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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte SHAYAN AHMADIAN and KEVIN W. SCHLICHTING

Appeal 2019-005879
Application 15/662,871
Technology Center 1700

Before CATHERINE Q. TIMM, BEVERLY A. FRANKLIN, and RAE LYNN P. GUEST, *Administrative Patent Judges*.

FRANKLIN, *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, 4–9, 12, and 16, 17, 18, 21, and 22.[2] We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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[1] We use the word Appellant to refer to "applicant" as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party in interest as Raytheon Technologies Corporation (see page 1 of the Supplemental paper filed on April 20, 2020).

[2] Claims 14, 15, 19, and 20 have been cancelled and therefore not included in the rejections. Ans. 3–4.

CLAIMED SUBJECT MATTER

Claim 1 is illustrative of Appellant's subject matter on appeal and is set forth below:

> 1. A plasma spray system, comprising:
> a turntable to which a workpiece is mounted;
> a temperature sensor operable to determine a temperature of the workpiece in a measurement zone;
> a heater operable to selectively heat the workpiece in a heating zone downstream of the measurement zone;
> a plasma spray subsystem operable to plasma spray a second layer of a multi-layer ceramic coating onto a first layer of a multi-layer ceramic coating onto the workpiece in an application zone downstream of the heating zone; and
> a control in communication with the plasma spray subsystem, the temperature sensor, and the heater, the control operable to control the heater to heat the workpiece in the heating zone in response to the temperature of the workpiece in the measurement zone such that the workpiece in the application zone is at a desired temperature to receive the plasma spray, the turntable operable to move the workpiece with respect to the temperature sensor, the heater, and the plasma spray subsystem such that the workpiece sequentially traverses through the measurement zone, the heating zone, then the application zone.

REFERENCES

The prior art relied upon by the Examiner is:

Name	Reference	Date
Iyer	US 4,723,589	Feb. 9, 1988
Li	US 5,518,560	May 21, 1996
Chen	US 5,576,069	Nov. 19, 1996
Gualco	US 6,051,279	Apr. 18, 2000
Heuser	US 2004/0146657 A1	July 29, 2004
Strock	US 2008/0166489 A1	July 10, 2008
Lord	GB 1,405,887	Sept. 10, 1975

REJECTIONS

1. Claims 1, 5, 12, 18, 21 and 22 are rejected under 35 U.S.C. § 103 over Strock in view of Lord and Heuser.

2. Claim 4 is rejected under 35 U.S.C. § 103 over Strock in view of Lord and Heuser as applied to claims 1, 5, 12, 18, 21 and 22, and further in view of Iyer.

3. Claim 6 is rejected under 35 U.S.C. § 103 over Strock in view of Lord and Heuser as applied to claims 1, 5, 12, 18, 21, and 22, and further in view of Chen.

4. Claims 7–9, 16 and 17 under 35 U.S.C. § 103 over Strock in view of Lord and Heuser as applied to claims 1, 5, 12, 18, 21, and 22, and further in view of Gualco.

5. Claim 21 is rejected under 35 U.S.C. § 103 over Strock in view of Lord and Heuser as applied to claims 1, 5, 12, 18, and 22, and further in view of Li.

OPINION

We review the appealed rejections for error based upon the issues identified by Appellant and in light of the arguments and evidence produced thereon. *Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential), *cited with approval in In re Jung*, 637 F.3d 1356, 1365 (Fed. Cir. 2011) ("[I]t has long been the Board's practice to require an applicant to identify the alleged error in the examiner's rejections."). After considering the evidence presented in this Appeal (including the Final Office Action, the Examiner's Answer, the Appeal Brief, and the Reply Brief), we are unpersuaded that Appellant identifies reversible error. Thus, we affirm the Examiner's

rejections essentially for the reasons provided by the Examiner in the record, with the following emphasis.

Appellant does not separately argue Rejections 2–5. Appeal Br. 17. Hence, our determination with regard to Rejection 1 is dispositive for Rejections 2–5.

Rejection 1

We select claim 1 as representative of all the claims on appeal, based upon Appellant's presented arguments. Appeal Br. 12–17. 37 C.F.R. § 41.37(c) (1) (iv) (2018).

We refer to pages 4–14 of the Final Office Action regarding the Examiner's statement of the rejection for Rejection 1.

Beginning on page 12 of the Appeal Brief, Appellant argues that there is no motivation to combine Strock in view of Lord and Heuser as proposed in the rejection. Appellant argues that Strock is directed to applying segmented ceramic coatings, and desires a low thermal gradient area 58 where vertical cracks propagate to the surface exposed to the atmosphere through layers 30, 36 and/or 38. Appeal Br. 12. Appellant argues that, in contrast, Lord is not concerned with forming a ceramic spray coating (segmented or otherwise) but to hot machining a workpiece. Appellant argues that Lord utilizes a plasma torch and control of the heating by the plasma torch for workpiece heating.

We are unpersuaded by the aforementioned line of argument. Strock and Lord are sufficiently analogous for the reasons stated by the Examiner on pages 5–7 of the Answer. Furthermore, the Examiner relies upon Lord for teaching a system whereby preheating of a workpiece is provided before

further treatment, and combines this teaching with the teachings of Strock. Final Act. 5–8. Ans. 5–6. Lord, p. 1, ll. 10–30 and figure. Appellant's arguments are not persuasive because they are based on alleged deficiencies in the teachings of the individual references, and fail to show error in the Examiner's findings and conclusions with respect to the combined teachings of the references. The test for obviousness is what the combined teachings of the references would have suggested to those of ordinary skill in the art; one cannot show non-obviousness by attacking references individually where the rejections are based on combinations of references. *In re Young*, 927 F.2d 588, 591 (Fed. Cir. 1991); *In re Merck & Co., Inc*., 800 F.2d 1091, 1097-98 (Fed. Cir. 1986); *In re Keller*, 642 F.2d 413, 425 (CCPA 1981).

With regard to the tertiary reference Heuser, Appellant argues that Heuser is directed to using multiple plasma torches with a single component on a manipulator 13, and that use of a multitude of torches in this configuration undermines the Examiner's proposed combination as the single component is manipulated within multiple plasma sprays, thus teaching away from a turntable with a multiple of workpieces. Again, Appellant's arguments are unpersuasive because they are based on alleged deficiencies in the teachings of the individual references, and fail to show error in the Examiner's findings and conclusions with respect to the combined teachings of the references. The Examiner relies upon Heuser for teaching that it is well known in the art to use a turntable for moving a workpiece. Final Act. 8–9. The Examiner also states the Strock discloses rotational movement as an option. Strock, [0048]. Final Act. 8. The Examiner also refers to Lord's figure for teaching rotational movement of a workpiece. Ans. 9. The Examiner concludes that it would have been

obvious to have used a turntable to move the workpiece in Strock since use of a turntable is a well-known form of movement of a workpiece. Final Act. 8. We agree. In the Reply Brief, Appellant additionally argues that Heuser rotates the workpiece about its own axis. Reply Br. 2. Appellant argues that this is different from rotating multiple components in a circular merry-go-round fashion. Again, Appellant's arguments are unpersuasive because they are based on alleged deficiencies in the teachings of the individual references, and fail to show error in the Examiner's findings and conclusions with respect to the combined teachings of the references. The Examiner relies upon Strock for teaching sequential movement of the workpiece and relies upon the other references for teaching circular movement and/or use of a turntable. Furthermore, claim 1 does not require rotating multiple components (as pointed out by the Examiner on page 10 of the Answer). Consequently, Appellant's arguments are unpersuasive of reversible error because they are not grounded on limitations that appear in the claims. *In re Hiniker Co*., 150 F.3d 1362, 1368–1369 (Fed. Cir. 1998); *In re Self*, 671 F.2d 1344, 1348 (CCPA 1982).

On page 15 of the Appeal Brief, Appellant argues that even if the combination were proper, the applied references do not suggest temperature control of a second layer. We are unpersuaded by this line of argument. A stated by the Examiner on page 12 of the Answer, Strock teaches that the process can involve deposition of multiple layers. Strock, Figure 2. Final Act. 5–6.

Appellant argues that Strock provides a cracked coating and therefore Appellant's temperature control objectives is not of concern in Strock. Appeal Br. 15. We are unpersuaded by this line of argument for the reasons

presented by the Examiner in the paragraph bridging pages 12–13 of the Answer.

Appellant argues that the cracked surface of Strock is a desired goal of Strock such that application of an additional layer over the Strock coating as as proposed in the rejection would necessarily ruin the objective of the Strock of having a cracked coating as the outermost coating. Appeal Br. 16. We are unpersuaded by this argument for the reasons provided by the Examiner on pages 13 of the Answer.

In view of the above, we affirm Rejections 1–5.

CONCLUSION

We affirm the Examiner's decision.

DECISION SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Reversed	Affirmed
1, 5, 12, 18, 21, 22	103	Strock, Lord, Heuser		1, 5, 12, 18, 21, 22
4	103	Strock, Lord, Heuser, Iyer		4
6	103	Strock, Lord, Heuser, Chen		6
7–9, 16, 17	103	Strock, Lord, Heuser, Gualco		7–9, 16, 17
21	103	Strock in view of Lord and Heuser, Li		21
Overall Outcome				1, 4–9, 12, 18, 21, 22

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). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED