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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex Parte JUSTINE CAROLE, JOERN KRUEGER, GUENTER WAHL,
and THOMAS KRAMER

Appeal 2019-003922
Application 14/808,682
Technology Center 1700

Before GRACE KARAFFA OBERMANN, MONTÉ T. SQUIRE, and
AVELYN M. ROSS, *Administrative Patent Judges*.

ROSS, *Administrative Patent Judge*.

DECISION ON APPEAL¹

Appellant² appeals under 35 U.S.C. § 134(a) from a final rejection of claims 1–19. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ In our Decision we refer to the Specification filed July 24, 2015, as amended, (“Spec.”), the Final Office Action appealed from dated May 30, 2018 (“Final”), the Appeal Brief filed October 29, 2018 (“Appeal Br.”), the Examiner’s Answer dated March 13, 2019 (“Ans.”), and the Reply Brief filed April 24, 2019 (“Reply”).

² 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 Continental Reifen Deutschland GmbH. Appeal Br. 2.

STATEMENT OF THE CASE

The subject matter on appeal relates to “a rubberized reinforcement ply for articles made of an elastomeric material, preferably for vehicle tires, wherein the reinforcement ply comprises a multiplicity of mutually spaced-apart strength members in a parallel arrangement, wherein every strength member includes at least one twisted viscose multifilament yarn.” Spec. 1; *see also* Appeal Br. 4 (“The claimed subject matter is directed at an elastic material comprising rubberized twisted viscous multifilament yarns . . .”). According to the Specification, the problem solved by the instant disclosure is to provide “a reinforcement ply . . . [that] has been made and treated in an environmentally friendly manner” where the physical properties of the reinforcement ply are “in an optimum range for application in the industrial rubber product or pneumatic vehicle tire.” Spec. 5. Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A rubberized reinforcement ply for articles made of an elastomeric material, the reinforcement ply comprising:
 - a multiplicity of mutually spaced-apart strength members in a parallel arrangement,
 - wherein every strength member includes at least one twisted viscose multifilament yarn,
 - wherein the at least one twisted viscose multifilament yarn is conditioned in a DIN EN ISO 139–1:2005 standard atmosphere,
 - wherein the at least one twisted viscose multifilament yarn has a crystallinity in the range from 15% to 40%, and
 - wherein the at least one twisted viscose multifilament yarn has a yarn linear density in the range of ≥ 150 dtex to < 1100 dtex and a tenacity in the range of ≥ 45 cN/tex to ≤ 55 cN/tex.

Appeal Br. 34 (Claims App.).

REJECTIONS

The Examiner maintains the following rejections:

- A. Claims 1–7 and 12–19 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Zimmerer³ in view of Kwon⁴, and optionally Meraldi.⁵ Final Act. 3.
- B. Claims 1–4, 6, 7, and 12–19 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Zimmerer in view of Kim⁶, and optionally Meraldi. *Id.* at 5.
- C. Claims 8–10 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Zimmerer in view of Kwon, and optionally Meraldi or Zimmerer in view of Kim and optionally Meraldi, and further in view of Boiocchi.⁷ *Id.* at 7.
- D. Claim 11 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Zimmerer in view of Kwon, Boiocchi and optionally Meraldi, or Zimmerer in view of Kim, Boiocchi and optionally Meraldi and further in view of Almonacil.⁸

Appellant seeks our review of Rejections A–D. Appeal Br. 10–11.

Appellant presents separate argument for Rejections A and B and claims 1

³ Zimmerer, et al., US 2013/0171450 A1, published July 4, 2013 (“Zimmerer”).

⁴ Kwon et al., US 2010/0174060 A1, published July 8, 2010 (“Kwon”).

⁵ Meraldi et al., US 6,261,689 B1, issued July 17, 2001 (“Meraldi”).

⁶ Kim et al., US 6,361,862 B1, issued March 26, 2002 (“Kim”).

⁷ Boiocchi et al., US 6,257,291 B1, issued July 10, 2001 (“Boiocchi”).

⁸ Almonacil et al., US 2006/0237113 A1, published October 26, 2006 (“Almonacil”).

and 18. *See generally id.* Therefore, consistent with the provisions of 37 C.F.R. § 41.37(c)(1)(iv) (2013), we limit our discussion to Rejections A and B as well as claims 1 and 18; all other claims stand or fall together with claims 1 and 18.

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 and each of Appellant’s arguments, we are not persuaded that Appellant identifies reversible error in the Examiner’s rejections. Thus, we affirm the Examiner’s rejections, based on the Examiner’s fact-finding and for the reasons expressed in the Final Office Action and the Answer. We add the following primarily for emphasis.

Rejection A – Obviousness (claims 1–7 and 12–19)

The Examiner rejects claims 1–7 and 12–19 as obvious over the combination of Zimmerer in view of Kwon and optionally Meraldi. Final Act. 3.

1. Claim 1

The Examiner finds that Zimmerer teaches “a carcass fabric for car tires . . . , [that includes] using a multifilament twisted yarn comprising cellulosic cords, for example viscose, where the yarn has an overall linear density of 30 to 20000 dtex and a tenacity of preferably higher than 35

cN/tex.” *Id.* at 3. The Examiner finds that “[i]t is extremely well-known and conventional to create such a fabric by mutually spacing apart the cords in a parallel arrangement and rubberizing them.” *Id.* The Examiner further finds that Kwon similarly teaches a cellulose fiber cord for a tire that has a crystallinity of 32% or more. *Id.* According to the Examiner, the crystallinity taught by Kwon was a known crystallinity value and therefore would have been obvious at the time of the invention, and there has been no showing of criticality in the claimed range. *Id.* And, the Examiner finds that Meraldi describes “preconditioning cellulose yarns for use in a tire by storing the yarns for at least 24 hours in a standard atmosphere according to European Standard DIN EN 20139.” *Id.* The Examiner reasons that one skilled in the art would have reason to precondition the yarn “in order to stabilize the degree of moisture of the yarn at a natural equilibrium level of less than 15% by weight of dry fiber.” *Id.* at 3–4.

Appellant argues that claim 1 requires a viscose multifilament yarn and that “Zimmerer et al. says nothing more about the disclosed yarn other than that it is simply some kind of cellulose.” Appeal Br. 13–14. Appellant explains that Kwon “may disclose various crystallinity ranges and other physical parameters of yarns, [but] these are only with respect to lyocell fibers, not viscose fibers.” *Id.* at 15. Thus, Appellant asserts that Zimmerer “fails to disclose or suggest use of *only viscose* as the type of fiber to be included in the strength members of the claimed reinforcement ply” and Kwon, relating only to lyocell fibers, “has no bearing on the disclosure of Zimmerer.” *Id.* (emphasis added); *see also* Reply Br. 4 (“Appellant’s independent claim 1, . . . requires that ‘every strength member *consist* of twisted viscose multifilament yarn.’” (emphasis added)). Appellant

contends that, because no reference “disclose[s] or suggest[s] a viscose multifilament yarn possessing the claimed properties,” no prima facie case of obviousness has been shown. *Id.* at 17. Appellant further contends that the Examiner’s findings regarding lack of criticality improperly shift the burden to Appellant so establish nonobviousness. *Id.* Appellant also contends that the data provided in Tables 1, 2, 3, and 4 detail the surprising results achieved through the instant disclosure. *Id.* at 18.

In the Answer, the Examiner finds that “[t]here is no requirement . . . that Zimmerer disclose that only viscose can be used as the type of fiber in the strength members of the claimed reinforcement ply.” Ans. 3. Furthermore, the Examiner explains that because “lyocell and viscose fibers are cellulosic fibers, i.e., the fibers are different species of the same genus,” one skilled in the art at the time of invention “would look to crystallinity teachings of a related fiber[s] in the absence of teachings of that specific fiber, and would be motivated to use the same or similar crystallinity values.” *Id.* The Examiner also explains that Appellant’s evidence of unexpected results is not commensurate in scope with the instant claims and therefore fails to distinguish the claims from the prior art. *Id.* at 4.

On this record, we find a preponderance of the evidence and sound technical reasoning support the Examiner’s findings and conclusions, and that Appellant has not shown reversible error in the Examiner’s rejection. Claim 1 requires, inter alia, a multiplicity of strength members where “every strength member includes at least one twisted viscose multifilament yarn.” Appeal Br. 34 (Claims App.). The Specification explains that the strength members may include more than one yarn. Spec. 9 (“It is advantageous

when the strength member is a textile cord consisting of at least two mutually folded viscose filament yarns.”); *see also id.* at 15 (same).

Therefore, consistent with the Examiner’s findings (*see e.g.*, Ans. 3), the strength member need not be formed exclusively of viscose yarn. As the Examiner finds (Final Act. 3), Zimmerer describes a multifilament twisted yarn comprising cellulosic cords that may include viscose, acetates, and lyocell. Zimmerer ¶¶ 2, 6, 14. Zimmerer further states that the yarn “in twisted or untwisted state, . . . can be processed, for example, together with viscose filament yarn, nylon 6 and/or nylon 66 to form a cord,” thereby meeting the “at least one twisted viscose multifilament yarn” as claimed. Zimmerer ¶ 18. And, while Kwon does not show a *viscose* yarn having the claimed crystallinity, Kwon does stress the importance of excellent crystalline properties and that a degree of crystallinity of 32% or more achieves desirable results. Kwon ¶¶ 10, 14–19. Appellant does not dispute the Examiner’s finding (Ans. 3) that the skilled artisan at the time would have reason to use the same or similar crystallinity values and would “would look to crystallinity teachings of a related fiber[s] in the absence of teachings of that specific fiber.” *See generally* Reply Br. Therefore, we adopt the Examiner’s findings as fact. *Cf. In re Kunzmann*, 326 F.2d 424, 425 n.3 (CCPA 1964) (a finding not shown by the Appellant to be erroneous may be accepted as fact).

Lastly, Appellant’s alleged evidence of unexpected results, as the Examiner finds (Ans. 4), is not commensurate in scope with the claims because the only crystallinity percentages disclosed are isolated to a small range of 26.5% and 26.1% and do not extend more broadly across the scope of claim 1, i.e., a 15–40% crystallinity. *See* Spec. 12 (Table 1, examples 3

and 6). Appellant incorrectly asserts that “claim 1 does not recite endpoints of 15% and 42% [sic] for crystallinity [but rather,] [c]laim 1 recites endpoints of 24% and 30% for crystallinity.” Reply Br. 5; *but see* Appeal Br. 34 (reciting “a crystallinity in the range from 15% to 40%).

Accordingly, Appellant’s arguments do not identify error in the Examiner’s rejection and we sustain the Rejection of claim 1 and its dependent claims.

2. Claim 18

Claim 18 is a product by process claim to prepare the reinforcement ply of claim 1 that includes the following steps:

- providing coniferous or deciduous pulps;
- admixing viscose with an amine ethoxylate modifier in a concentration ranging of from 0.01 to 1.0 wt% based on viscose;
- spinning the admixed viscose in a spinneret die to create spin viscose thread, wherein the die has a hole diameter <100 μm , wherein the speed of spinning speed at a first takeup roll is less than 50 m/min;
- transporting the spun viscose thread from the spinneret die into a coagulation bath via a coagulation bath current in a direction of fiber takeoff, wherein the coagulation bath comprises sulfuric acid in an amount of greater than 15 g/liter, and wherein the coagulation bath temperature is more than 30° C and less than 100° C;
- adding sodium sulfate and zinc sulfate to the coagulation bath in a concentration of 25 to 250 g/liter coagulation bath;
- transporting the yarn from the coagulation bath to the fixing bath, wherein the fixing bath comprises sulfuric acid in a concentration ranging of from 20 to 120 g/liter fixing bath;
- stretching the spun yarn to more than 175%; and
- conditioning the yarn in a DIN EN ISO 139-1:2005 standard atmosphere that has a temperature of 20° C and relative humidity of 65%,
wherein the yarn is prepared in a two-step process, and

wherein the yarn is spun and wound up in a first step and the wound-up yarn is unwound and washed in a second step. Appeal Br. 37–38 (Claims App.). The Examiner finds “that the construction of Zimmerer (combined) set out above is the same product as that of applicant, and it is the product of a product-by-process claim that is examined.” Final Act. 7. The Examiner stresses that “merely adding process limitations does not render the claim patentable.” Ans. 4.

Appellant asserts that no reference details the process of making a multifilament yarn that is claimed in claim 18. Appeal Br. 19. Appellant argues that it is due to the “differences in the process the claimed possesses unique chemical and physical properties.” *Id.* Appellant contends that “the Examiner misses the point, in that . . . the process steps recited in claim 18 are the steps that give the product its non-obvious properties, i.e., the properties of a reinforcement member consisting of only viscose multifilament yarn.” Reply Br. 6.

We do not find Appellant’s arguments persuasive of reversible error in the Examiner’s rejection. As a general rule, “the patentability of a product does not depend on its method of production. [And,] [i]f the product in a product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695, 697 (Fed. Cir. 1985). If, however, the process steps of the product-by-process claim result in a product that is structurally or functionally different from that disclosed in the prior art, then the claims are not unpatentable. *Greenliant Systems, Inc. v. Xiocor LLC*, 692 F.3d 1261, 1268 (Fed. Cir. 2012). But, “the burden is upon the applicants to come forward with evidence establishing an

unobvious difference between the claimed product and the prior art product.” *In re Marosi*, 710 F.2d 799, 803 (Fed. Cir. 1983). Thus, the patentability of a claim to a product does not necessarily rest on the method of making that product. Rather, it must be shown that the *product itself* is new and nonobvious.

Here, Appellant contends that “the process steps recited in claim 18 impart distinctive structural (physical and chemical) characteristics to the final product.” Reply Br. 6. However, Appellant does not identify what structural aspects the process steps of claim 18 provide that render claim 18 nonobvious. *See generally id.* Because Appellants failed to show that the process steps used in claims 18 result in an unobvious difference between the claimed product and the prior art product, we sustain the rejection of claim 18. *Marosi*, 710 F.2d at 803.

Rejection B – Obviousness (1–4, 6, 7, and 12–19)

The Examiner rejects claims 1–7 and 12–19 as obvious over the combination of Zimmerer in view of Kim and optionally Meraldi. Final Act. 5.

1. Claim 1

The Examiner reasserts the same findings identified above for Rejection A with respect to Zimmerer and Meraldi. *Id.* at 5–6. The Examiner additionally finds that “Kim teaches the use of cellulose fiber for a tire cord . . . and teaches a cellulose fiber with crystallinity of 14–34%.” *Id.* According to the Examiner, the crystallinity taught by Kim was is a known crystallinity value and therefore would have been obvious at the time of the invention. *Id.* at 6.

In addition to the arguments advanced above for Rejection A, Appellant further contends that “Kim et al. teaches away from employing viscose fibers for reinforcement members.” Appeal Br. 27. According to Appellant, Kim details that viscose fabrics are difficult to manufacture and use highly toxic materials. *Id.*

Having determined Appellant’s primary arguments are unpersuasive of reversible error, as discussed above for Rejection A, we turn to Appellant’s additional argument that Kim teaches away from using a viscose yarn. This argument is, likewise unpersuasive of reversible error in the Examiner’s rejection, because “[a] reference does not teach away . . . if it merely expresses a general preference for an alternative invention but does not ‘criticize, discredit, or otherwise discourage’ investigation into the invention claimed.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1327 (Fed. Cir. 2009) (quoting *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004)). Various types of teachings may support a finding of “teaching away,” including known disadvantages in old devices that would naturally discourage the search for new inventions, teachings leaving the impression that the product would not have the property sought by the applicant, and reference combinations that would produce a seemingly inoperative device. *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994).

Here, although Kim contrasts its own invention against viscose rayon as being an economical, easy, and environmentally friendly alternative, Kim stresses its similarity to the properties of viscose rayon fibers, we find nothing that would *discourage* or lead the skilled artisan to believe viscose rayon *would not work*. Compare Kim col. 1:5–30, 5:11–18, 10:49–55 with *id.* col. 1:55–58, 3:36–64. Indeed, it would have been clear from the

teachings of Kim to one of ordinary skill that the properties of viscose rayon are desirable and Kim seeks to provide an alternative to viscose that possesses the benefits of viscose—including crystallinity. *Id.* at col. 1:55–58, 3:36–64. The fact that Kim may prefer an alternative cellulosic material than that claimed, without more, does not amount to a teaching away. *DePuy Spine*, 567 F.3d at 1327. Therefore, we sustain the Examiner’s rejection of claim 1 and the claims depending therefrom.

2. Claim 18

Similar to the Examiner’s findings above, with respect to Rejection A, the Examiner finds “that the construction of Zimmerer (combined) set out above is the same product as that of applicant, and it is the product of a product-by-process claim that is examined.” Final Act. 7. Appellant relies on the same arguments set forth in Rejection A to support non-obviousness of claim 18 over Rejection B. Appeal Br. 27–28. For the same reasons discussed above, we sustain the Examiner’s rejection of claim 18.

CONCLUSION

Appellant failed to identify a reversible error in the Examiner’s rejection of claims 1–7 and 12–19 under 35 U.S.C. § 103(a) as unpatentable over Zimmerer in view of Kwon, and optionally Meraldi.

Appellant failed to identify a reversible error in the Examiner’s rejection of claims 1–4, 6, 7, and 12–19 under 35 U.S.C. § 103(a) as unpatentable over Zimmerer in view of Kim, and optionally Meraldi.

Appellant failed to identify a reversible error in the Examiner’s rejection of claims 8–10 under 35 U.S.C. § 103(a) as unpatentable over

Zimmerer in view of Kwon, and optionally Meraldi or Zimmerer in view of Kim and optionally Meraldi, and further in view of Boiocchi.

Appellant failed to identify a reversible error in the Examiner's rejection of claim 11 under 35 U.S.C. § 103(a) as unpatentable over Zimmerer in view of Kwon, Boiocchi and optionally Meraldi, or Zimmerer in view of Kim, Boiocchi and optionally Meraldi and further in view of Almonacil.

DECISION

For the above reasons, the Examiner's rejection of claims 1-19 is affirmed as summarized below.

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1-7, 12-19	103(a)	Zimmerer, Kwon, Meraldi	1-7, 12-19	
1-4, 6, 7, 12-19	103(a)	Zimmerer, Kim, Meraldi	1-4, 6, 7, 12-19	
8-10	103(a)	Zimmerer, Kwon, Meraldi, Boiocchi or Zimmerer, Kim, Meraldi, Boiocchi	8-10	
11	103(a)	Zimmerer, Kwon, Meraldi, Boiocchi, Almonacil or Zimmerer, Kim, Meraldi, Boiocchi, Almonacil	11	
Overall Outcome			1-19	

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

AFFIRMED