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EXAMINER	
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte KENNY CHENG and KIN KEONG THOMAS JEK

Appeal 2019-004232
Application 14/710,870
Technology Center 3700

Before CHARLES N. GREENHUT, JILL D. HILL, and LEE L. STEPINA, *Administrative Patent Judges.*

GREENHUT, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant[1] appeals from the Examiner's decision to reject claims 1 and 24. *See* Final Act. 1. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM AND ENTER A NEW GROUND OF REJECTION.

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[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 United Technologies Corporation. Appeal Br. 1.

CLAIMED SUBJECT MATTER

Claim 1, the only claim before us, [2] is directed to a turbine platform repair method using laser cladding:

> 1 A method of restoring a gas turbine engine component, including the steps of:
>
> (a) removing a section of a turbine engine component that is located on a turbine engine platform, wherein the section corresponds to a predetermined template; and
>
> (b) depositing a laser cladding on the turbine engine component to produce a replacement section in the location of the removed section of step a); and
>
> wherein the predetermined template is a computer file, and said template is defined based upon a pattern of defects from a plurality of turbine engine components.

REFERENCES

The prior art relied upon by the Examiner is:

Name	Reference	Date
Reid	US 6,219,930 B1	Apr. 24, 2001
Hellemann	US 6,568,077 B1	May 27, 2003
Cheng	US 2005/0178750 A1	Aug. 18, 2005
Urashiro[3]	JPH1080767 A	Mar. 31, 1998

REJECTIONS

Claim 1 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Urashiro, Cheng, and Hellemann. Final Act. 3.

Claim 1 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Urashiro, Cheng, and Reid. Final Act. 6.

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[2] The Examiner indicated Appellant's amendment incorporating the language of claim 24 into claim 1 would be entered for purposes of appeal. Adv. Act. Nov. 26, 2018.

[3] We reference herein the machine translation of Urashiro entered Aug. 3, 2017.

OPINION

In both rejections, the Examiner relies on Urashiro as "implying that there must be some data stored in a computer corresponding to the predetermined shape which would serve as a template and pattern used for identifying the section in need of being removed." Final Act. 3, 6. The Examiner attempts to support this assertion by pointing to the portion of Urashiro's disclosure that indicates that the repaired blade tip portion is cut or ground into a predetermined shape. Final Act. 3, 6 (citing Urashiro paras. 8, 11). However, cutting or grinding to a predetermined shape can occur with or without a computer-based template file. The Examiner also cites Urashiro paragraphs 30 and 56 in the Examiner's Answer. Ans. 8–9. Paragraph 30 relates to the cladding, not the material removal process and paragraph 56 is a generic description of Figure 13. Although the presence of a predetermined shape used to repair the damage illustrated in Figure 13 may implicate the existence of a template of some sort, none of the portions of Urashiro cited by the Examiner imply or require the presence of a *computer file* template. Thus, we agree with Appellant that Urashiro lacks sufficient evidence to demonstrate that a template stored as a computer file is implicitly or inherently described in Urashiro. Appeal Br. 2–3.

Reid may stand for the general proposition that computer and physical template files were known and substitutable. However, the template in Reid is used to estimate repair costs for automotive body damage and is of a very different nature than what would be required in Urashiro. Appeal Br. 4. Reid's templates help calculate the density of damage in an area, and thus estimate the total extent of damage (Reid *passim*), but they do not "identify the damaged area" as found by the Examiner. Final Act. 7. We cannot see

how Reid's teachings related to the computer template would be applied to Urashiro by one skilled in the art to arrive at the claimed subject matter without the benefit of hindsight. Thus, we do not sustain the rejection that relies, in part, on Reid.

The express, implicit, and inherent disclosures of a prior art reference may be relied upon in the rejection of claims under 35 U.S.C. §§ 102 or 103. *See, e.g., In re Baxter Travenol Labs* 952 F.2d 388, 390 (Fed. Cir. 1991) (the dispositive question is "whether one skilled in the art would reasonably understand or infer" that a reference teaches or discloses all of the elements of the claimed invention); *In re Preda*, 401 F.2d 825, 826 (CCPA 1968) (stating, "in considering the disclosure of a reference, it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom"). The illustration of the various forms of damage in figures 13a–c of Urashiro, combined with the illustrated cut or ground portion 4 in Figure 2a being such that it would remedy each of those Figure 13a–c conditions fairly implies at least two things: First, that there is some sort of "template" that identifies a removed portion of the blade that is repeatedly used over several blades. Second, that "a pattern of defects from a plurality of turbine engine components" is relied on to define that template. To the extent any more concrete evidence is required to establish that such techniques were well-known in the art at the time of Appellant's invention, Hellemann furnishes such evidence on both points.

Like Urashiro, Hellemann repairs blades by repeatedly cutting a predetermined shape or portion, notch 28, from the damaged part 18 of the

blade airfoil 14. Final Act. 4, citing Hellemann (col. 4, ll. 36–53 and 60–67, col. 5, ll. 4–17, Figs. 1–3). Hellemann states:

> Machining away the damage 18 is preferably conducted automatically in a multi-axis numerically controlled milling 10 machine 30 which may be programmed for defining the original configuration of the blisk and its airfoils, and then machining any damaged airfoil to form the notch 28 at the damage site.

Col. 4, ll. 8–13. Hellemann further states:

> The size of the notch 28 is predetermined in advance and is preferably uniform or constant for all of the airfoils in a 50 corresponding row of the blisk irrespective of the extent of the damage area therein. Since machining of the notch 28 may be programmed into the milling machine 30, it may be accurately reproduced for each airfoil which requires repair.

Col. 4, ll. 48–53.

One skilled in the art would understand that computer files are the routinely used mechanism for programming a numerically controlled machine and that templates are something that establishes or serves as a pattern for reproduction (Ans. 10 (quoting Merriam-Webster, template)). Thus, although the exact language of Appellant's claim is not utilized by Hellemann, one skilled in the art would reasonably understand that the claim language requiring use of a "predetermined template [that] is a computer file" covers Hellemann's disclosed process of *programming the shape of a notch* into a *numerically controlled* milling machine, so that it may be *accurately and repeatedly reproduced*.

Hellemann also discloses:

> *Typical* foreign object damage affects primarily airfoil leading *edges*, and may also affect the airfoil trailing edge typically near the airfoil tip.

Col. 3, ll. 53–55 (emphasis added). Hellemann's mention that the damage is "typical," along with Hellemann's reference to a plurality of "leading edges" implies that "a pattern of defects from a plurality of turbine engine components" is used to define the notch 28 and its corresponding programmed template file.

For the foregoing reasons we sustain the rejection based on Urashiro, Cheng, and Hellemann. As we have made findings of fact and articulated reasoning not set forth by the Examiner, we designate our opinion in this regard as including new grounds of rejection under 37 C.F.R. § 41.50(b) so as to afford Appellant the procedural options associated therewith.

CONCLUSION

The Examiner's rejection based on Urashiro, Cheng, and Reid is reversed. The Examiner's rejection based on Urashiro, Cheng, and Hellemann is affirmed. We designate this opinion as including a new ground of rejection under 37 C.F.R. § 41.50(b).

DECISION SUMMARY

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed	New Ground
1	103(a)	Urashiro, Cheng, Hellemann	1		1
1	103(a)	Urashiro, Cheng, Reid		1	
Overall Outcome			1		1

RESPONSE

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

> When the Board enters such a non-final decision, 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 prosecution will be remanded to the examiner. The new ground of rejection is binding upon the examiner unless an amendment or new Evidence not previously of Record is made which, in the opinion of the examiner, overcomes the new ground of rejection designated in the decision. Should the examiner reject the claims, appellant may again appeal to the Board pursuant to this subpart.
>
> (2) *Request rehearing*. Request that the proceeding be reheard under § 41.52 by the Board upon the same Record. The request for rehearing must address any new ground of rejection

> and state with particularity the points believed to have been misapprehended or overlooked in entering the new ground of rejection and also state all other grounds upon which rehearing is sought.

Further guidance on responding to a new ground of rejection can be found in the Manual of Patent Examining Procedure § 1214.01.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED; 37 C.F.R. § 41.50(B)