argues that: (1) the Examiner’s “duplication of essential parts” argument is insufficient to support the Examiner’s analysis (*id.* at 14); (2) the Examiner’s analysis is factually and legally inaccurate with respect to the Thompson reference (*id.* at 15); (3) Thompson does not teach or suggest that the voltage(s) for both electrodes may be set “independently from each other” as claimed (*id.* at 16); (4) the Examiner has not adequately explained or provided sufficient motivation for one of ordinary skill in the art to modify Thompson’s system in the manner proposed (*id.* at 17); and (5) Thompson appears to explicitly teach away from Appellant’s claimed invention (*id.*).

We are not persuaded by Appellant’s arguments. Based on the record before us, we find that the Examiner’s finding that the combination of Thompson, Tokuda, Gerlach, Sanderson, and Ogawa suggests all of claim 1’s limitations is supported by a preponderance of the evidence and based on sound technical reasoning. Thompson, Abstract, Fig. 1, col. 5, ll. 25–32; Tokuda, Figs. 16, 26, 27; Gerlach, Fig. 2b; Sanderson, Figs. 1, 2, col. 5, ll. 40-50; Ogawa, ¶ 17. Appellant’s argument reveals no reversible error in the Examiner’s analysis and factual findings in this regard.

The Examiner also provides a reasoned basis and identifies sufficient evidence in the record to evince why one of ordinary skill would have combined the teachings of the references to arrive at Appellant’s claimed invention. Final Act. 4 (explaining that one of ordinary skill would have been motivated to combine modified Thompson’s and Ogawa’s teachings because such modification would have allowed the operator more flexibility in setting voltages for separate beam column components and a voltage for a terminating electrode and the voltage for the control electrode could have

been separately optimized for desired performance of the two beam columns); Ogawa, ¶ 17. *See also KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 420 (2007) (explaining that any need or problem known in the art can provide a reason for combining the elements in the manner claimed).

Appellant fails to direct us to sufficient evidence or provide an adequate technical explanation to show why the Examiner's articulated reasoning for combining the teachings of the prior art to arrive at the claimed invention lacks a rational underpinning or is otherwise based on some other reversible error.

We do not find Appellant's argument regarding the "mere duplication of essential parts" (App. Br. 14) persuasive because it does not adequately address the Examiner's principal finding that Ogawa explicitly teaches the voltage supply unit limitations of claim 1 and the Examiner's stated reasoning for combining Ogawa's teachings with modified Thompson's teachings to arrive at Appellant's claimed invention, which, as previously discussed above, is well-supported by the evidence and based on sound technical reasoning.

Appellant's argument regarding both electrodes being set independently from one another is unpersuasive because it attacks the references individually rather than the collective teachings of the prior art as a whole. One cannot show non-obviousness by attacking references individually where the rejection is based on a combination of references. *See In re Keller*, 642 F.2d 413, 425 (CCPA 1981). Appellant's argument is premised on what Appellant contends Thompson teaches individually, and not the combined teachings of the cited references as a whole and what the combined teachings would have suggested to one of ordinary skill in the art.

As previously discussed, the Examiner relies on Ogawa—not Thompson—for suggesting that the voltage supply units for the control and terminating electrodes may be independently set.

Appellant’s contention that Thompson teaches away from the claimed invention is unpersuasive because Appellant does not identify sufficient evidence to support it, and we will not read into the references a teaching away where no such language exists. *Cf. DyStar Textilfarben GmbH v. C.H. Patrick Co.*, 464 F.3d 1356, 1364 (Fed. Cir. 2006); *see also In re De Blauwe*, 736 F.2d 699, 705 (Fed. Cir. 1984). As the Examiner correctly points out (Ans. 2), Appellant does not identify any teaching in Thompson or the other cited references which discourages one of ordinary skill in the art from combining their teachings to arrive at the claimed invention as found by the Examiner. *In re Fulton*, 391 F.3d 1195, 1201 (finding that there is no teaching away where the prior art’s disclosure “does not criticize, discredit, or otherwise discourage the solution claimed”).

Appellant’s argument that “Thompson’s tubular electrode 5 is not an electrode of the second beam column/source 15,” which is raised for the first time at page 4 in the Reply Brief, appears to be untimely because it was not previously raised by Appellant in the Appeal Brief. 37 C.F.R. § 41.41(b)(2). In any event, this argument is unpersuasive because it mischaracterizes the Examiner’s findings regarding Thompson’s teachings. We are not persuaded, contrary to what Appellant’s argument suggests, that the Examiner identifies Thompson’s tubular electrode 5 as a terminating electrode. *See* Final Act. 3 (identifying “part 16” of Thompson Fig. 1).

Accordingly, we affirm the Examiner's rejection of claims 1–4, 6–8, and 13 under 35 U.S.C. § 103(a) as unpatentable over the combination of Thompson, Tokuda, Gerlach, Sanderson, and Ogawa.

Rejections 2, 3, 4, 5, and 6

Arguing all the claims together, Appellant does not present separate or any additional substantive arguments in the Appeal Brief in response to the Examiner's Rejections 2 through 6. Rather, Appellant contends categorically that the “Tokuda, Gerlach, Sanderson, Ogawa, Brooks, Holle, Matsuya” references do not overcome the “deficiencies in the use of Thompson” and that the Examiner “presents piece-meal, hindsight reasoning” and uses “select piece-meal disclosures of [the] cited prior art references” to arrive at Appellant's claimed invention. App. Br. 18; *see also* Reply Br. 9 (asserting that the “deficiency of Thompson with respect to Appellant's claimed invention is not overcome by citing to the use of another reference or rationale”).

Appellant's contentions in this regard are conclusory and, without more, insufficient to establish reversible error in the Examiner's findings and analysis. *In re De Blauwe*, 736 F.2d 699, 705 (Fed. Cir. 1984).

Accordingly, for the reasons discussed above in affirming the Examiner's Rejection 1, we affirm the Examiner's Rejections 2 through 6.

DECISION/ORDER

The Examiner's rejections of claims 1–17 are affirmed.

It is ordered that the Examiner's decision is affirmed.

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Application 12/931,356

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

AFFIRMED