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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/600,299	08/31/2012	Eli Cole Warren	PA0022759U;67097-1982PUS1	2447

54549 7590 02/15/2018
CARLSON, GASKEY & OLDS/PRATT & WHITNEY
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EXAMINER

GETACHEW, JULIAN B

ART UNIT	PAPER NUMBER
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3745

NOTIFICATION DATE	DELIVERY MODE
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02/15/2018

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ELI COLE WARREN

Appeal 2017-002850
Application 13/600,299¹
Technology Center 3700

Before LINDA E. HORNER, LISA M. GUIJT, and BRENT M. DOUGAL,
Administrative Patent Judges.

HORNER, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant seeks our review under 35 U.S.C. § 134(a) of the Examiner’s decision rejecting claims 1–9 and 14–21. Final Office Action (February 25, 2016) (hereinafter “Final Act.”).² We have jurisdiction under 35 U.S.C. § 6(b).

The claimed subject matter relates to tip clearance probes for turbine engines. Gas turbine engines used in commercial aircraft include rotors and

¹ Appellant identifies United Technologies Corporation as the real party in interest. Appeal Brief 1 (July 18, 2016) (hereinafter “Appeal Br.”).

² Claims 10–13 are in condition for allowance. Advisory Action 1–2 (May 17, 2016) (hereinafter “Adv. Act.”).

stators. To achieve desired performance, an optimal clearance between the tips of the rotors and an outside diameter of a gas path must be maintained. The gas turbine performance is validated by measuring the blade tip clearance using one or more tip clearance probes.

The claims on appeal recite a sensor face located “on a first axial end” of a tip clearance probe housing. The rejections of the claims are based on finding that the prior art discloses a sensor face in the claimed location on the probe housing. The Examiner based this finding on an unreasonably broad interpretation of the claim term “axial end.” As such, we REVERSE.

CLAIMED SUBJECT MATTER

Claims 1 and 14 are the independent claims on appeal. Claim 1 is illustrative of the claimed subject matter and is reproduced below.

1. A tip clearance probe comprising:
 - a housing defining an axis;
 - a sensor component retained within said housing;
 - a sensor face on a first axial end of said housing, wherein said sensor face is angled relative to said axis; and
 - an anti-rotation feature within said housing, wherein said anti-rotation feature is operable to prevent said sensor component from rotating about said axis.

Appeal Br. 8 (Claims Appendix).

REJECTIONS³

The Final Office Action includes the following rejections:

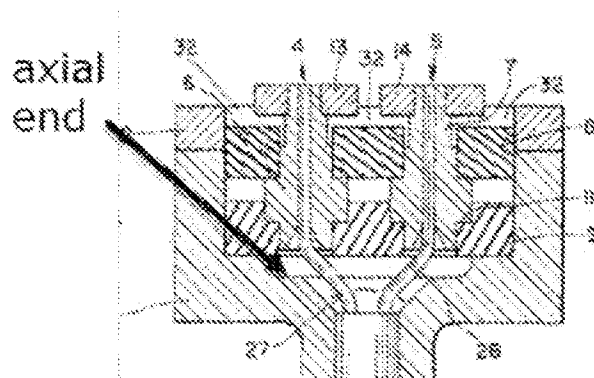
1. Claims 1–7, 9, and 14–20 stand rejected under 35 U.S.C. § 102(b) as anticipated by Libertini (US 4,329,644, issued May 11, 1982).

³ The Final Office Action also included rejections of claims 10–13 under

2. Claims 1 and 21 stand rejected under 35 U.S.C. § 102(b) as anticipated based on an alternative interpretation of Libertini.
3. Claim 8 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Libertini and Grzybowski (US 5,818,242, issued October 6, 1998).

ANALYSIS

The Examiner found that Libertini discloses a housing 2, a sensor component 4, 5 within the housing, and a sensor face on a first axial end of the housing. Final Act. 6, 12. In one interpretation of Libertini, the Examiner found that the sensor face is the angled surface defined by channel 31 in electrode pins 6, 7. *Id.* at 3–4, 6–7. The Examiner provided the following annotated drawing to accompany this finding.

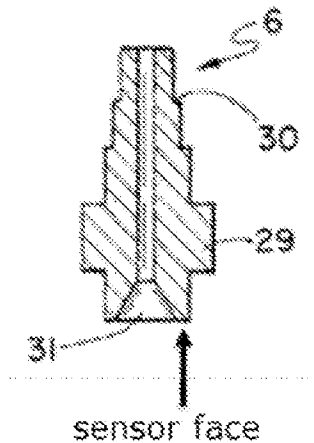


US 4,329,644

35 U.S.C. § 102(b) as anticipated by Libertini and of claim 19 under 35 U.S.C. § 112, second paragraph. Final Act. 6. The Examiner subsequently withdrew these rejections. Adv. Act. 1–2.

Id. at 4. The drawing shown above is a copy of a portion of Figure 4 of Libertini with an Examiner annotation added to identify the location of the claimed “axial end.”

In another interpretation of Libertini, the Examiner found that the sensor face is the bottom surface of electrode pins 6, 7, as viewed from Figure 5. *Id.* at 12–13.



Id. at 13. The drawing shown above is a copy of Figure 5 of Libertini with an Examiner annotation added to identify the location of the claimed “sensor face.”

In making these findings, the Examiner interpreted “axial end” to mean “any end surface of the housing along an axis.” *Ans.* 10; *see also* Final Act. 3. The Examiner explained that this interpretation is the plain meaning of the term “axial end” under a broadest reasonable interpretation in light of the Specification because “the term ‘axial end’ does not necessarily describe a particular location,” the term is not limited to the outermost ends of the housing in the claim, and “the term is not given a special definition in the [S]pecification.” Examiner’s Answer 10 (November

17, 2016) (hereinafter “Ans.”); *see also* Adv. Act. 2. Appellant argues that “the angled surface of the channel 31 is not positioned at an ‘axial end of said housing,’ as is claimed.” Appeal Br. 4; *see also id.* at 4–5; Reply Br. 1–2. We agree with Appellant.

The Examiner’s interpretation is problematic for three reasons. First, the Examiner interprets “axial end” without defining the word end, referencing the very word “end” itself in the definition. In this case, using one of the words in the claim term to define that very same word in the claim term (i.e., defining an end by use of the word “end” itself) abdicates the Examiner’s responsibility of providing a complete meaning to the claim term. Second, despite the Examiner’s statement that the term is interpreted according to its plain meaning, the meaning attributed to the word “end” by the Examiner is inconsistent with the ordinary meaning of that word. Third, the Examiner’s interpretation does not correspond to how one having ordinary skill in the art would understand the term in light of the Specification.

As to the plain meaning of “end,” ordinary definitions of this word include: (1) “the part of an area that lies at the boundary,” (2) “a point that marks the extent of something,” (3) “the point where something ceases to exist,” and (4) “the extreme or last part lengthwise : TIP.” Merriam-Webster.com, available at <https://www.merriam-webster.com/dictionary/end>, last accessed on February 6, 2018 (definitions 1(a), 1(b)(1), 1(b)(2), and 1(c)). These definitions demonstrate that an “end” of a housing is located at an extreme extent of the housing. In the case of the claim term, an “axial

end” is located at the extreme extent of the housing located along an axis defined by the housing.

This interpretation comports with the Specification’s usage of the term. The Specification uses the term “axial end” consistently to refer to a location on one of the outermost ends of the housing. For example, the Specification describes a sensor face on a first axial end of the housing (¶¶ 4, 17), a tip clearance probe cap on a second axial end of the housing (¶¶ 12, 39), and a lip feature on one axial end of the housing (¶ 34). The Specification contrasts the location of these components on the outermost, or axial ends, of the housing with other components located within the housing. For example, the Specification describes that the anti-rotation feature is disposed within the housing. Spec. ¶¶ 4, 17.

The Examiner justifies the interpretation because “the term is not given a special definition in the [S]pecification.” Ans. 10. This is not the correct inquiry.

The correct inquiry in giving a claim term its broadest reasonable interpretation in light of the specification is not whether the specification proscribes or precludes some broad reading of the claim term adopted by the examiner. And it is not simply an interpretation that is not inconsistent with the specification. It is an interpretation that corresponds with what and how the inventor describes his invention in the specification, i.e., an interpretation that is “consistent with the specification.”

In re Smith Int’l, Inc., 871 F.3d 1375, 1382–83 (Fed. Cir. 2017) (quoting *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997)). In this case, the Examiner’s interpretation is not consistent with how the inventor describes the invention in the Specification. Thus, we agree with Appellant that the

Examiner's interpretation of "axial end" to encompass a surface near the midpoint of the housing along an axis is unreasonably broad when reading that term in light of Appellant's Specification. Appeal Br. 4.

The portion of Libertini's probe identified by the Examiner in the rejection as corresponding to the claimed "sensor face" is not located at an axial end of the housing. As noted by Appellant, the identified sensor face is located within the housing about midway between the axial ends of the housing. *See* Libertini, Fig. 4; Appeal Br. 5.

For these reasons, we do not sustain the rejection of independent claims 1 and 14 as anticipated by Libertini under either of the Examiner's interpretations of that reference. Likewise, the rejections of dependent claims 2–9 and 15–21, which are based on this same interpretation of the claim language, suffer the same deficiency and are not sustained.

DECISION

The decision of the Examiner rejecting claims 1–9 and 14–21 is reversed.

REVERSED