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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MARIA DALKO

Appeal 2019-000950
Application 13/499,503¹
Technology Center 1600

Before RYAN H. FLAX, DAVID COTTA, and
CYNTHIA M. HARDMAN, *Administrative Patent Judges*.

HARDMAN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134(a) involving claims related to cosmetic, dermatological, or pharmaceutical compositions comprising the compound ethyl gingerone. The Examiner rejected the claims as obvious under 35 U.S.C. § 103(a) and on the ground of nonstatutory double patenting. We heard oral argument on January 30, 2020. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

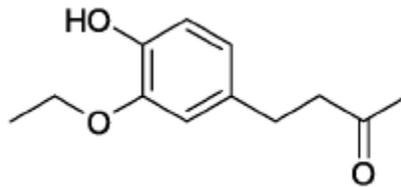
¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as L’OREAL. Appeal Br. 2.

CLAIMED SUBJECT MATTER

The claims are directed to compositions comprising a particular compound, which we refer to herein as “ethyl gingerone.” *See* Final Act. 7.

Claim 11 is the only independent claim on appeal, and is illustrative of the claimed subject matter. Claim 11 reads:

11. A cosmetic, dermatological or pharmaceutical composition comprising the compound of the following formula



wherein said compound, is present in a proportion of from 0.01% to 5% by weight relative to the weight of the composition,

and a physiologically acceptable medium comprising at least one ingredient selected from the group consisting of silicone fatty substances, nonsilicone fatty substances, glycols, ketones, thickeners, emulsifiers, surfactants, gelling agents, fragrances, fillers, dyestuffs, moisturizers, vitamins and polymers.

Appeal Br. 24 (Claims Appendix).

REFERENCES

The Examiner relied upon the following prior art references:

Name	Reference	Date
Warren	US 6,287,583 B1	Sept. 11, 2001
Scott	US 2008/0253976 A1	Oct. 16, 2008
Maruyama (English translation)	JP2003-206239	July 22, 2003
SciFinder	SciFinder database entry for “zingerone,” available at https://scifinder-n.cas.org	Sept. 9, 2015

REJECTIONS

Claims 11, 15, 16, 18, 19, and 27–29 stand rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Maruyama, as evidenced by SciFinder. Final Act. 3.

Claims 11, 15, 16, 18, 19, and 27–29 stand rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Scott and Warren, as evidenced by SciFinder. Final Act. 10.

Claims 11 and 16 stand rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1 and 5–10 of US Patent 9,161,893. Final Act. 7.

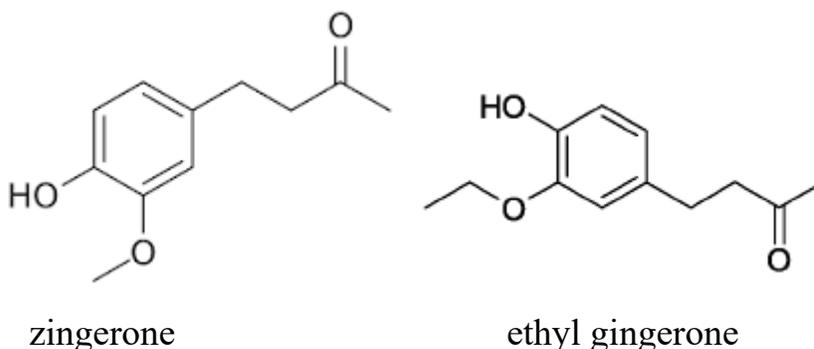
Claims 11, 16, and 18 stand rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1, 4–6, 13, and 15 of copending Application 14/007853 (now US Patent 10,117,816, issued November 6, 2019). Final Act. 8.

OPINION

Obviousness Rejection Over Maruyama and SciFinder

The Examiner found that Maruyama teaches a composition for application to the skin comprising zingerone,² which can be present in amounts ranging from 0.001–3%. Final Act. 3. The Examiner further found that Maruyama’s compositions can include a nonsilicone fatty substance, as recited in Appellant’s claim 11. Final Act. 5.

The Examiner found that ethyl gingerone and zingerone are homologs, because they differ only by a CH₂ group. Final Act. 4. For reference, the zingerone and ethyl gingerone structures are reproduced below:



The structure of zingerone is shown above on the left, and the structure of ethyl gingerone is shown above on the right. See Final Act. 3–4.

The Examiner found that, given the structural similarity between the two compounds, “one of skill in the art would expect such compounds to possess similar properties,” thus it would have been obvious “to make and use the claimed compound in place of zingerone in the composition of Maruyama with a reasonable expectation of success, absent factual evidence to the contrary.” Final Act. 4.

² Zingerone is also known as gingerone. See SciFinder, “Other Names.”

Findings of Fact

The following findings of fact highlight certain evidence of record.

FF1. Khimii³ discloses zingerone and ethyl gingerone (compound (I)). Khimii 759.

FF2. Winter⁴ discloses zingerone (compound (XVII)) and ethyl gingerone (compound (XVIII)). Winter 2112.

FF3. The chemical structures of zingerone and ethyl gingerone differ by a single CH₂ group. Final Act. 3–4.

FF4. Maruyama teaches dermatological compositions comprising zingerone that have a heat sensation. *See* Maruyama 1.

FF5. Scott’s claim 13 recites an oral care composition comprising zingerone as an antimicrobial. *See* Scott 17.

FF6. Ethyl gingerone has antimicrobial activity. Spec. 7–9 (Example 1 shows antimicrobial activity of ethyl gingerone); Dalko Decl.⁵ ¶ 5 (addressing data in Specification); Menard-Szczebara Decl.⁶ ¶ 9 (providing experimental results showing antimicrobial activity of ethyl gingerone).

³ Zhurnal Obshchey Khimii, 19(4), 759–68 (1949) (partial translation) (“Khimii”). Appellant cited Khimii as evidence that zingerone and ethyl gingerone do not necessarily possess similar properties. Appeal Br. 9.

⁴ Winter, *Odeur et constitution sur des homologues et analogues de la p-hydroxyphenyl-1-butanone-3 (cetone de framboise)*, 44 Helvetica Chimica Acta 2110–21 (1961) (partial translation) (“Winter”). Appellant cited Winter as evidence that zingerone and ethyl gingerone do not necessarily possess similar properties. Appeal Br. 9–10.

⁵ Declaration Under 37 CFR 1.132 by Maria Dalko, dated September 6, 2017 (“Dalko Declaration”).

⁶ Declaration Under 37 CFR 1.132 by Florence Menard-Szczebara, dated April 14, 2014 (“Menard-Szczebara Declaration”).

FF7. Khimii teaches that zingerone has a pungent flavor, whereas homologs of zingerone (including ethyl gingerone, compound (I)) “were entirely or almost entirely free of pungent flavor.” Khimii 761.

FF8. Winter teaches that zingerone (compound XVII) has a weak raspberry flavor, whereas ethyl gingerone (compound XVIII) does not. Winter 2112, 2115.

FF9. Winter teaches that all of its reported test compounds—including zingerone and ethyl gingerone—“have pleasant aromatic odors,” although the odor of zingerone is more intense than that of ethyl gingerone. Winter 2115.

FF10. The Chevalier Declaration⁷ shows that zingerone and ethyl gingerone are each soluble in 0.5% and 1% glycerin, but that only zingerone, and not ethyl gingerone, is soluble in 3% glycerin. Chevalier Declaration ¶¶ 6–9.

Analysis

“[S]tructural similarity between claimed and prior art subject matter, proved by combining references or otherwise, where the prior art gives reason or motivation to make the claimed compositions, creates a *prima facie* case of obviousness, and . . . the burden (and opportunity) then falls on an applicant to rebut that *prima facie* case.” *In re Dillon*, 919 F.2d 688, 692 (Fed. Cir. 1990); *see also* MPEP § 2144.09 (II) (“Compounds which are . . . homologs (compounds differing regularly by the successive addition of the same chemical group, e.g., by -CH₂- groups) are generally of sufficiently close structural similarity that there is a presumed expectation that such

⁷ Declaration Under 37 CFR § 1.132 by Veronique Chevalier, dated March 3, 2017 (“Chevalier Declaration”).

compounds possess similar properties.”). Under such circumstances, an applicant’s rebuttal can consist of

a comparison of test data showing that the claimed compositions possess unexpectedly improved properties or properties that the prior art does not have, that the prior art is so deficient that there is no motivation to make what might otherwise appear to be obvious changes, or any other argument or presentation of evidence that is pertinent.

In re Dillon, 919 F.2d at 692–93 (citations omitted).

Under the facts of this case, we conclude that the Examiner has established a prima facie case of obviousness. The record reflects that zingerone and ethyl gingerone were both known in the prior art. FF1, FF2. The compounds differ by a single methylene (CH₂) group, and thus are adjacent homologs. FF3; *In re Dillon*, 919 F.2d at 703 n.6 (defining adjacent homologs as compounds that differ by a single methylene group). Maruyama discloses dermatological compositions comprising zingerone, having the advantageous property of a heat sensation. FF4. Given the close structural similarity between zingerone and ethyl gingerone, a person of ordinary skill in the art would have been motivated to substitute zingerone with ethyl gingerone in Maruyama’s compositions, with a reasonable expectation that ethyl gingerone-containing compositions, like Maruyama’s zingerone-containing compositions, would also provide a heat sensation.

In rebuttal, Appellant argues that the record reflects “powerful” evidence of non-obviousness (Appeal Br. 18), including actual differences in the properties of zingerone and ethyl gingerone that undercut an expectation of similar properties, and unexpected antimicrobial activity. Appeal Br. 7, 9–11; Reply Br. 4. We address each argument in turn.

*Differences Between the Properties of Zingerone
and Ethyl Gingerone*

Appellant asserts that zingerone and ethyl gingerone have differences in taste and solubility in glycerin, and thus a person of ordinary skill in the art would not expect the two compounds to have similar properties. Appeal Br. 9–11. With regard to differences in taste, Khimii teaches that zingerone has a pungent flavor, whereas ethyl gingerone lacks a pungent flavor. *Id.* at 9; FF7. Winter teaches that zingerone has a weak raspberry flavor, whereas ethyl gingerone does not. Appeal Br. 9–10; FF8. Winter notes, however, that all of the tested compounds “have pleasant aromatic odors,” although the odors differ in intensity. Appeal Br. 10; FF9. With regard to solubility in glycerin, Appellant asserts that zingerone “is soluble in glycerin in all of the tested amounts,” whereas ethyl gingerone is soluble in glycerin “only until 1% by weight, but not at 3% by weight.” Appeal Br. 11; *see also* FF10; Dalko Decl. ¶¶ 19–20 (citing Heuser (EP 2,327,393) and Chevalier Decl.).

“[T]he appealed claims must be considered in light of all the evidence, and the resulting decision, that the claimed invention would or would not have been obvious, is to be made in such light.” *In re May*, 547 F.2d 1082, 1089 (CCPA 1978); *see also In re Papesch*, 315 F.2d 381, 391 (CCPA 1963) (“An assumed similarity based on a comparison of formulae must give way to evidence that the assumption is erroneous.”). Actual differences in the properties of the compounds must be considered, but “a single variance in the properties of new chemical compounds will [not] necessarily tip the balance in favor of patentability where otherwise closely related chemical compounds are involved.” *In re De Montmollin*, 344 F.2d 976, 978 (CCPA

1965) (where claimed compound and structurally-similar prior art compound shared ability to dye wool, the additional ability of the claimed compound to dye cotton was insufficient to render the subject matter unobvious); *see also In re Crounse*, 363 F.2d 881, 884 (CCPA 1966) (where claimed compound and prior art isomer both acted as dyestuffs, court held that difference in dye shade was insufficient to rebut prima facie case based on structural similarity). Similarities in the properties of the compounds must also be considered, because “[t]he similarity of properties of a reference compound as compared with a claimed compound gives rise to an even stronger inference of obviousness than that of structural similarity alone” *In re Mehta*, 347 F.2d 859, 864 (CCPA 1965).

With such standards of law in mind, we analyze the similarities and differences of record between zingerone and ethyl gingerone. As discussed above, the compounds share pleasant aromatic odors, antimicrobial activity, and solubility in 0.5% and 1% glycerin. FF9, FF5, FF6, FF10. The compounds diverge with respect to a pungent and raspberry flavor, and with respect to solubility in at least 3% glycerin. FF7, FF10.

The Examiner acknowledged the differences in flavor and solubility, but found the compounds to demonstrate an expected, gradual variance in properties between members of a homologous series:

With respect to homologous compounds, which is what the rejection is relied up [sic], the compounds are not expected to have identical properties, members of a homologous series are expected to gradually vary in properties. Furthermore, Applicants are showing slight differences in taste profile (different taste, same odor), solubility in glycerin (both soluble up to 1%, but only one soluble up to 3%), however, there is no evidence that shows how these differences relate to the claimed

properties of preservation or how they would affect the composition of the prior art and render them unsuitable for use.

Final Act. 14. We adopt the Examiner's findings. *See, e.g., In re Norris*, 179 F.2d 970, 972 (CCPA 1950) (noting that "chemists understand that members of a homologous series of chemical compounds possess the same principal characteristics which vary gradually from member to member"); *In re Merck & Co.*, 800 F.2d 1091 (Fed. Cir. 1986) (affirming obviousness despite fact that one isomer "helped some patients" while the other did not, noting that "a difference in structure, although slight, would have been expected to produce some difference in activity").

Appellant has not provided persuasive evidence calling into question the Examiner's finding that the flavor and solubility differences between the two compounds are mere gradual variations. Appellant also has not provided persuasive evidence that ethyl gingerone's additional methylene group actually alters the heat sensation property taught in Maruyama. Further, the additional methylene group did not destroy the shared pleasant aromatic odors, antimicrobial properties, or solubility in 0.5% and 1% glycerin. FF9, FF5, FF6, FF10. Accordingly, in view of the similarities and differences of record, we determine that Appellant has not rebutted that it would have been obvious to substitute zingerone with ethyl gingerone in Maruyama's compositions, with a reasonable expectation that the claimed composition (comprising ethyl gingerone) would have similar properties as the zingerone-containing compositions taught in Maruyama.

Unexpected Results

Appellant asserts that ethyl gingerone "unexpectedly has a high activity against a wide variety of microbial strains." Appeal Br. 7. As support, Appellant cites experimental results reported in the Specification,

the Dalko Declaration, and the Menard-Szczebara Declaration. Appeal Br. 7–8; Reply Br. 3. The Specification shows the efficacy of ethyl gingerone against several strains of microorganism. Spec. 9. The Dalko Declaration states that ethyl gingerone

exhibits a broad antimicrobial spectrum, which, as pointed out in the specification, is at least as broad, or even broader, than that of the already existing compounds, and which does not have the drawbacks of the prior art, in particular which has specific physicochemical properties making it possible to protect cosmetic formulas against microbial contamination while at the same time being well tolerated.

Dalko Decl. ¶ 5. The Menard-Szczebara Declaration compares the antimicrobial efficacy of ethyl gingerone against two prior art compounds, neither of which is zingerone. Menard-Szczebara Decl. ¶¶ 4–5, 9.

We are not persuaded that Appellant has demonstrated unexpected results. Scott teaches that zingerone is an antimicrobial. *See* Scott 17 (claim 13 recites an oral care composition comprising zingerone as an antimicrobial). Accordingly, given the close structural similarity between the two compounds, a person of ordinary skill in the art would have expected ethyl gingerone similarly to have antimicrobial properties. *See In re Gershon*, 372 F.2d 535, 538 (CCPA 1967) (“Expected beneficial results are evidence of obviousness of a claimed invention, just as unexpected results are evidence of unobviousness thereof.”). Thus, the fact that ethyl gingerone has antimicrobial activity would not have been unexpected.

Moreover, unexpected results “must be shown to be unexpected compared with the closest prior art.” *In re Baxter Travenol Labs.*, 952 F.2d 388, 392 (Fed. Cir. 1991). Neither the Dalko Declaration nor the Specification compare the antimicrobial activity of ethyl gingerone to that of

zingerone (or any other compound). Dalko Decl. ¶ 5; Spec. 8–9. The Menard-Szczebara Declaration does provide comparative data, but not in comparison to zingerone, which is the closest prior art of record. *See* Menard-Szczebara Decl. ¶¶ 4–5, 9–10. Although Appellant may show improved results over prior art that is even closer to the claimed subject matter than the prior art cited by the Examiner, *see Ex parte Humber*, 217 USPQ 265 (BPAI 1981); MPEP § 716.02(e), on this record, Appellant has not established that ethyl gingerone is closer to the tested compounds than it is to zingerone.⁸ Accordingly, on this record, we determine that Appellant has not carried its burden of showing unexpected results.

Remaining Arguments

Appellant additionally argues that in the claimed compositions, ethyl gingerone acts as a preserving agent, whereas Maruyama does not disclose that any component of the disclosed compositions acts as a preserving agent. Appeal Br. 6. We are not persuaded by this argument. Appellant’s claims are not limited to compositions where the ethyl gingerone is used as a preserving agent. The prior art renders obvious the structural limitations recited by the appealed claims, and thus the claimed composition and those of the prior art are expected to have the same properties, absent evidence to the contrary. Final Act. 17; *cf. In re Dillon*, 919 F.2d at 693 (“[T]he statement that a *prima facie* obviousness rejection is not supported if no reference shows or suggests the newly-discovered properties and results of a

⁸ Indeed, whereas ethyl gingerone and zingerone differ by only a single CH₂ group, ethyl gingerone and the tested compounds differ by more than a single CH₂ group. *See* Menard-Szczebara Decl. ¶ 5 (providing structures of tested compounds). Accordingly, the tested compounds do not appear to be closer prior art than zingerone.

claimed structure is not the law.”). Indeed, the record shows that both zingerone and ethyl gingerone have antimicrobial activity. FF5; FF6.

Moreover, to render an invention obvious, the prior art need not address the same problem addressed by a patent applicant. *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 419 (2007) (“In determining whether the subject matter of a patent claim is obvious, neither the particular motivation nor the avowed purpose of the patentee controls. What matters is the objective reach of the claim. If the claim extends to what is obvious, it is invalid under § 103.”). Here, Maruyama discloses that its zingerone-containing compositions provide a heat sensation. Maruyama 1. The reasonable expectation of obtaining a compound that provides a similar heat sensation by substituting zingerone with the ethyl gingerone homolog is sufficient motivation to render the claims obvious, regardless of whether a skilled artisan would have been motivated to make the substitution based on an expectation that ethyl gingerone would act as a preserving agent.

Appellant additionally argues that Maruyama is non-analogous art, because skilled artisans concerned with preserving agents would not have looked to Maruyama, which is not concerned with preserving agents. Appeal Br. 8, 11–12; Dalko Decl. ¶ 12. We are not persuaded. Both the appealed claims and Maruyama are directed to compositions for topical application to the skin and hair. Ans. 12. Accordingly, Maruyama is analogous art because it is within the inventor’s field of endeavor. *See In re Dillon*, 919 F.2d at 694 (explaining that analogous art includes art in the same field as the inventor’s endeavor). Moreover, as discussed above, the prior art need not address the same problem addressed by a patent applicant.

Appellant further argues that based on Maruyama’s specificity in naming zingerone compared to the other components of the composition (i.e., the fatty acid ester and terpenoid components, which are disclosed as genera), a skilled artisan would not have “deviate[d] from using zingerone and reasonably expect[ed] similar heat sensation results.” Appeal Br. 7; Dalko Decl. ¶¶ 9–11. We are not persuaded. The Examiner based the rejection on the close structural similarities between zingerone and ethyl gingerone—a relationship that would have led skilled artisans to expect similar properties. *See, e.g.*, Final Act. 4; *In re Dillon*, 919 F.2d at 692 (“[S]tructural similarity between claimed and prior art subject matter . . . , where the prior art gives reason or motivation to make the claimed compositions, creates a *prima facie* case of obviousness.”). The fact that Maruyama purportedly focuses on zingerone, while disclosing numerous options for the other two components of the composition, does not undercut the expectation of similar properties based on close structural similarities between zingerone and ethyl gingerone. We also note that Maruyama discloses other sense-of-heat components beyond zingerone, and thus is not as narrowly focused on zingerone as Appellant suggests. *See* Maruyama ¶ 42.

Any remaining points of Appellant not specifically addressed above have been addressed by the Examiner in the Answer, and we adopt the Examiner’s responses as our own.

For the above reasons, we affirm the Examiner’s obviousness rejection over Maruyama and SciFinder.

Obviousness Rejection Over Scott, Warren, and SciFinder

The Examiner found that Scott teaches personal care compositions comprising an antimicrobial blend of essential oils, which can comprise zingerone as an additional antimicrobial active. Final Act. 10. The Examiner additionally found that given the structural similarity between zingerone and ethyl gingerone, “one of skill in the art would expect such compounds to possess similar properties,” thus it would have been obvious “to make and use the claimed compound in place of zingerone in the composition of Scott with a reasonable expectation of success, absent factual evidence to the contrary.” Final Act. 11.

The Examiner further found that Warren discloses a personal care composition that can comprise 0.001–5% of an antimicrobial agent, and that a person of skill in the art would have recognized that ethyl gingerone could be used in Scott’s compositions in the same amounts. Final Act. 12–13.

We adopt the Examiner’s findings of fact, and agree that the claimed compositions would have been obvious in view of the prior art combination for the reasons articulated by the Examiner.

Appellant repeats that zingerone and the claimed compounds “possess different properties and therefore conventional wisdom in the art would not lead a person of ordinary skill in the art to replace zingerone with the compound employed according to the present invention.” Appeal Br. 15. For all of the same reasons discussed above, we are not persuaded by this argument.

Appellant additionally argues that Scott discloses a litany of antimicrobial agents, and “there is no incentive or motivation to lead persons of ordinary skill in the art to forego all of the potential optional antimicrobial

agents mentioned [in Scott] and instead employ the claimed compound which is not disclosed or suggested in the art as being an antimicrobial agent.” Appeal Br. 14. Appellant further argues that Warren, like Scott, also discloses numerous and diverse possible antimicrobial agents, but fails to suggest the claimed compound, or even zingerone. Appeal Br. 15.

We are not persuaded by these arguments. We agree with the Examiner that Scott lists zingerone “among a finite number of alternatives as being a suitable antimicrobial agent for use, thus it [is] clearly within the scope of Scott to formulate embodiments wherein the additional antimicrobial agent . . . is specifically zingerone.” Ans. 13; *see also In re Mercier*, 515 F.2d 1161, 1165 (CCPA 1975) (“[A]ll of the relevant teachings of the cited references must be considered in determining what they fairly teach to one having ordinary skill in the art.”). Indeed, Scott’s claim 13 specifically teaches an embodiment comprising zingerone as an antimicrobial. Scott 17.

Appellant also argues a lack of motivation to select zingerone as the lead compound, then “discard zingerone and instead use the compound according to the present invention.” Appeal Br. 14. We are not persuaded. As the Examiner stated, “[w]hile Scott fails to teach the claimed compound, as described [in] the above rejection, the claimed compound and zingerone are homologs and are expected to have similar properties, therefore, absent evidence to the contrary, its prima facie obvious to make and use the claimed compound in the composition of Scott, instead of zingerone, with a reasonable expectation of success.” Ans. 13.

Any remaining arguments of Appellant have been addressed by the Examiner in the Answer, and we adopt the Examiner's responses as our own.

For the above reasons, we affirm the Examiner's obviousness rejection over Scott, Warren, and SciFinder.

Nonstatutory Double Patenting

Claims 11 and 16 were rejected on the ground of non-statutory obviousness-type double patenting over claims 1 and 5–10 of US Patent 9,161,893 B2. Final Act. 7.

Claims 11, 16, and 18 were provisionally rejected on the ground of non-statutory obviousness-type double patenting over claims 1, 4–6, 13, and 15 of copending Application 14/007853. Final Act. 8. Copending Application 14/007853 issued as US Patent 10,117,816 B2 on November 6, 2019. Thus, this rejection is no longer provisional.

At the oral hearing in this appeal, Appellant's counsel suggested that these double patenting rejections are moot, based on Appellant's recent filing of a terminal disclaimer, which has been accepted by the Office. Hr'g Tr. 2:7–21. We are not persuaded by this argument. We lack jurisdiction to determine whether Appellant's terminal disclaimer is sufficient to moot the Examiner's double patenting rejections, because on this record, there is no adverse decision of the Examiner directed to that question. *See* 35 U.S.C. § 6(b) ("The Patent Trial and Appeal Board shall — (1) on written appeal of an applicant, review adverse decisions of examiners upon applications for patents pursuant to section 134(a).").

Appellant additionally argues that the rejection over US 9,161,893 B2 is untenable because the claims of the reference patent are directed to methods of use, whereas the appealed claims are directed to compositions. Appeal Br. 20. Appellant states that earlier in the prosecution, the Examiner issued a restriction requirement between methods of use and compositions. *Id.*

To the extent Appellant is suggesting that the safe harbor of 35 U.S.C. § 121 applies to preclude use of US 9,161,893 B2 as a double patenting reference against the present application, we are not persuaded. The safe harbor applies to certain divisional applications filed as a result of a restriction requirement. *See* 35 U.S.C. § 121 (“A patent issuing on an application with respect to which a requirement for restriction under this section has been made, . . . shall not be used as a reference . . . against a divisional application . . . if the divisional application is filed before the issuance of the patent on the other application.”). The present application is not related to US 9,161,893 B2 as a divisional application. Thus, the safe harbor protection of 35 U.S.C. § 121 does not apply.

As to the rejection over US Application 14/007,853 (now US Patent 10,117,816 B2), Appellant argues that the rejection is not tenable under MPEP § 804.I.B.1 because the present application has a filing date prior to that of the reference application. Appeal Br. 20.

We are not persuaded by this argument. The cited section of the MPEP applies to *provisional* double patenting rejections. *See* MPEP § 804.I.B.1.b. (9th ed. Rev. 08.2017 Jan. 2018) (“If a *provisional* nonstatutory double patenting rejection is the only rejection remaining in an application having the earliest effective U.S. filing date . . . compared to the

reference application(s), the examiner should withdraw the rejection in the application having the earliest effective U.S. filing date”) (emphasis added). As noted above, US Application 14/007853 issued as US Patent 10,117,816 B2 on November 6, 2019. Thus, this rejection is no longer provisional, and the cited MPEP section does not apply.

**FOR THE ABOVE REASONS, WE AFFIRM THE NONSTATUTORY
 DOUBLE PATENTING REJECTIONS. CONCLUSION**

We affirm the rejection of claims 11, 15, 16, 18, 19, and 27–29 under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Maruyama, as evidenced by SciFinder.

We affirm the rejection of claims 11, 15, 16, 18, 19, and 27–29 under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Scott and Warren, as evidenced by SciFinder.

We affirm the nonstatutory double patenting rejections.

DECISION SUMMARY

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
11, 15, 16, 18, 19, 27–29	103	Maruyama, SciFinder	11, 15, 16, 18, 19, 27–29	
11, 15, 16, 18, 19, 27–29	103	Scott, Warren, SciFinder	11, 15, 16, 18, 19, 27–29	
11, 16		Nonstatutory Double Patenting	11, 16	
11, 16, 18		Nonstatutory Double Patenting	11, 16, 18	

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
Overall Outcome:			11, 15, 16, 18, 19, 27–29	

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