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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte CAROLE JUSTINE,
THOMAS KRAMER, and GUENTER WAHL

Appeal 2019-002894
Application 14/854,877
Technology Center 1700

Before LINDA M. GAUDETTE, JAMES C. HOUSEL, and
GEORGE C. BEST, *Administrative Patent Judges*.

HOUSEL, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 1–5, 7, 8, and 12–21. We have jurisdiction under 35 U.S.C. § 6(b).

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 Continental Reifen Deutschland GmbH. Appeal Brief (“Appeal Br.”) filed November 5, 2018, p. 2.

We AFFIRM.²

CLAIMED SUBJECT MATTER

The claims are directed to a rubberized reinforcement ply. Spec. 1:13. Appellant discloses that the invention is directed to a rubberized reinforcement ply for articles made of an elastomeric material, preferably for vehicle tires. *Id.* at 1:13–15. The reinforcement ply comprises a multiplicity of mutually spaced-apart, parallel strength members (hybrid cords) composed of at least two multifilament yarns twisted together, the first yarn being a viscose multifilament yarn and the second yarn being a nonmetallic yarn made from a material different from the first yarn. *Id.* at 1:15–22.

Claim 1, reproduced below from the Claims Appendix to the Appeal Brief, is illustrative of the claimed subject matter:

1. A rubberized reinforcement ply, the reinforcement ply comprising:
 - a multiplicity of mutually spaced-apart strength members in a parallel arrangement,
 - wherein the strength members are hybrid cords composed of at least two multifilament yarns twisted with one another, wherein the at least two multifilament yarns comprise a first multifilament yarn being a viscose multifilament yarn and a second multifilament yarn being a nonmetallic multifilament yarn that is composed of a material different from the first multifilament yarn,
 - wherein the first multifilament yarn after conditioning in a DIN EN ISO 139-1:2005 standard atmosphere has a yarn linear density < 1100 dtex and a tenacity of ≥ 45 cN/tex,

² Our Decision additionally refers to the Specification (“Spec.”) filed September 15, 2015, the Final Office Action (“Final Act.”) dated March 1, 2018, the Examiner’s Answer (“Ans.”) dated January 15, 2019, and the Reply Brief (“Reply Br.”) filed February 25, 2019.

wherein the hybrid cord has a cord linear density ≤ 3000 dtex, and

wherein:

the first multifilament yarn is a rayon multifilament yarn and the second multifilament yarn is a PA66 multifilament yarn, the construction of the hybrid cord being rayon 780xl + PA66 700xl, or

the first multifilament yarn is a rayon multifilament yarn and the second multifilament yarn is an aramid multifilament yarn, the construction of the hybrid cord being rayon 620xl + aramid 550xl.

Appeal Br. 36 (Claims App'x).

REFERENCES

The Examiner relies on the following prior art:

Name	Reference	Date
Winter	US 3,693,689	Sept. 26, 1972
Kim et al. ("Kim")	US 6,361,862 B1	Mar. 26, 2002
Fritsch et al. ("Fritsch")	US 6,601,378 B1	Aug. 5, 2003
Mitarai et al. ("Mitarai")	US 8,002,006 B2	Aug. 23, 2011
Rampana et al. ("Rampana")	WO 2012/069955 A1	May 31, 2012

REJECTIONS

The Examiner maintains, and Appellant requests our review of, the following grounds of rejection under 35 U.S.C. § 103:

1. Claims 1–5, 7, 8, and 13–20 as unpatentable over Rampana in view of Kim and/or Winter; and
2. Claims 1–5, 7, 8, and 12–21 as unpatentable over Mitarai in view of Winter and Fritsch.

OPINION

After review of the Examiner's and Appellant's opposing positions and the appeal record before us, we determine that Appellant's arguments are insufficient to identify reversible error in the Examiner's obviousness rejections. *In re Jung*, 637 F.3d 1356, 1365 (Fed. Cir. 2011). Accordingly, we affirm the stated rejections for the reasons set forth in the Appeal and Reply Briefs. We offer the following for emphasis only.

Rejection 1

Appellant does not argue the dependent claims separately from claim 1. *Compare* Appeal Br. 13–24 and 24–34. In accordance with 37 C.F.R. § 41.37(c)(1)(iv), dependent claims 2–5, 7, 8, and 13–20 stand or fall with claim 1, which we select as representative in our opinion below.

The Examiner rejects claims 1–5, 7, 8, and 13–20 under 35 U.S.C. § 103 as unpatentable over Rampana in view of Kim and/or Winter. Specifically, the Examiner finds that Rampana teaches a rubberized reinforcement ply comprising a plurality of hybrid or composite cords, each comprising at least one viscose cellulose yarn (e.g., rayon) and at least one nylon yarn (e.g., nylon 66³). Final Act. 2, 3. In addition, the Examiner finds that Rampana teaches that the rayon and nylon yarns may have linear densities, respectively, between about 1,000–2,800 dtex, and between about 600–2,400 dtex yarn, whereas the hybrid cord may have an overall linear density between about 1,200–7,000 dtex, or more preferably 2160–3840 dtex. *Id.* However, the Examiner finds that Rampana fails to disclose the tenacity of the rayon yarn. *Id.* For this feature, the Examiner finds that Kim

³ Nylon 66 and “PA66,” used in this application, are the same material.

teaches a rayon having a tenacity as high as 7 gf/de (or about 62 cN/tex) that is suitable for tire cords. *Id.* at 2–3. Similarly, the Examiner finds that Winter teaches rayon having a tenacity of at least 4.5 gf/de (or about 40 cN/tex) also suitable for tire cords. *Id.* at 3. Given the hybrid cord’s linear density and the preferred linear density ranges for each of the rayon and nylon yarns, the Examiner determines that it would have been obvious to one of ordinary skill in the art to have formed Rampana’s hybrid cord, with linear densities and tenacity as recited in claim 1, absent a persuasive showing of unexpected results. *Id.*

Appellant first argues that Rampana, Kim, and Winter fail to teach either of the specifically recited hybrid cord constructions, i.e., 1) rayon 780x1 and nylon 66 700x1, or 2) rayon 620x1 and aramid 550x1, recited in claim 1. Appeal Br. 15–19. Appellant contends that the Examiner simply concludes that these constructions would have been obvious rather than pointing to support for the disclosure of these combinations of hybrid cord content and construction. *Id.* at 15–16. Moreover, Appellant contends that Rampana is more limited than the Examiner finds, relying on known, traditional reinforcement members having legacy yarns that are much different in construction. *Id.* at 16. Appellant also urges that Rampana is directed to high or ultra-high performance tires for larger, bulkier, heavier vehicles requiring larger tires and larger, stronger plies that are thicker. *Id.* at 17. According to Appellant, Rampana may disclose a few hybrid cords and various large ranges of cord linear density and tenacities, but such disclosure is not sufficient to support obviousness of the specifically recited hybrid cord constructions. *Id.* at 18.

Appellant's argument is not persuasive of reversible error because it fails to address the obviousness rejection of the two specifically recited hybrid cord constructions over Rampana in view of Kim and Winter. There is no dispute that Rampana fails to specifically recite either of these two hybrid cord constructions. *See* Ans. 3. However, as the Examiner indicates, the rejection before us is based on obviousness which necessitates that we consider not just Rampana's specifically recited embodiments, but also those reasonably suggested to the ordinary artisan by the entirety of Rampana's disclosure. In this case, Rampana specifically teaches rayon/nylon 66 hybrid cord constructions, but fails to teach the recited number of filaments in these yarns. Rampana also teaches preferred linear densities for both the rayon and nylon 66 yarns, as well as for a hybrid cord made from these yarns.

Based on these values, the Examiner concluded that it would have been obvious to form rayon and nylon 66 yarns, and a hybrid cord from these yarns, within Rampana's preferred linear densities. Doing so would yield a number of acceptable yarns and hybrid cords having a variety of filament numbers, all of which are within the scope of Rampana's disclosure. And each would have been obvious to one of ordinary skill in the art, absent unexpected results for any particular combination. *Merck & Co. v. Biocraft Labs., Inc.*, 874 F.2d 804, 807 (Fed. Cir. 1989) ("That the '813 patent discloses a multitude of effective combinations does not render any particular formulation less obvious. This is especially true because the claimed composition is used for the identical purpose."); *see also, In re Susi*, 440 F.2d 442, 445 (CCPA 1971) (obviousness rejection affirmed where the disclosure of the prior art was "huge, but it undeniably include[d] at least some of the compounds recited in appellant's generic claims and [was] of a

class of chemicals to be used for the same purpose as appellant's additives”); *In re Kubin*, 561 F.3d 1351, 1359 (Fed. Cir. 2009) (“Where a skilled artisan merely pursues ‘known options’ from a ‘finite number of identified, predictable solutions,’ obviousness under § 103 arises.” (quoting *KSR Int’l. Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007))).

Here, the Examiner’s identification of a reason to select the particular yarns and hybrid cords from the genus was sufficient to shift the burden to Appellant, i.e., demonstrated unexpected results. In this regard, Appellant argues that the Examiner erred by requiring Appellant to first show unexpected results, rather than establishing a prima facie case of obviousness in the first place. Appeal Br. 19–20. We disagree. The Examiner carries the initial burden of establishing a prima facie case of obviousness. In this case, the Examiner did so by establishing that the ordinary artisan would have found a wide range of rayon/nylon 66 yarns and hybrid cords obvious including the two specifically recited hybrid cords. In noting that Appellant has not established that these specifically recited hybrid cords have unexpected results, the Examiner merely reaffirms their obviousness and is not requiring unexpected results. Thus, we agree with the Examiner that absent a showing of unexpected results for the two specifically recited hybrid cord constructions, these two constructions would have been obvious to one of ordinary skill in the art based on the combination of Rampana, Kim, and Winter.

Appellant next argues that the prior art fails to identify the problem Appellant faced in the marketplace and, therefore, could not disclose Appellant’s solution. Appeal Br. 20–23. Appellant contends that the recited hybrid cord constructions were specifically selected due to their desired

thicknesses. *Id.* at 20. Appellant also contends that the invention was motivated by a desire to find thin reinforcing members that are eco-friendly and have physical properties roughly equivalent to traditional reinforcement members. *Id.* at 21. Appellant attempts to contrast this objective from Rampana by asserting that Rampana is directed to increasing performance and comfort in high or ultra-high performance vehicle tires. *Id.* at 22. Appellant urges that these are two fundamentally different problems leading to two fundamentally different solutions. *Id.* at 23.

This argument is not persuasive of reversible error because Appellant has not directed our attention to any evidence supporting the assertion that Appellant's and Rampana's purposes are fundamentally different leading to fundamentally different solutions. Indeed, Rampana specifically teaches rayon/nylon 66 hybrid cord constructions similar to those recited in claim 1. Rampana 19:8–20:33. In addition, neither Appellant's motivation nor purpose controls the determination as to whether the claimed invention would have been obvious. *KSR.*, 550 U.S. at 419–20 (“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.”); *see also*, *In re Kemps*, 97 F.3d 1427, 1430 (Fed. Cir. 1996); *In re Dillon*, 919 F.2d 688, 693 (Fed. Cir. 1990), *cert. denied*, 500 US 904 (1991).

Accordingly, we sustain the Examiner's obviousness rejection of claim 1, and dependent claims 2–5, 7, 8, and 13–20, over the combination of Rampana, Kim, and Winter.

Rejection 2

Appellant does not argue the dependent claims separately from claim 1. *Compare* Appeal Br. 13–24, *with id.* at 24–34. In accordance with 37 C.F.R. § 41.37(c)(1)(iv), dependent claims 2–5, 7, 8, and 12–21 stand or fall with claim 1, which we select as representative in our opinion below.

The Examiner rejects claims 1–5, 7, 8, and 12–21 under 35 U.S.C. § 103 as unpatentable over Mitarai in view of Winter and Fritsch. Specifically, the Examiner finds that Mitarai teaches a rubberized reinforced ply comprising aramid, nylon, polyester, rayon, and combinations thereof. Final Act. 5. The Examiner determines that combinations of the listed polymers correspond to hybrid reinforcing cords. *Id.* Given the limited number of possible combinations, the Examiner concludes that it would have been obvious to form hybrid cords with rayon and nylon or aramid. *Id.* However, the Examiner acknowledges that Mitarai fails to teach the specifically recited yarn constructions and tenacity. *Id.*

The Examiner finds that Winter teaches rayon having a tenacity of at least 4.5 gf/de (or about 40 cN/tex) suitable for tire cords. *Id.* The Examiner finds that Fritsch teaches conventional linear densities associated with yarns also used in hybrid tire cords. The Examiner concludes that it would have been obvious to have used rayon as taught in Winter in Mitarai’s hybrid cord construction with the linear densities recited in Fritsch because Winter and Fritsch teach the same materials and use as Mitarai, absent a persuasive showing of unexpected results. *Id.* at 5–6.

Appellant raises substantially the same arguments against this rejection as Rejection 1, with the exception that Appellant asserts that Mitarai’s different purpose is runflat tires and that Mitarai fails to disclose nylon 66. *Compare* Appeal Br. 13–24, *with id.* at 24–34. As indicated above,

Appellant has not directed our attention to any evidence supporting the assertion that Appellant's and Mitarai's purposes are fundamentally different leading to fundamentally different solutions. Indeed, Mitarai teaches four polymers (aramid, nylon, polyester, and rayon) may be used alone or in combination to make cords for a rubberized reinforcement ply. Mitarai 3:1–11.

As to the use of nylon 66, we note that Fritsch teaches a variety of polyamide yarns useful in tire cord construction including aramid and nylon 66. Fritsch 5:31–36. Thus, because these materials fall within the general materials listed in Mitarai for the same purpose, their use in Mitarai's hybrid cord constructions would have been obvious. *In re Fout*, 675 F.2d 297, 301 (CCPA 1982) (explaining that an express teaching need not be present in the art to support the substitution of one element for another element used for the same purpose) Further, the substitution of one known element for another is obvious when the combination yields no more than a predictable result, as here (i.e., using aramid or nylon 66 yarns in Mitarai's hybrid cords). *KSR*, 550 U.S. at 416.

Accordingly, for the same reasons given above with regard to Rejection 1, we sustain the Examiner's obviousness rejection of claims 1–5, 7, 8, and 12–21 over the combination of Mitarai, Winter, and Fritsch.

CONCLUSION

Upon consideration of the record, and for the reasons given above and in the Final Office Action and the Examiner's Answer, the decision of the Examiner rejecting claims 1–5, 7, 8, and 12–21 under 35 U.S.C. § 103 is *affirmed*.

DECISION SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	Basis/Reference(s)	Affirmed	Reversed
1-5, 7, 8, 13-20	103	Rampana, Kim, Winter	1-5, 7, 8, 13-20	
1-5, 7, 8, 12-21	103	Mitarai, Winter, Fritsch	1-5, 7, 8, 12-21	
Overall Outcome			1-5, 7, 8, 12-21	

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