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GEORGE R. CORRIGAN CORRIGAN LAW OFFICE 2168 COLLADAY POINT DRIVE STOUGHTON, WI 53589			DANG, KET D	
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte PAUL D. VERHAGEN, TIFFANY ANNE CARTER,
and ALAN DALE SHERRILL

Appeal 2019-001946
Application 13/770,010
Technology Center 3700

Before STEFAN STAICOVICI, WILLIAM A. CAPP, and
JEREMY M. PLENZLER, *Administrative Patent Judges*.

CAPP, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant¹ seeks our review under 35 U.S.C. § 134(a) of the final rejection of claims 1 and 5–20. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM-IN-PART.

¹ We use the word “Appellant” to refer to “Applicant” as defined in 37 C.F.R. § 1.42(a). Appellant identifies Illinois Tool Works as the real party in interest. Appeal Br. 3.

THE INVENTION

Appellant's invention relates to induction heating. Spec. ¶ 1.

Claim 8, reproduced below, is illustrative of the subject matter on appeal.

8. An induction heating head for heating a workpiece, having a first face disposed to be held near the workpiece to be heated, comprising:

a conductive coil;

a housing, in which the conductive coil is disposed; and

a plurality of spacers mounted to the housing disposed to maintain a desired separation between the first face and the workpiece, to maintain a second desired separation between the conductive coil and the workpiece, and to facilitate movement of the induction head relative to the workpiece.

THE REJECTIONS²

The Examiner relies upon the following as evidence in support of the rejections:

NAME	REFERENCE	DATE
Seulen	US 2,743,345	Apr. 24, 1956
Amagami	US 3,989,916	Nov. 2, 1976
Anderson	US 4,549,057	Oct. 22, 1985
Schmidt	US 4,978,825	Dec. 18, 1990
Peterson	US 5,025,125	June 18, 1991
Gaspard	US 5,686,006	Nov. 11, 1997
Riess	US 6,509,555 B1	Jan. 21, 2003
Barber	US 6,875,966 B1	Apr. 5, 2005

² A rejection of claim 8 under 35 U.S.C. § 112, first paragraph, and a rejection of claims 1 and 3–7 under 35 U.S.C. § 103 have been withdrawn by the Examiner. Ans. 2. We express no opinion on the patentability of claims for which the Examiner's rejection has been withdrawn.

The following rejections are before us for review:

1. Claims 5–7 are rejected under 35 U.S.C. § 112, second paragraph, as indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention.
2. Claim 20 is rejected under 35 U.S.C. § 102(b) as anticipated by Amagami.
3. Claim 8 is rejected under 35 U.S.C. § 103(a) as unpatentable over Schmidt and Seulen.
4. Claims 9 and 10 are rejected under 35 U.S.C. § 103(a) as unpatentable over Schmidt, Seulen, and Anderson.
5. Claim 11 is rejected under 35 U.S.C. § 103(a) as unpatentable over Schmidt, Seulen, Anderson, and Amagami.
6. Claim 12 is rejected under 35 U.S.C. § 103(a) as unpatentable over Schmidt, Seulen, Anderson, Amagami, and Peterson.
7. Claim 13 is rejected under 35 U.S.C. § 103(a) as unpatentable over Schmidt, Seulen, Gaspard, and Barber.
8. Claim 14 is rejected under 35 U.S.C. § 103(a) as unpatentable over Schmidt and Riess.
9. Claims 15–18 are rejected under 35 U.S.C. § 103(a) as unpatentable over Schmidt, Riess, and Anderson.
10. Claim 19 is rejected under 35 U.S.C. § 103(a) as unpatentable over Schmidt, Riess, Anderson, and Barber.

OPINION

Section 112, second paragraph Indefiniteness of Claims 5–7

Claim 5 depends from independent claim 1. Claims App. The Examiner regards claim 5 as indefinite because the relationship of “a first

face” recited on line 3 is allegedly unclear in relation to the “wear surface” of claim 1. Final Action 6.

Appellant argues that claim 5 recites a first face and that the structure of claim 5 has a wear surface that has a first face. Appeal Br. 15. Appellant further argues that, as per paragraph 39 of the Specification, an embodiment may include two wear surfaces. Reply Br. 2. According to Appellant, this establishes that a wear surface can be disposed on two different faces and thus not the same as the first face. *Id.*

The Examiner responds by stating that, according to the Specification, the “first face” is the “wear surface.” Ans. 13. Thus, According to the Examiner, the first face of claim 5 and the wear surface of claim 1 are the same, not different, and that they are both identified by reference character 114. *Id.*

The PTO can properly reject a claim as indefinite if the claim is ambiguous, vague, incoherent, opaque, or otherwise unclear. *In re Packard*, 751 F.3d 1307, 1311 (Fed. Cir. 2014). The test for definiteness under 35 U.S.C. § 112, is whether “those skilled in the art would understand what is claimed when the claim is read in light of the specification.” *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1576 (Fed. Cir. 1986) (citations omitted).

Having reviewed the competing positions of Appellant and the Examiner, we agree with Appellant that claim 5 is sufficiently definite. Claims 6 and 7 stand with claim 5. We do not sustain the Examiner’s indefiniteness rejection of claims 5–7.

*Anticipation of Claim 20
by Amagami*

The Examiner finds that Amagami discloses each limitation of claim 20. Final Action 6. In particular, the Examiner finds that Amagami has turns that are chosen to tune the head to a power source. *Id.*

Appellant argues that Amagami fails to disclose tuning an induction head to a power supply by choosing the number of turns in a coil. Appeal Br. 15.

In response, the Examiner directs our attention to the following language from Amagami:

[T]he power output of the induction heating unit of the nature above described can be readily selected by varying the number of turns of the induction heating coil per unit area of the material to be heated.

Id., Amagami, col. 8, ll. 46–50. The Examiner finds that the foregoing passage satisfies the “tuning” limitation in claim 20.

In reply, Appellant argues that the Examiner’s recited passage in Amagami merely applies to increasing power by adding turns, but does not teach matching impedance by selecting the number of turns. Reply Br. 2.

Appellant’s argument is not persuasive. A person of ordinary skill in the art would understand that there is a relationship between power transfer and impedance matching, both of which relate to the number of turns in a coil. It is not necessary for the prior art to use the term “tuning” to anticipate the claim. *See In re Gleave*, 560 F.3d 1331, 1334 (Fed. Cir. 2009) (explaining that a reference need not satisfy an *ipsissimis verbis* test). Appellant’s argument does not effectively rebut the Examiner’s position that Amagami’s teaching regarding varying the number of turns in a coil

amounts to tuning the head to a power source within the meaning of claim 20.

Appellant next argues that claim 20 requires at least two layers and at least two turns per layer and that Amagami lacks such a feature. Appeal Br. 16. In response, the Examiner points out that claim 20 only requires “one layer,” which is met by Amagami. Ans. 14. Having reviewed the recited language of claim 20, we determine that the Examiner’s position is correct.

We sustain the Examiner’s anticipation rejection of claim 20.

*Unpatentability of Claim 8
over Schmidt and Seulen*

The Examiner finds that Schmidt discloses the invention substantially as claimed except for a plurality of spacers mounted to the housing, for which the Examiner relies on Seulen. Final Action 11. The Examiner concludes that it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Schmidt to include a second separation as claimed. *Id.* According to the Examiner, a person of ordinary skill in the art would have done this to provide a protective member capable of withstanding mechanical stress. *Id.*

Appellant argues that Schmidt lacks separation between the first face of the induction head and the workpiece. Appeal Br. 19. In particular, Appellant contends that the bottom of Schmidt’s Faraday cage 35 is not a “face” as claimed. *Id.*

In response, the Examiner maintains that the bottom edge of Schmidt’s Faraday cage 35 is properly considered to be a “first face” within the meaning of claim 8. Ans. 16.

During examination of a patent application, pending claims are given their broadest reasonable construction consistent with the specification. *In re America Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004). Appellant does not offer an operational definition of “face.” *See generally* Appeal Br. We agree with the Examiner that, broadly but reasonably construed, the surface of the bottom end/edge of Schmidt’s Faraday cage 35 may be considered to be a “face” within the meaning of claim 8. Using that construction, the face is separated from the workpiece as claimed. *See* Schmidt, Figs. 3, 5.

We are not apprised of error and, therefore, sustain the Examiner’s unpatentability rejection of claim 8 over Schmidt and Seulen.

*Unpatentability of Claims 9–13
over Combinations Based on Schmidt and Seulen*

Claims 9–13 depend, directly or indirectly, from claim 8 and are not separately argued. Claims App., Appeal Br. 18–19. They fall with claim 8. *See* 37 C.F.R. § 41.37(c)(1)(iv) (failure to separately argue claims).

*Unpatentability of Claim 14
over Schmidt and Reiss*

The Examiner finds that Schmidt discloses the invention substantially as claimed except for the switched power source limitation, for which the Examiner relies on Reiss. Final Action 15–16. The Examiner concludes that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include a power converter as taught by Reiss in the device of Schmidt to achieve the claimed invention. *Id.* at 16. According to the Examiner, a person of ordinary skill in the art would have done this to emit a magnetic field at a desired power level. *Id.*

Appellant traverses the rejection of these claims based on the same impedance matching/tuning argument that we considered and found unpersuasive with respect to the anticipation rejection of claim 20 and find equally unpersuasive here. Appeal Br. 20.³ In so doing, Appellant challenges the Examiner's findings of fact in relation to the Amagami reference. Appeal Br. 20. However, Amagami is not applied art in the Section 103 rejection of claim 14, which is over Schmidt and Riess. Final Action 15.

Appellant's traverse of the rejection does not address, much less distinguish, either of the two references relied on by the Examiner, namely, Schmidt and Reiss. For all practical purposes, the Examiner's findings of fact based on Schmidt and Reiss are uncontested.

We are not apprised of error and, therefore, sustain the unpatentability rejection of claim 14.

*Unpatentability of Claims 15–18
over Schmidt, Reiss, and Anderson*

Claims 15–18 depend, directly or indirectly, from claim 14 and are not argued apart from arguments previously found unpersuasive with respect to claim 14. Claims App. Appeal Br. 19–20. We sustain the Examiner's unpatentability rejection of claims 15–18. 37 C.F.R. § 41.37(c)(1)(iv).

³ For reasons not understood, Appellant continues to include claims 4–7 in a grouping of claims including claims 4–7 and 11–20. See Reply Br. 2. The Examiner withdrew the Section 103 rejection of claims 4–7 prior to Appellant submitting a reply brief. See Ans. 2.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Aff'd	Rev'd
5-7	112	Indefiniteness		5-7
20	102	Amagami	20	
8	103	Schmidt, Seulen	8	
9, 10	103	Schmidt, Seulen, Anderson	9, 10	
11	103	Schmidt, Seulen, Anderson, Amagami	11	
12	103	Schmidt, Seulen, Anderson, Amagami, Peterson	12	
13	103	Schmidt, Seulen, Gaspard, Barber	13	
14	103	Schmidt, Riess	14	
15-18	103	Schmidt, Riess, Anderson	15-18	
19	103	Schmidt, Riess, Anderson, Barber	19	
Summary			8-20	5-7

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).

AFFIRMED-IN-PART