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Lawrence Livermore National Security, LLC LAWRENCE LIVERMORE NATIONAL LABORATORY PO BOX 808, L-703 LIVERMORE, CA 94551-0808			SNELTING, ERIN LYNN	
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ERIK P. BROWN

Appeal 2019-002734
Application 14/515,301
Technology Center 1700

Before ADRIENE LEPIANE HANLON, GEORGE C. BEST, and
N. WHITNEY WILSON, *Administrative Patent Judges*.

BEST, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 13, 14, 16, and 17 of Application 14/515,301. Final Act. (September 25, 2018). We have jurisdiction under 35 U.S.C. § 6.

For the reasons set forth below, we *affirm*.

¹ We use the word "Appellant" to refer to "Applicant" as defined in 37 C.F.R. § 1.42. Appellant identifies Lawrence Livermore National Security, LLC and the United States of America as the real parties in interest. Appeal Br. 2.

I. BACKGROUND

Typical methods of manufacturing filters involve the application, disposition, or random layering of small fibers to create a filtration media mat. Spec. 1. The systems, methods, and apparatus described in the '301 Application use an additive manufacturing method such as three dimensional printing to overcome some of the problems with the traditional methods. *Id.* at 2. In particular, the use of an additive manufacturing method is said to allow modeling of the fluid filter prior to manufacturing so that fluid filter design may be optimized. *Id.*

II. REJECTIONS

On appeal, the Examiner maintains the following rejections:

1. Claims 13, 14, and 17 are rejected under 35 U.S.C. § 103 as unpatentable over the combination of Napadensky,² Sakashita,³ and Dugan.⁴ Answer 3.
2. Claim 16 is rejected under 35 U.S.C. § 103 as unpatentable over the combination of Napadensky, Sakashita, Dugan, and Erb.⁵ Answer 8.

III. DISCUSSION

In the Answer, the Examiner notes that the Answer restates the rejections with the references in a different order. Answer 3. According to

² US 2010/0191360 A1, published July 29, 2010.

³ US 2015/0273380 A1, published October 1, 2015.

⁴ US 5,540,849, issued July 30, 1996.

⁵ US 2014/0273799 A1, published September 18, 2014.

the Examiner, the references and cited teachings in support of the rejections remain the same. Thus, the Examiner contends that the restated rejections do not constitute new grounds of rejection. *Id.*

Appellant, however, argues that the Examiner's Answer contains new grounds of rejection. Reply Br. 2–3, 13–14. Appellant's Reply Brief contains new arguments against the allegedly new grounds of rejection. *See generally id.* at 4–13, 15–27.

We need not, and indeed cannot,⁶ decide whether the Examiner's Answer contains new grounds of rejection. Because the Reply Brief contains new arguments that address the alleged new grounds of rejection and Appellant has not sought remand for an opportunity to address these grounds of rejection during prosecution as opposed to on appeal, we are considering the grounds of rejection stated in the Examiner's Answer and Appellant's arguments as set forth in the Reply Brief.

A. Rejection of claims 13, 14, and 17 as unpatentable over the combination of Napadensky, Sakashita, and Dugan

The Examiner rejected claims 13, 14, and 17 as unpatentable over the combination of Napadensky, Sakashita, and Dugan. Answer 3.

Claims 13 and 17 are independent, while claim 14 depends from claim 13. Because Appellant does not differentiate between claims 13, 14, and 17 in its arguments,⁷ we select claim 13 as representative of the group of claims

⁶ Questions of whether an Examiner's Answer contains a new ground of rejection are generally resolved by way of petition. *See In re Berger*, 279 F.3d 975, 984–85 (Fed. Cir. 2002).

⁷ We note that the Reply Brief asserts that claim 14 includes the language “An additive manufacturing method of producing a fluid filter wherein the

subject to this ground of rejection. 37 C.F.R. § 41.37(c)(1)(iv). Claims 14 and 17 will stand or fall with claim 13.

Appellant argues that this rejection should be reversed for any of three reasons. Appeal Br. 11–22. We address these arguments below.

1. The applied combination of references do not teach or suggest all claim limitations

In the Reply Brief, Appellant argues that none of the references describes or suggests every limitation of claim 13. *Compare* Reply Br. 5, 7, 8–9. We reproduce claim 13 below from the Claims Appendix to the Appeal Brief and italicize the limitations that Appellant asserts are missing from the references cited in the rejection.

13. An additive manufacturing method of producing a fluid filter; comprising the steps of:

providing an additive manufacturing three dimensional model of a fluid filter in a computer readable format, said fluid filter including

a fluid filter body having a filter wall that has multiple zig zag baffles,

an entrance face for fluid entrance,

an exit face for fluid exit,

at least one pore in said multiple zig zag baffles of said fluid filter body, and

at least one pocket in said at least one pore;

fluid may contain contaminates; [sic] comprising the steps of.” See Reply Br. 5, 8. The version of claim 14 included in the Claims Appendix of the Appeal Brief does not include this language. Appeal Br. 33. Based on our review of the ’301 Application’s prosecution, it appears that claim 14 has never included the quoted language.

separating said additive manufacturing three dimensional model of the fluid filter into void spaces and solid spaces;

providing an adaptive manufacturing system with a first print head and a second print head;

providing inorganic material that will coalesce at a sintering temperature;

providing organic material that will decompose at said sintering temperature;

using said first print head of said adaptive manufacturing system to print said inorganic material that will coalesce at said sintering temperature in said solid spaces;

using said second print head of said adaptive manufacturing system to print said organic material that will decompose at said sintering temperature in said void spaces;

printing said fluid filter one layer at a time using said first print head of said adaptive manufacturing system to provide said at least one layer including said inorganic material that will coalesce at said sintering temperature in said solid spaces and using said second print head of said adaptive manufacturing system to provide said at least one layer including said organic material that will decompose at said sintering temperature in said void spaces; and

sintering said fluid filter at said sintering temperature wherein said inorganic material that will coalesce at said sintering temperature will coalesce and wherein said organic material that will decompose at said sintering temperature will decompose providing said at least one pore and said at least one pocket in said at least one pore in the fluid filter and wherein fluid containing particles flows through said at least one pore from said entrance face to said exit face and the particles in the fluid become trapped in said at least one pocket in said at least one pore.

Appeal Br. 32 (emphasis and some indentation added).

This argument is not persuasive.

We have reviewed the rejection as set forth in the Examiner's Answer. In rejecting claim 13, the Examiner found that the combination of asserted references—Napadensky, Sakashita, and Dugan—describes or suggests each limitation recited in claim 13. Answer 3–6. The Examiner supported these findings with citations to the references. *Id.*

Appellant attacks each reference individually, identifying the limitations that are allegedly neither described nor suggested in each reference. For example, the Reply Brief identifies limitations allegedly not described or suggested by Dugan. Reply Br. 8–9. The Examiner, however, found that Dugan does describe or suggest many of the use limitations. *See* Answer 5–6. Appellant's argument does not address the Examiner's findings. Reply Br. 8–9. In particular, Appellant does not address the Examiner's citation of the relevant portions of Dugan that the Examiner found describe or suggest each limitation. Nor does Appellant address the Examiner's findings that the limitations not taught by Dugan are described or suggested by either Napadensky or Sakashita.

In view of the foregoing, we do not reverse the rejection of claims 13, 14, and 17 on this basis.

2. No reasonable expectation of success in creating the combination of references

As written, Appellant's argument that a person of ordinary skill in the art at the time of the invention would not have had a reasonable expectation of success with the proposed combination is mislabeled. Appellant argues that “[t]here would be no reason to combine the secondary Sakashita ’380 reference and/or the tertiary Dugan ’849 reference with the primary Napadensky ’360 reference.” Reply Br. 10. Appellant then goes on to list things not disclosed by each of the references. For example: “the Primary

Napadensky '360 reference does not contain the phrase: 'fluid filter.' The Primary Napadensky '360 reference does not contain the word: 'filter.'" *Id.* based on this listing of things not described in each of the references, appellant concludes that "[t]here would not be a reasonable expectation of success with the proposed combination of the secondary Sakashita '380 reference and/or the tertiary Dugan '849 reference with the primary Napadensky '360 reference." *Id.* at 11.

Appellant's argument is notable for what is not included. In particular, Appellant's argument does not include any technical, scientific, or logical reason why a person of ordinary skill in the art would not have had a reasonable expectation of success in combining the applied references in the manner relied upon by the Examiner.⁸

Consequently, Appellant has not demonstrated reversible error in the Examiner's determination that a person of skill in the art would have had a reasonable expectation of success in combining the applied references to arrive at the claimed invention.

3. Insufficient reason for a person of ordinary skill in the art to combine the references

According to Appellant, the Examiner's reasons for combining the applied references are not valid. Reply Br. 11–13. In particular, Appellant argues that the Examiner's reasons failed to address specific limitations in claims 13, 14, and 17 and failed to address the fact that Napadensky does not disclose or relate to producing a fluid filter. *Id.* at 12.

⁸ Appellant actually argues that the Examiner failed to provide a sufficient reason for a person of ordinary skill in the art to combine the references. Because this is Appellant's third argument, we will address it below.

This argument is not persuasive.

In the Answer, the Examiner provides reasons for combining Napadensky with each of Sakashita and Dugan. *See Answer 4–5, 8.* We have reviewed those reasons, and Appellant has not persuasively argued that those reasons are erroneous or otherwise unsupported. Thus, we are not persuaded that the Examiner reversibly erred in finding that a person of ordinary skill in the art at the time of the invention would have had reason to combine Napadensky with Sakashita and with Dugan in the manner proposed in the rejection of claim 13.

B. Rejection of claim 16 as unpatentable over the combination of Napadensky, Sakashita, Dugan, and Erb

The Examiner rejected claim 16 as unpatentable over the combination of Napadensky, Sakashita, Dugan, and Erb. Answer 8–11.

Appellant argues that the rejection of claim 16 should be reversed for essentially the same reasons and using essentially the same logic advanced in arguing for reversal of the rejection of claims 13, 14, and 17. *See Reply Br. 15–27.*

These arguments are not persuasive. We, therefore, affirm the Examiner’s rejection of claim 16 for the reasons we have set forth above as we affirmed the rejection of claims 13, 14, and 17.

IV. CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
13, 14, 17	103	Napadensky, Sakashita, Dugan	13, 14, 17	
16	103	Napadensky, Sakashita, Dugan, Erb	16	
Overall Outcome			13, 14, 16, 17	

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

AFFIRMED