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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte FRANK P. DUDDE, PETER P. FELDHUSEN, GOMAA G. ABDELSADEK, ALAN M. PARKER, JIE XU, STEPHEN D. ALLEN, and MIKE PALAZZOLA

Appeal 2019-004907
Application 15/787,795
Technology Center 1700

Before DONNA M. PRAISS, BRIAN D. RANGE, and MERRELL C. CASHION, JR., *Administrative Patent Judges*.

CASHION, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

Pursuant to 35 U.S.C. § 134(a), Appellant[1] appeals from a Final Action rejecting claims 1–20. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

[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 ThyssenKrupp Elevator AG. Appeal Br. 2.

The invention is related to a suspension and transmission device for use with an elevator system. Appeal Br. 4. Claim 1 illustrates the subject matter claimed and is reproduced below:

> 1. A suspension and transmission strip for use with an elevator system, wherein the strip defines a longitudinal direction and a transverse direction, wherein the strip comprises:
>
> (a) a first component, wherein the first component comprises a composite formed from nonmetallic fiber and a second polymer comprising a thiol-cured epoxy; and
>
> (b) a second component, wherein the second component comprises a first polymer, wherein the second component is configured to surround the first component;
>
> wherein the suspension and transmission strip is connectable with an elevator and is configured to support and hoist the elevator in use.

Appellant requests review of the following rejections maintained by the Examiner:

I. Claim 13 rejected under 35 U.S.C. § 112 (pre-AIA), first paragraph, as failing to comply with the written description requirement.

II. Claim 1 rejected under 35 U.S.C. § 103(a) as unpatentable over Brewster (US 4,092,818, issued June 6, 1978), Arnold (US 5,326,411, issued July 5, 1994), and Shin (Junghwan Shin et al., *Thiol-Isocyanate-Ene Ternary Networks by Sequential and Simultaneous Thiol Click Reactions*, *Chem. Mater*. 2010, 22, 2616–2625).

III. Claims 1–7, 10–12, and 15–20 rejected under 35 U.S.C. § 103(a) as unpatentable over Brewster, Arnold, and Sangermano (Marco Sangermano et al., *Preparation and Characterization of hybrid thiol-ene/epoxy UV-thermal dual-cured systems*, *Polymer Int*. 2010, 59:1046–1051).

IV. Claims 8 and 9 rejected under 35 U.S.C. § 103(a) as unpatentable over Brewster, Arnold, Sangermano, and Pelto-Huikko (WO 2009/090299 A1, published July 23, 2009).

V. Claim 14 rejected under 35 U.S.C. § 103(a) as unpatentable over Brewster, Arnold, Sangermano, and Groover (Fiber-Reinforced Polymers (§ 9.4.1), Fundamentals of Modern Manufacturing: Materials, Processes and Systems, John Wiley & Sons, January 7, 2010, p. 200).

VI. Claim 1 rejected under 35 U.S.C. § 103(a) as unpatentable over Blackman (US 2,753,979, issued July 10, 1956), Arnold, and Shin.

VII. Claim 1–7, 10–12, and 15–20 rejected under 35 U.S.C. § 103(a) as unpatentable over Blackman, Arnold, and Sangermano.

VIII. Claims 8 and 9 rejected under 35 U.S.C. § 103(a) as unpatentable over Blackman, Arnold, Sangermano, and Pelto-Huikko.

IX. Claim 14 rejected under 35 U.S.C. § 103(a) as unpatentable over Blackman, Arnold, Sangermano, and Groover.

OPINION

35 U.S.C. § 112, 1st paragraph - Written Description Requirement

After review of the respective positions the Appellant provides in the Appeal and Reply Briefs and the Examiner provides in the Final Action and the Answer, we reverse the Examiner's rejection of claim 13 under 35 U.S.C. § 112, first paragraph, for lack of written description for the reasons Appellant provides.

As the Examiner notes, claim 13 recites "the first component further comprises a third polymer comprising thiol-isocyanate-ene ternary network." Final Act. 2. The Examiner finds that the noted language, when read in the context of claim 1, is not described in the Specification in such a

way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. *Id.* According to the Examiner, while support exists in paragraphs 121–126 for thiol-isocyanate-ene ternary network, there is no support for the first component comprising the thiol-cured epoxy recited in claim 1 and the thiol-isocyanate-ene ternary network recited in claim 13. *Id*.

Appellant argues that the Specification describes polymers for use in the components of the strip, including thiol-cured epoxies and thiol-isocyanate-ene-ternary networks. Appeal Br. 17–18; Reply Br. 10; Spec. ¶¶ 119–126. Appellant further argues that the Specification describes the components of the strip as comprising any of the material options described. Appeal Br. 17; Spec. ¶¶ 66–67. Thus, Appellant contends that the Specification discloses, with reasonable clarity, a first component comprising a thiol-cured epoxy and thiol-isocyanate-ene-ternary networks to satisfy the written description requirement for claim 13. Appeal Br. 17–18; Reply Br. 10.

We agree with Appellant that there is reversible error in the Examiner's determination that the disputed language lacks adequate descriptive support.

Our reviewing court stated in *In re Kaslow*, 707 F.2d 1366, 1375 (Fed. Cir. 1983):

> The test for determining compliance with the written description requirement is whether the disclosure of the application as originally filed reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter, rather than the presence or absence of literal support in the specification for the claim language.

See also Ariad Pharms., Inc. v. Eli Lilly & Co., 598 F.3d 1336, 1351 (Fed. Cir. 2010). "This inquiry . . . is a question of fact. . . . [T]he level of detail required [in the Specification as originally filed] to satisfy the written description requirement varies depending on the nature and scope of the claims and on the complexity and predictability of the relevant technology." *Id*. Whether the written description requirement is complied with is a question of fact, judged from the perspective of one of ordinary skill in the art as of the relevant filing date. *See Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563–64 (Fed. Cir. 1991).

The claimed subject matter need not be described in haec verba in the Specification in order for that Specification to satisfy the description requirement. *In re Smith*, 481 F.2d 910, 914 (CCPA 1973). That is, it is enough that one of ordinary skill in the art would recognize that the inventor invented what is claimed without a claim using the same words as the Specification. *Union Oil Co. of Cal. v. Atlantic Richfield Co*., 208 F.3d 989, 997 (Fed. Cir. 2000).

The premise of the Examiner's rejection is that there is no express support in the Specification, as originally filed, for a component comprising the thiol-isocyanate-ene ternary network recited in claim 13 and the thiol-cured epoxy recited in claim 1, from which claim 13 depends.

As Appellant explains, both compounds are disclosed as suitable materials for making any component of the strip. Appeal Br. 17; Spec. ¶ 37. Moreover, the Specification discloses that certain compounds can be blended. Spec. ¶ 112 (describing the use of blended epoxy resins). The Specification also discloses that "[i]n addition to thiol-cured epoxies being used in some versions of a strip, in the same and/or other versions a hybrid

epoxy, *thiol-epoxy/thiol-ene*, can be used." *Id*. ¶ 119 (emphasis added). Thus, the Specification describes a blend or combination of a thiol-epoxy and a thiol-ene, which appears to be the combination recited in claim 13. One skilled in the art, upon reading these disclosures, would understand that the invention encompasses components made of multiple materials. That is, one of ordinary skill in the art would recognize that the inventor invented what is claimed without a claim using the same words as the Specification. *Union Oil,* 208 F.3d at 997. Given these disclosures, the Examiner has not explained adequately why the disputed claim language lacks written descriptive support.

Accordingly, we reverse the Examiner's rejection of claim 13 under 35 U.S.C. § 112, first paragraph, as lacking written descriptive support for the reasons the Appellant presents and we give above.

Prior Art Rejections

The Examiner maintains two sets of rejections under 35 U.S.C. § 103(a), each set based on a common combination of base references: Brewster, Arnold, and either Shin or Sangermano for Rejections II–V and Blackman, Arnold, and either Shin or Sangermano for Rejections VI–IX.

Appellant relies on the same line of arguments to address both sets of rejections. *See generally* Appeal Br. We limit our discussion to claim 1 in addressing all of the rejections.

After review of the respective positions the Appellant provides in the Appeal and Reply Briefs and the Examiner provides in the Final Action and the Answer, we reverse the Examiner's prior art rejections of claims 1–12 and 14–20 under 35 U.S.C. § 103(a) essentially for the reasons the Appellant presents. We add the following for emphasis.

Claim 1[2]

Claim 1 recites a suspension and transmission strip having a first component comprising a composite formed from nonmetallic fiber and a second polymer comprising a thiol-cured epoxy.

We refer to the Examiner's Final Office Action for a complete statement of the various rejections of claim 1. *See generally* Final Act.[3] Briefly, the Examiner finds that Arnold discloses a belt strip having a first component comprising a composite formed of nonmetallic fibers and a polymer. *Id*. at 4. The Examiner finds that Arnold does not disclose the first component as comprising a thiol-cured epoxy. *Id.* The Examiner turns to Shin and Sangermano for the missing feature. The Examiner finds that Shin teaches a hybrid network comprising a thiol-cured epoxy with enhanced physical and 1nechanical properties. Final Act. 4; Shin 2617. Alternatively, the Examiner finds that Sangermano discloses a hybrid thiol-ene/epoxy cured polymer with unsaturated groups having increased thermal stability and improved properties. Final Act. 7; Sangermano Abstr. The Examiner determines that it would have been obvious to one of ordinary skill in the art to substitute the polymer of either Shin or Sangermano for both the core coating and the outer layer as Arnold teaches using the same material for both and for the benefits disclosed by Shin and Sangermano. Final Act. 4, 7.

[2] A discussion of Brewster and Blackman is unnecessary for disposition of this appeal. The Examiner did not rely upon these references to address the components of the suspension and transmission strip recited in claim 1. *See generally* Final Act.

[3] In our discussion and for brevity, citations to the Final Action are limited to the first occurrence of when the Examiner discusses each reference.

Appellant argues that there is no motivation to combine the teachings of Shin or Sangermano with the teachings of Arnold. Appeal Br. 16. According to Appellant, while Shin and Sangermano relate to material chemistry and epoxies, Arnold does not disclose the material science of such polymers nor the use of epoxies. Appeal Br. 16; Reply Br. 9. Thus, Appellant contends that Shin or Sangermano provides neither reason nor motivation to amend the teachings of the cited art so as to incorporate a thiol with an epoxy. Appeal Br. 16.

We agree with Appellant that there is reversible error in the Examiner's determination of obviousness.

The Examiner bears the initial burden of presenting a prima facie case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). "[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006), *quoted with approval in KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). The fact finder must be aware "of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning." *KSR*, 550 U.S. at 421 (citing *Graham v. John Deere Co.*, 383 U.S. 1, 36 (1966) ("warning against a 'temptation to read into the prior art the teachings of the invention in issue'")).

The premise of the Examiner's rejections is that one skilled in the art would have turned to Shin and Sangernano to improve the physical and mechanical properties of a belt because this skilled artisan "clearly would have polymer chemistry knowledge as is clearly demonstrated by Arnold

which teaches belts in use with polymers and such is known in the art and commonly practiced." Ans. 21. The Examiner, however, does not direct us to any portion of Arnold that supports the Examiner's premise. In fact, Arnold merely discloses the use of a polymer or elastomeric material to coat a fabric core without discussing any details as to the composition of these materials. Arnold col. 6, ll. 25–26. Rather, Arnold only specifically discloses rubber type materials. *Id*. at col. 6, ll. 48–58. Such a limited disclosure is insufficient to establish the level of skill in this art. Thus, the Examiner has not adequately explained why one skilled in the art would have found the materials of Shin and Sangermano to be suitable for making Arnold's belt/strip. The Examiner has not provided an adequate technical explanation with the requisite rational underpinning of why or how one skilled in the art, absent impermissible hindsight, would have arrived at the claimed suspension and transmission strip from the combined teachings of Arnold, Shin, and Sangermano. Thus, the Examiner has not made a prima facie case of obviousness.

Accordingly, we reverse the Examiner's prior art rejections of claims 1–12 and 14–20 under 35 U.S.C. § 103(a) for the reasons Appellant presents and the reasons we give above.

CONCLUSION

In summary:

Claim(s) Rejected	35 U.S.C. §	References/Basis	Affirmed	Reversed
13	112, first paragraph	Written description		13
1	103(a)	Brewster, Arnold, Shin		1
1–7, 10–12, 15–20	103(a)	Brewster, Arnold, Sangermano		1–7, 10–12, 15–20
8, 9	103(a)	Brewster, Arnold, Sangermano, Pelto-Huikko		8, 9
14	103(a)	Brewster, Arnold, Sangermano, Groover		14
1	103(a)	Blackman, Arnold, Shin		1
1–7, 10–12, 15–20	103(a)	Blackman, Arnold, Sangermano		1–7, 10–12, 15–20
8, 9	103(a)	Blackman, Arnold, Sangermano, Pelto-Huikko		8, 9
14	103(a)	Blackman, Arnold, Sangermano, Groover		14
Overall Outcome				**1–20**

REVERSED