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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JOSEPH LAMBERT, DAVID DEESE, and
WILLIAM JENNINGS

Appeal 2019-001824
Application 14/930,754
Technology Center 2800

Before JOSEPH L. DIXON, ST. JOHN COURTENAY III, and
LARRY J. HUME, *Administrative Patent Judges*.

DIXON, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 6, 8, and 10–13. Claims 1–5, 7, 9, and 14–23 have been canceled. We have jurisdiction under 35 U.S.C. § 6(b). An oral hearing was conducted on May 21, 2020. A transcript of the oral hearing will be placed into the administrative record in due course.

¹ We use the word Appellant to refer to “applicant” as defined in 37 C.F.R. § 1.42(a) (2018). Appellant identifies the real party in interest as CEM Corporation. Appeal Br. 3.

WeAFFIRM.

CLAIMED SUBJECT MATTER

The claims are directed to moisture and volatiles analyzer. Claim 6, reproduced below, is illustrative of the claimed subject matter:

6. A volatile content analysis instrument comprising:
 - a cavity;
 - a microwave source positioned to produce and direct microwaves into said cavity at frequencies other than infrared frequencies;
 - a balance with at least a balance pan in the cavity;
 - an infrared temperature detector positioned to target a sample on said balance pan;
 - an infrared source covered with an infrared reflector that is positioned to produce and direct infrared radiation into said cavity concurrently with microwaves from said microwave source at frequencies other than the microwave frequencies produced by said microwave source and other than the frequencies measured by said temperature detector;
 - a lens between said infrared source and said balance pan for more efficiently directing infrared radiation from said infrared source and said infrared reflector to a sample on said balance pan;
 - a fan for transferring heat to cooling air and said lens having dimensions that preclude microwave radiation of the frequencies produced by said microwave source and directed into said cavity from leaving said cavity through said lens.

REFERENCES

The prior art relied upon by the Examiner as evidence is:

Name	Reference	Date
Moslehi	US 4,956,538	Sept. 11, 1990
Herold et al.	US 6,900,422 B2	May 31, 2005
Revesz et al.	US 7,581,876 B2	Sept. 1, 2009

REJECTIONS

Claims 6, 8 and 10–13 stand rejected under 35 U.S.C. § 112(a) as failing to comply with the written description requirement.² Final Act. 3.

Claims 6, 8 and 10–13 are rejected under 35 U.S.C. § 112(b) as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor regards as the invention.³ Final Act. 4.

Claims 6, 8 and 10–13 stand rejected under 35 U.S.C. § 103 as being unpatentable over Revesz in view of Herold and Moslehi. Final Act. 5.

OPINION

35 U.S.C. § 112(a)

The rejection has been withdrawn by the Examiner. Ans. 3. Therefore, this rejection of the claims is not before us on appeal. Moreover, the Examiner’s objection to the Specification and the amendment to the Specification is a petitionable matter and ultimately

² The Examiner has withdrawn the written description rejection and the rejection is not before us for review. Ans. 3. The Examiner also correctly indicates that the objections to amendments to the Specification are petitionable matters rather than appealable matters to the PTAB. Ans. 3. We agree with the Examiner. *Cf.* Reply Br. 3–4.

³ The Examiner withdrew the indefiniteness rejection regarding the term “cooling.” Ans. 3.

an appealable matter, not to the Patent Trial and Appeal Board (PTAB), because the matter is not an adverse decision of the Examiner under 35 U.S.C. § 6. *See* 35 U.S.C. § 6:

The Patent Trial and Appeal Board shall—
(1) on written appeal of an applicant, review adverse decisions of examiners upon applications for patents pursuant to section 134(a); (“An applicant for a patent, any of whose claims has been twice rejected, may appeal from the decision of the primary examiner to the Patent Trial and Appeal Board, having once paid the fee for such appeal.”)

Because the objection to the Specification is not based upon the claims, the ultimate appeal would NOT be to the PTAB. Therefore, Appellant’s argument to judicial economy is unavailing.

35 U.S.C. § 112(b)

With respect to claim 6, the Examiner finds that the claim term “more efficiently” is indefinite. Final Act. 4. Specifically, the Examiner finds:

The term “more efficiently” in claim 6 is a relative term which renders the claim indefinite. The term “more efficiently directing infrared radiation” is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Final Act. 4. The Examiner further finds that the term is a relative term that is not defined by the claim language, the Specification does not provide a standard for ascertaining any requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention based on the term. Advisory Act. 2.

Appellant contends that terms of degree are not inherently indefinite and that the Examiner is requiring unnecessary precision in the claim language. Appeal Br. 12–14; *see also* Reply Br 4–5. Appellant further contends that the Specification in the present case reveals that the claimed invention is an improved version of the device in the Revesz reference cited by the Examiner and the claimed invention “directs the radiation to avoid flooding the cavity.” Appeal Br. 14. Appellant further contends:

Reading Claim 6 in the light of the specification as a whole, then, one skilled in the art of loss-on-drying technology would understand that the lens is in the device to direct the infrared radiation toward the pan more efficiently than flooding the cavity. Because the written description provides context for the skilled artisan to understand the term “more efficiently” in Claim 6, there is no basis for rejecting the claims due to indefiniteness.

Id.

“[I]f a claim is amenable to two or more plausible claim constructions, the USPTO is justified in requiring the applicant to more precisely define the metes and bounds of the claimed invention by holding the claim . . . indefinite.” *Ex parte Miyazaki*, 89 USPQ2d 1207, 1211 (BPAI 2008) (precedential).

We disagree with Appellant and find although the Specification uses the same claim terminology, the Specification does not give limiting context to a range of efficiency. Moreover, looking to the prior art that is being improved, the Revesz’s reference discloses “in some circumstances by applying infrared radiation to a sample,” but does not refer to flooding the chamber and does not give limiting context. *See Revesz* 3:10–11. Additionally, the Revesz reference broadly discloses that “[t]he basic

principles of control circuits are well understood in the electrical engineering arts and will not be described in detail herein.” Revesz 5:9–11. As a result, the Revesz reference teaches that infrared radiation is been directed to the sample and there are known controls, but the Specification or the claim does not guide the skilled artisan as to understand that the lens is in the device to direct the infrared radiation toward the pan more efficiently than flooding the cavity.

Rather, it would appear that in the prior art device the “infrared reflector that is positioned to produce and direct infrared radiation into said cavity” would perform the step of directing the infrared radiation towards the pan, and the Specification provides no guidance for skilled artisans to know the scope of “more efficiently” as it relates to the lens. *See generally* Revesz 4:42–44. Consequently, we disagree with Appellant that the Specification provides context for the skilled artisan to understand the term “more efficiently,” and Appellant has not shown error in the Examiner’s finding that the claim terminology does not particularly point out and distinctly claim the claimed invention.

35 U.S.C. § 103

With respect to the obviousness rejection of claims 6, 8, and 10–13, Appellant argues the claims together. Appeal Br. 14. As a result, we select independent claim 6 as the representative claim for the group and will address Appellant’s arguments thereto. *See* 37 C.F.R. § 41.37(c)(1)(iv).

With respect to representative claim 6, Appellant generally argues that Revesz, Herold, and Moslehi alone or in combination do not render the claimed invention obvious because none of them discloses all the elements

of the application at issue, and there was no apparent reason to combine the references in the fashion claimed in the Specification. Appeal Br. 14.

Appellant contends that a skilled person would not be motivated to combine the Revesz, Herold, and Moslehi references. Appeal Br. 14; Reply Br. 5.

Appellant contends that the claimed invention is “an improved version of the device disclosed in the Revesz reference.” Appeal Br. 14. Appellant relies upon the inventor’s declaration to identify that when used properly secondary infrared radiation can provide additional energy to help release of volatile’s from small samples. Appeal Br. 15. Appellant argues the Examiner has thus pieced together prior art in two different fields of endeavor to show that the elements of the claimed invention are not new. Appeal Br. 16. Appellant also argues that this analysis fails to provide a legal basis for the rejection because the Examiner has failed to explain why one skilled in the art would combine the references and has relied in part on non-analogous prior art. Appeal Br. 16. Appellant further argues that the Examiner has offered no such motivation for the combination of the teachings of Revesz, Herold, and Moslehi. Appeal Br. 17. Appellant provides further argument regarding the bodily incorporation of each of the references into the combination rather than what is taught is suggested by the combination. Appeal Br. 17–18. Finally, Appellant contends that Moslehi represents non-analogous art. Appeal Br. 18.

“Whether a reference in the prior art is ‘analogous’ is a fact question.” *In re Clay*, 966 F.2d 656, 658 (Fed. Cir. 1992) (citing *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1568 n.9 (Fed. Cir. 1987)). “Two criteria have evolved for” answering the question: “(1) whether the art is from the same field of endeavor, regardless of the problem addressed, and

(2) if the reference is not within the field of the inventor’s endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved.” *Id.* at 658–59 (citing *In re Deminski*, 796 F.2d 436, 442 (Fed. Cir. 1986); *In re Wood*, 599 F.2d 1032, 1036 (CCPA 1979)).

Here, we find that the Examiner has provided a statement of motivation for the combination. Final Act. 6–8; Ans. 5. We find Appellant’s argument to be a general disagreement with the Examiner’s rejection, but the argument does not show error in the Examiner’s line of reasoning or rational underpinning for the combination. Additionally, the Examiner finds that Appellant’s argument is directed to a bodily incorporation of the references rather than what the combined teachings of the references would have suggested to those of ordinary skill in the art. Ans. 5.

Moreover, we agree with the Examiner that that the Moslehi reference is reasonably pertinent to the particular problem which the inventor was involved. Ans. 6 (“Moslehi's teachings are particularly relevant to the problem of using an infrared detector and an infrared heat source in the same system faced by the claimed invention”). The problem involved was measuring temperature with an infrared sensor while having infrared radiation in the cavity. We find the Revesz reference teaches and suggests heating with two different types of radiation (microwave 12 and infrared 14) and the presence of a “temperature sensor 20” and a “second temperature sensor 25 that measures characteristics other than infrared radiation to thereby measure temperature in the presence of infrared radiation from the lamp.” Revesz 6:28–48. As a result, skilled artisans would have looked to

the Moslehi reference for details of temperature sensors where microwaves and infrared radiation are present. Therefore, we agree with the Examiner that the teachings of the Moslehi reference are reasonably pertinent to the problem of temperature sensing in a heating device for proper control thereof.

The Revesz reference generally discloses the presence of openings for transmission of the microwaves and the infrared waves.

It will be understood that waveguides and other openings in the cavity 10 must be of a size and shape that, in most circumstances, precludes microwaves from escaping from the cavity 10. The relationship of the diameter and length of such waveguides . . . is well understood in the art, but the Revesz reference does not specifically disclose the details thereof. Revesz 6:27–33. We find it was readily apparent to skilled artisans that some lens or a filter was necessary to prevent the microwaves from leaving the cavity and damaging the apparatus. Therefore, we agree with the Examiner that the teachings of the Herold reference is reasonably pertinent to the problem of controlled heating in a heating device for proper control and operation thereof. Ans. 5–6. Consequently, we agree that skilled artisans would have looked to the Herold reference for details of this function.

With respect to Appellant’s declaration evidence, the declarant states that “merely adding an infrared source does not solve the problem for certain types of samples, and in some cases the infrared source can (by heating the surroundings indiscriminately) exacerbate such problems.” *See* Appeal Br. 15. Appellant further argues “the infrared source would create local heating of the cavity walls, which in turn led to convection air currents

sufficient to create (depending upon the circumstances) lift, downforce, or other effects on the balance pan, and did so to an extent that often precluded accurate and precise weight measurements.” Appeal Br. 15. We note Appellant’s arguments do not specifically correspond to the statements in the declaration, and we note that paragraphs 9 and 10 of the declaration are directed to “small samples” and “depending on the circumstances,” but the language of independent claim 6 is not so limited.⁴ Consequently, Appellant’s arguments are not persuasive of error in the Examiner’s factual findings or conclusion of obviousness of independent claim 6.

Appellant further argues the Moslehi reference solves a problem of varying transparency of an item as temperature changes but in contrast applicant seeks to collimate infrared radiation towards a volatile-containing sample. Appeal Br. 19. We find Appellant’s argument is incommensurate in scope with the express language of independent claim 6 because the claim language does not require “*collimate[d]* infrared radiation towards a *volatile*-containing sample on a *sensitive* balance and *concurrently* propagate microwave frequencies to the same sample, all while an infrared detector *focuses* on the sample so that the temperature of the sample ‘can be taken into consideration as drying proceeds.’” *Id.* citing Spec. ¶ 52 (emphases added).

Appellant’s arguments and proffered differentiation of the combination goes against the express language of independent claim 6 because the claimed invention does not 1) collimate the infrared radiation, 2) the microwaves do not propagate to the sample, but are directed into the

⁴ Declaration of Joseph L. Lambert, filed Sept. 18, 2017.

cavity, and 3) the temperature sensor does not “focus” on the sample. As a result, Appellant’s arguments are not commensurate with the express language and scope of independent claim 6.

Commercial Success

With respect to independent claim 6, Appellant argues that abundant evidence of the claimed invention’s commercial success provide strong objective indicia of obviousness. Appeal Br. 19–20. Appellant argues the secondary evidence of commercial success of the claimed invention does not require a nexus with a single element of the claimed invention. Reply Br. 6–7.

Appellant identifies four documents as secondary sources (identified in the response dated May 29, 2018 at pages 6–9) evidencing a “long time need answered by the claimed invention and market praise for it.” Appeal Br. 19–20 (note Appellant does not provide copies of all the documents, but merely provides citations, portions of documents, and attorney argument related thereto). Additionally, Appellant does not identify specifically that the SMART 6TM device corresponds to the claimed invention, and Appellant’s declaration by inventor Joseph Lambert also does not identify that the claimed invention corresponds to the SMART 6TM device.

From our review of Appellant’s arguments, we note that the “Top New Pittcon Products” in the discussion indicates an industry recognition for the new product, but does not identify any commercial success of the device.⁵ Appeal Br. 19.

⁵ “In December 2015, CEM began shipping the SMART 6 Moisture/Solids Analyzer, its sixth generation SMART Moisture Analyzer. Unlike moisture analyzers of the past, which could only analyze wet products, the SMART 6

With respect to the argument directed to SMART 6TM peer review in the SMART 6TM brochure, we note that there are multiple brochures available on the Internet at a similar Internet address. Consequently, we evaluate the mere text of the “peer reviews” that indicate consistent and repeated moisture measurements which are easy to calibrate and easy for staff to use, but the peer reviews do not indicate any commercial success rather than acceptance by the users and the precision of the measurements.

With respect to the Code of Federal Regulations (CFR) for moisture content, we note that the regulations provide no basis for commercial success or for long felt need. The CFR merely indicates required measurements having no identified relevance to the specific SMART 6TM device or claimed invention.

With respect to the “Smart 5TM versus SMART 6TM versus halogen lamp IR” data in the comparison charts, we note that Appellant correlates Smart 5TM to the Revesz reference, but the Revesz reference clearly has both microwave and infrared heating, but the Smart 5TM reference in the Smart 6TM brochure comparisons identify Smart 5TM as having only microwave heating rather than the two heating types of microwave and

is able to analyze both wet and dry products accurately and efficiently. The new product employs CEM’s iPower technology, which utilizes two frequencies of heating. At a higher frequency, the SMART 6 creates a consistent heating environment that is able to remove bound moisture or non-polar solvents. At a lower frequency, it penetrates the sample rapidly to remove free moisture beyond just the surface. The SMART 6 saves time and expands the type of samples the system can analyze to areas such as dairy powders, snack foods and non-polar chemical solvents. The system is priced at \$15,000-\$20,000. **Two hundred units have been sold** since its introduction.” Top New Pittcon Products brochure 2 (emphasis added).

infrared wave heating disclosed in the Revesz reference.⁶ Consequently, the comparison data does not evidence a long felt or commercial success of the claimed invention when compared to the Revesz reference.

Although we agree with Appellant that the Examiner's statements regarding the nexus of the lens to the commercial success are not necessarily required, some nexus to the proffered commercial success to the claimed invention is required, but we find Appellant's four proffered "items or citations" from the May 29, 2018 Response do not evidence commercial success or long felt need of the claimed invention. As a result, a nexus between the claimed invention and any commercial success or long felt need has not been shown by a preponderance of the evidence. Appeal Br. 19–21; Reply Br. 6–7.

Therefore, weighing all the evidence, we find Appellant's arguments do not show error in the Examiner's factual findings or conclusion of obviousness of representative independent claim 6.

Because Appellant has not separately argued the pendent claims 8 and 10–13, these claims fall with representative independent claim 6. 37 C.F.R. § 41.37(c)(1)(iv).

CONCLUSION

We affirm the Examiner's indefiniteness and obviousness rejections.

⁶ We evaluate the Smart 6TM brochure based upon the 2018 copyright date available on the corporate website (rather than the 2019 copyright date version) which recites both Smart 5TM and Smart 5 TurboTM, but only identifies microwave heating in the Smart 5 TurboTM or Smart 5TM.

DECISION SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
6, 8, 10–13	112(b)	Indefiniteness	6, 8, 10–13	
6, 8, 10–13	103	Revesz, Herold, Moslehi	6, 8, 10–13	
Overall Outcome			6, 8, 10–13	

TIME PERIOD FOR 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