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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte DAREN CHEN and JINGJIE ZHANG

Appeal 2019-002032
Application 13/979,260
Technology Center 3700

Before STEFAN STAICOVICI, EDWARD A. BROWN, and
JILL D. HILL, *Administrative Patent Judges*.

BROWN, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 1–3, 6, 8–18, and 20.² We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE and enter a NEW GROUND OF REJECTION.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as Washington University. Appeal Br. 1.

² Claims 4, 5 and 19 are withdrawn from consideration. Appeal Br. 2.

CLAIMED SUBJECT MATTER

Claims 1, 10, and 16 are independent. Claim 1 illustrates the claimed subject matter.

1. A nozzle for electrohydrodynamic atomization, said nozzle comprising:
 - an inner rod having an outer surface;
 - an outer tube concentrically aligned with and spaced from said inner rod, said outer tube having an inner surface and a length;
 - a longitudinally extending channel defined between said inner rod and said outer tube, said channel defining a circular slit, the circular slit having a width defined by said outer surface of said inner rod and said inner surface of said outer tube; and
 - at least one electrically chargeable notch located on said inner rod and proximate said circular slit,wherein said inner rod extends beyond the length of the outer tube such that at least a portion of the outer surface of the inner rod is exposed from the inner surface of the outer tube, the at least one electrically chargeable notch being spaced from the outer tube.

Appeal Br. 15 (Claims App.).

REJECTION

Claims 1–3, 6, 8–18, and 20 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

ANALYSIS

New Ground of Rejection

Claim 16 recites, *inter alia*, “a plurality of notches *located on at least one of the inner rod and proximate the circular slit* wherein said inner rod extends beyond the length of the outer tube such that at least a portion of the

outer surface of the inner rod is exposed from the inner surface of the outer rod, *the plurality of notches being spaced from the outer tube.*” Appeal Br. 18–19 (Claims App.) (emphasis added). The meaning of “a plurality of notches located on at least one of the inner rod and proximate the circular slit” is unclear and it appears that this limitation may either include extra words or be incomplete. Particularly, it is unclear whether this limitation should instead recite, for example, “a plurality of notches located on at least [] the inner rod and proximate the circular slit,” or “a plurality of notches located on at least one of the inner rod and the outer rod and proximate the circular slit.”

Additionally, the final limitation of “the plurality of notches being spaced from the outer tube” implies that these notches are *not* on the outer tube, but are on the *inner* tube. However, the preceding limitation “a plurality of notches located on at least one of the inner rod and proximate the circular slit” does not recite clearly that the notches are on the inner tube, making the location of the plurality of notches in the recited nozzle unclear for this additional reason.

A claim is properly rejected as indefinite under § 112, second paragraph, if, after applying the broadest reasonable interpretation in light of the specification, the metes and bounds of a claim are not clear because it “contains words or phrases whose meaning is unclear.” *In re Packard*, 751 F.3d 1307, 1310 (Fed. Cir. 2014). Here, because claim 16 contains language having an unclear meaning, we conclude that claim 16 and its dependent claims 17, 18, and 20 fail to comply with the requirements of 35 U.S.C. § 112, second paragraph. Therefore, pursuant to 37 C.F.R. § 41.50(b), we

enter a new ground of rejection against claims 16–18 and 20 under 35 U.S.C. § 112, second paragraph.

Written Description Requirement

Claims 1–3, 6, and 8–15

Claim 1 recites a nozzle comprising, *inter alia*, an inner rod, an outer tube, and “at least one electrically chargeable notch *located on said inner rod*,” “wherein said inner rod *extends beyond the length of the outer tube* such that at least a portion of the outer surface of the inner rod is exposed from the inner surface of the outer tube.” Appeal Br. 15 (Claims App.) (emphasis added). Claim 10 recites a system comprising, *inter alia*, a nozzle comprising a first component and a second component, in contrast to an inner rod and an outer tube, respectively, as recited in claim 1. *Id.* at 16–17 (Claims App.).

The Examiner finds that Appellant’s Specification does not provide an adequate written description of the nozzle recited in claim 1, or the system recited in claim 10, because the Specification does not disclose a nozzle where (a) the notch or plurality of notches is/are formed on the inner rod of claim 1 (or on the first component of claim 10) *and* (b) the inner rod extends beyond the outer tube of claim 1 (or the first component extends beyond the second component of claim 10). Final Act. 5. The Examiner finds that there is “support for a nozzle that has the notches being on the inner rod, and support for a *separate* nozzle (a different embodiment) where the inner rod extend[s] beyond the outer tube,” but there is *not* “support for a single nozzle that has *both* notches being on the inner rod, *and* the inner rod extend[s] beyond the outer tube.” Ans. 3. The Examiner determines that

Figure 2 and paragraph 26 of the Specification support notches located on the inner rod, the outer tube, or both, but do not support a nozzle with the inner rod extending beyond the outer tube. *Id.* at 5–6. The Examiner concedes that the Specification discloses other embodiments of the nozzle having notches on the inner rod, but finds that these embodiments do not show or describe the inner rod extending beyond the outer tube. Final Act. 6; Ans. 4. In that regard, the Examiner notes that Figure 6G shows the inner rod extending beyond the outer tube of nozzle 300, as described in paragraph 34 of the Specification, but finds that Figure 6G shows the *outer* tube, not the inner tube, having notches. Ans. 4. The Examiner determines that none of the nozzles 300 shown in Figures 6A–6G have notches on the inner rod *and* the inner rod extends beyond the outer tube. Final Act. 6.

The test for sufficiency under the written description requirement of 35 U.S.C. § 112 “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.” *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc). To have “possession,” “the specification must . . . show that the inventor actually invented the invention claimed.” *Id.* Here, Appellant contends that one skilled in the art would conclude that it had possession of “a nozzle having a notch or plurality of notches formed on an inner rod and the inner rod extending beyond the outer tube.” Appeal Br. 7. Appellant points out that paragraph 26 of the Specification describes that “notches 230 may be located only on inner rod 206 or outer tube 208.” *Id.* at 7–8 (quoting Spec. ¶ 26) (emphasis omitted). Appellant also points out that paragraph 34 of the Specification supports the limitation that “the inner rod extends

beyond the outer tube,” in describing that “[t]he embodiment of nozzle 300 shown in FIG. 6G is substantially similar to the embodiment shown in FIG. 6F, except that center piece 320 is extended with respect to end portion [sic] 322.” *Id.* at 8. Appellant contends that one of ordinary skill in the art would conclude that Appellant had possession of a nozzle having *both* an inner rod extending beyond an outer tube as set forth in paragraph 34 wherein only the inner rod had notches as set forth in paragraph 26. *Id.* at 9.

We are persuaded that the claimed subject matter is adequately supported by the original disclosure. First, we agree with Appellant that the original disclosure is not required to include a drawing figure that *illustrates* a nozzle where (a) the notch or plurality of notches is/are formed on the inner rod (or first component) *and* (b) the inner rod extends beyond the outer tube (or second component), as recited in claims 1 and 10, to satisfy the written description requirement. Appeal Br. 9.

Second, the written description requirement does not require the original disclosure to describe the claimed invention *in haec verba*. *Ariad*, 598 F.3d at 1352; *Cordis Corp. v. Medtronic Ave., Inc.*, 339 F.3d 1352, 1364 (Fed. Cir. 2003). Additionally, the original claims are part of the original Specification. *In re Gardner*, 480 F.2d 879, 879 (CCPA 1973). Here, we note that original claim 1 recites “at least one electrically chargeable notch located on *at least one of said inner rod and said outer tube proximate said circular slit.*” Spec. 12 (emphasis added). We further note that original claim 8 depends from claim 1 and recites that “said inner rod comprises a center piece at the spray end of said nozzle and said outer tube comprises an end portion at the spray end of said nozzle, *said center piece extended with respect to said end portion.*” *Id.* (emphasis added). Accordingly, claim 8

encompasses an embodiment of the nozzle that comprises “at least one electrically chargeable notch located on . . . said inner rod” (from claim 1), wherein the center piece of the inner rod is “extended with respect to” the end portion of the outer tube at the spray end of the outer tube. As described in paragraph 34 of the Specification, Figure 6G shows nozzle 300 including an inner rod (unnumbered) having a center piece 320 extended with respect to an end portion 322 of the outer tube (unnumbered). *See* Spec. ¶ 34, Fig. 6. This description is closely similar to the language of original claim 8. Although Figure 6G shows a notch (unnumbered) on end portion 322 of the outer tube, but not on the inner rod, original claim 8 provides an adequate written description of another embodiment of the nozzle comprising at least one notch located on the inner rod and with the inner rod extending beyond the outer tube.

For these reasons, we do not sustain the rejection of claim 1, or its dependent claims 3, 6, 8, and 9, as failing to comply with the written description requirement. The Examiner’s findings in rejecting claim 10 are the same as for claim 1. Final Act. 5. Accordingly, we also do not sustain the rejection of claim 10, or its dependent claims 11–15, as failing to comply with the written description requirement, for reasons similar to those for claim 1.³

³ We do not address the objections to the drawings under 37 C.F.R. § 1.83(a) (Final Act. 2–3), or to the Specification under 35 U.S.C. § 132(a) (*id.* at 3–4). The drawing objection pertains to new drawing figures submitted by Appellant on April 18, 2018, which show modified versions of the nozzle illustrated in Figure 6G that have a notch on the inner rod (Figure 6GB) and a notch on both the inner rod and outer tube (Figure 6GC). *Id.* at 2. The objection to the Specification pertains to the amendment filed on April 18,

Claims 16–18 and 20

As we have determined that claims 16–18 and 20 are indefinite, we cannot sustain the rejection of these claims under the written description requirement of 35 U.S.C. § 112, first paragraph, because doing so would require speculation as to their scope. *See In re Moore*, 439 F.2d 1232, 1235 (CCPA 1971) (One is not in a position to determine whether there is adequate written description support for a claim under 35 U.S.C. § 112, first paragraph, until the metes and bounds of that claim are determined under 35 U.S.C. § 112, second paragraph.). It should be understood, however, that our decision is based solely on the indefiniteness of claims 16–18 and does not reflect on the adequacy of the rejection of these claims as lacking adequate written description support.

CONCLUSION

In summary:

Claims Rejected	Basis	Affirmed	Reversed	New Ground
1–3, 6, 8–18, and 20	§ 112, first paragraph		1–3, 6, 8–18, and 20	
16–18 and 20	§ 112, second paragraph			16–18 and 20
Overall Outcome			1–3, 6, 8–18, and 20	16–18 and 20

2018, to amend the Specification to include a description of the new figures. *Id.* at 4. In the Appeal Brief, Appellant contends that the original Specification supports the subject matter recited in claims 1 and 10. Appeal Br. 12. We agree for the reasons discussed above. However, Appellant does not mention the new figures (*id.* at 10–14), leaving it unclear whether Appellant is still proposing to amend the drawings or Specification.

FINALITY AND RESPONSE

This decision contains a new ground of rejection pursuant to 37 C.F.R. § 41.50(b). 37 C.F.R. § 41.50(b) provides “[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review.”

37 C.F.R. § 41.50(b) also provides that the Appellant, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

(1) *Reopen prosecution*. Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the proceeding will be remanded to the examiner. . . .

(2) *Request rehearing*. Request that the proceeding be reheard under § 41.52 by the Board upon the same record. . . .

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).

REVERSED; 37 C.F.R. 41.50(b)