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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CERRO WIRE, INC.
Requester and Respondent

v.

SOUTHWIRE COMPANY
Patent Owner and Appellant

Appeal 2019-002436
Reexamination Control 95/000,695
Technology Center 3900
Patent 8,043,119 B2

Before RICHARD M. LEBOVITZ, MARC S. HOFF, and ERIC B. CHEN,
Administrative Patent Judges.

CHEN, *Administrative Patent Judge.*

DECISION ON REQUEST FOR REHEARING

Appeal 2019-002436
Reexamination Control 95/000,695
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On October 7, 2019, Patent Owner Southwire Company requested rehearing under 37 C.F.R. § 41.79(a)(4) of the new Decision on the Examiner’s determination under 37 C.F.R § 41.77(d), mailed September 6, 2019 (“New Decision” or “New Dec.”), in which we affirmed in part the Examiner’s decision to maintain the rejections of claims 3, 4, 6, 7, 9–12, 22–25, 27–31, 40–42, 47, 48, and 59.

On October 7, 2019, Requester Cerro Wire also requested rehearing under 37 C.F.R. § 41.79(a)(4) of the New Decision.

In response to Patent Owner’s request for rehearing, Requester filed written comments (“Requester Comments”), dated November 7, 2019.

In response to Requester’s request for rehearing, Patent Owner filed written comments (“PO Comments”), dated November 7, 2019.

We designate the rejections of independent claims 3 and 9 under 35 U.S.C. § 102(b) as anticipated by either Mehta or Hauenstein a new ground pursuant to our authority under 37 C.F.R. § 41.50(b).

Thus, the Request for Rehearing is *granted in part*.

Patent Owner Southwire’s Rehearing

35 U.S.C. § 112, First Paragraph Rejections

Claims 22 and 28

First, with respect to the maintained rejection of claims 22 and 28 under 35 U.S.C. § 112, first paragraph, which recite “the coefficient of friction of said cable is between 0.125 and 0.150,” Patent Owner argues the following:

Thus, because of the inclusion of the “about” term in the prior recitations of Claims 22 and 28 (which recited, in relevant part “between about 0.125 and about 0.15”), the Board understood that the recited limitations encompassed subject matter where the coefficient of friction could be below 0.125.

....

In view of the Board’s findings, Patent Owner amended the claims to clarify that the claimed coefficient of friction values were greater than 0.125 and below 0.150—i.e., the claimed coefficient of friction values were between 0.125 and 0.150—exactly as the Board originally indicated Figure 3 disclosed.

(PO Req. Reh’g 5 (emphasis omitted).) Requester disagrees and argues “[t]he Prior Decision explicitly states that Figure 3 of the ’119 patent illustrates coefficients of friction that are ‘greater than 0.125, but less than 1.50’ for high-molecular weight silicone oil in concentrations from 9% to 13%.” (Requester Comments 5 (emphasis omitted).)

Our prior Decision (Appeal 2016-006893), mailed January 16, 2018 (“Prior Decision” or “Prior Dec.”) states the following:

Figure 3 of ’119 patent illustrates that for concentrations of high-molecular weight silicone oil (LMW Si) from 9% to 13%, the coefficient of friction can be estimated as greater than 0.125, but less than 0.150. Accordingly, Figure 3 does not provide written description support the limitation “the coefficient of friction of said cable is between *about 0.125* and *about 0.150*” (emphases added), as recited in claims 22, 28, and 59.

Thus, we agree with Requester’s argument that “[a]s shown in Figure 3 of the ’119 patent, the lowest value for a coefficient of friction using a silicone based pulling lubricant is above 0.125” and “the ’119 patent does not provide written description support for . . . the open ended range of ‘less than or

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equal to about 0.150,' because values of 0.125 or below are not disclosed." equal to about 0.150,' because values of 0.125 or below are not disclosed."

(Prior Dec. 28.) Accordingly, Patent Owner's argument that "the Board understood that the recited limitations encompassed subject matter where the coefficient of friction could be below 0.125" (PO Req. Reh'g 5) is unsupported by our Prior Decision.

Second, with respect to the maintained rejection of claims 22 and 28 under 35 U.S.C. § 112, first paragraph, which recite "the coefficient of friction of said cable is between 0.125 and 0.150," Patent Owner argues the following:

This new Board decision does not acknowledge the requirements for satisfying § 112, first paragraph . . . and is contrary to what a Person of Ordinary Skill in the Art (POSITA) would understand the amended claim language to encompass. In the same way that a POSITA would understand "a number between 1 and 3" to include the number 2, but not 1 or 3, a POSITA would understand the claims to encompass the values "between" 0.125 and 0.150, but not those values themselves.

(PO Req. Reh'g 6.) Requester disagrees and argues "[t]here is absolutely no support for the Patent Owner's bald assertion that a POSITA would understand 'between' to exclude the endpoints of the range." (Requester Comments 7.)

However, even if Patent Owner is correct that "POSITA would understand the claims to encompass the values 'between' 0.125 and 0.150, but not those values themselves," dependent claims 22 and 28 are not supported for values less than 0.132.

Third, with respect to the maintained rejection of claims 22 and 28 under 35 U.S.C. § 112, first paragraph, which recite “coefficient of friction of said cable is between 0.125 and 0.20,” Patent Owner argues the following:

Consistent with the requirements for satisfying § 112, first paragraph, a POSITA would understand that test results presented graphically would be characterized by some level of expected variability, and that expected level of variability would still be within the scope of disclosure of such an illustration. The Supplemental Declaration [paragraph 18] of Requester’s Expert, Dr. William N. Unertl explicitly describes how a person of skill in the art would interpret the disclosure of Figure 3.¹

(PO Req. for Reh’g 6.)

[T]he Board’s precision is correct in determining that both the Y77 Control line and the lowest shown CoF value for HMW Si are equal to 0.132, and conservatively using the lower estimate of 10% “expected” variation in CoF measurements as proposed by Dr. Unertl, this would yield an expected variation of 0.0132, centered on the CoF measurement of 0.132. . . . Rounding to significant digits, this would yield an expected lower bound of CoF measurements for HMW Si of approximately 0.125—the same lower bound as recited in Claims 22 and 28.

(*Id.* at 7.) Requester disagrees and argues that “Dr. Unertl’s statements do not provide any evidence regarding what coefficient of friction values would be supported by Figure 3 of the ’119 patent” and “Dr. Unertl’s statements are not part of the Specification of the ’119 patent, and thus do not create

¹ Supplemental Declaration under 37 C.F.R. § 1.132 of William N. Unertl, Ph.D., dated September 11, 2012 for related Application No. 90/009,589, submitted with the Appeal Brief, filed December 10, 2014 (“Supp. Unertl Decl.”).

written description support where there is none.” (Requester Comments 7.)

However, Patent Owner’s argument that Dr. Unertl’s testimony— “[t]en to fifteen percent variation in friction coefficient measurements using standardized tests are expected” (Supp. Unertl Decl. ¶18)—necessarily applies to the coefficient of friction testing used to generate Figure 3 of the ’119 patent is speculative at best. Moreover, Patent Owner has apparently overlooked Dr. Unertl’s further testimony that “[t]he lowest ‘effective CoF’ in Figure 3 of the ’024 Patent is 0.13” and “all claims that require a lower limit of 0.125 are unsupported by any information in the [S]pecification” (*id.* ¶ 19).

Claims 25, 27, 31, 48, and 59

With respect to the maintained rejection of claims 25, 27, and 31, under 35 U.S.C. § 112, first paragraph, which recite “coefficient of friction of said cable is between 0.125 and 0.20” and “silicone based pulling lubricant is at least 7% by weight” (or “at least 8% by weight”),² Patent Owner argues the following:

With respect to the upper bound of the recited “between 0.125 and 0.20” recitation of CoF values in these claims, Patent Owner again reminds the Board that § 112, first paragraph does not require literal support within the originally filed application, and that the application need only convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention as is now claimed. . . . Figure 3 satisfies this requirement, as it provides numerous examples of CoF values between 0.125 for lubricant

² Claims 48 and 59 do not recite a numerical weight percentage for the silicone based pulling lubricant.

concentrations above 7% (or 8%). . . . Likewise, every value including and above 8% shows a CoF falling within the claimed 0.125 and 0.2 range.

(PO Req. Reh’g 7–8.) Requester disagrees and argues “all of the upper values for lubricant amounts of at least 7% or at least 8%, as recited in claims 25, 27, and 31, are well below 0.20” and “[f]or the remainder of the lubricant amounts, the upper values are both above and below 0.20.”

(Requester Comments 10.)

Contrary to Patent Owner’s arguments, our New Decision states the following:

Figure 3 [of the ’119 patent] illustrates that for concentrations of silicone oil greater than 7%, the coefficient of friction is less than 0.200. In other words, none of the bars in Figure 3 are equivalent to 0.200. Thus, while there are values between 0.125 and 0.200, there is no support for the upper range [of greater than 7%] at the claimed silicone oil value.

(New Dec. 8–9.) Other than providing an unsupported conclusory statement that “every value including and above 8% shows a CoF falling within the claimed 0.125 and 0.2 range,” (PO Req. Reh’g 8), Patent Owner has not provided any persuasive arguments or evidence as to why the findings in our New Decision were improper. Thus, Patent Owner has failed to “state with particularity the points believed to have been misapprehended or overlooked by the Board” as required by 37 C.F.R. § 41.52.

Claim 47

With respect to the maintained rejection of claim 47 under § 112, first paragraph, which recites “a coefficient of friction of said cable is less than or equal to about 0.20,” Patent Owner argues the following:

However, as discussed above, satisfying § 112, first paragraph does not require literal support within the originally filed application. Instead, the application need only convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention as is now claimed. Figure 3 satisfies this requirement, as it provides numerous examples of CoF values below the claimed 0.20 value. These examples, which span a multitude of points within the recited range, are more than sufficient to show possession of the claimed invention, particularly in light of the manner in which a POSITA would interpret the disclosed values of Figure 3, as explained by the Requester's Expert, Dr. Unertl.

(PO Req. Reh'g 9.) Requester disagrees and argues “[t]he range of ‘less than or equal to about 2.0’ is an open ended range that fails the written description requirement because the lower end of the range, such as values of 0.125 or below, is not disclosed.” (Requester Comments 10.)

Patent Owner's arguments are unpersuasive for the reasons discussed previously with respect to Dr. Unertl's testimony for the rejection of claims 22 and 28 under 35 U.S.C. § 112, first paragraph.

35 U.S.C. § 102 Rejection—Mehta

First, with respect to the maintained rejection of independent claims 3 and 9 under 35 U.S.C. § 102(b), Patent Owner argues the following:

[T]he Federal Circuit [*Southwire Co. v. Cerro Wire LLC*, 870 F.3d 1306 (Fed. Cir. 2017)] has explicitly considered the propriety of relying on inherency to support a determination that a prior art reference necessarily teaches a performance-related limitation of a power cable. . . . Because the cited Federal Circuit case is narrowly directed to a related patent within the same patent family as the '119 patent at issue, and the Federal Circuit discussed similar issues, Patent Owner

respectfully requests that reconsideration of the outstanding anticipation rejections should include an explicit consideration of the relevance of the cited Federal Circuit opinion.

(PO Req. Reh’g 10–11 (emphasis omitted).)

Much like the Federal Circuit’s determination in the consideration of the [prior art] Summers-based rejection of claims of the ’301 patent, the outstanding anticipation rejection of Claims 3, 6, 7, and 9–12 should be reversed in light of its improper reliance on inherency.

(*Id.* at 12.)

Mehta’s disclosure does not necessarily disclose a nylon material combined with a silicone based pulling lubricant to form a surrounding sheath of a finished power cable, having a concentration of silicone based pulling lubricant that is “sufficient to reduce the required installation pulling force of the cable” as recited in the claims.

(*Id.* at 13 (emphasis omitted).) Requester disagrees and argues “the Federal Circuit’s analysis [in *Southwire*] related to whether the Board erred in relying on ‘inherency’ in making its obviousness determination” and “the Federal Circuit was not addressing an anticipation rejection.” (Requester Comments 13.)

In *Southwire* the Federal Circuit articulated the following:

We have held that “the use of inherency in the context of obviousness must be carefully circumscribed because ‘[t]hat which may be inherent is not necessarily known’ and that which is unknown cannot be obvious.” While “[w]e have recognized that inherency may supply a missing claim limitation in an obviousness analysis,” [w]e have emphasized that “the limitation at issue *necessarily* must be present” in order to be inherently disclosed by the reference.

Southwire, 870 F.3d at 1311 (citations omitted).

Our predecessor court has held that where “*all process limitations . . . are expressly disclosed* by [the prior art reference], except for the *functionally expressed* [limitation at issue],” the PTO can require an applicant “to prove that the subject matter shown to be in the prior art does not possess the characteristic relied on.” *In re Best*, 562 F.2d 1252, 1254–55 (CCPA 1977) (emphases added) (internal quotation marks omitted). The court noted that “[w]hether the rejection is based on ‘inherency’ under 35 U.S.C. § 102, [or] on ‘prima facie obviousness’ under 35 U.S.C. § 103, . . . the burden of proof is the same.” *Id.*

Id. at 1311 (emphasis). Thus, the Federal Circuit cautioned against using “inherency in the context of obviousness,” rather than inherency in the context of anticipation. In other words, *Southwire* is distinguishable because independent claims 3 and 9 are maintained as rejected under 35 U.S.C. § 102(b), rather than 35 U.S.C. § 103.

Moreover, because Mehta describes wire or cable extrusion using thermoplastic resin (A) (e.g., nylon) and a siloxane blend (B) that reduces surface coefficient of friction and meet the claim limitations, a prima facie case of anticipation has been established. *Best*, 562 F.2d at 1255 (Where “all process limitations . . . are expressly disclosed by [the prior art reference], except for the functionally expressed [limitation at issue],” the PTO can require an applicant “to prove that the subject matter shown to be in the prior art does not possess the characteristic relied on.”).

Second, with respect to the maintained rejection of claims 3 and 9 under 35 U.S.C. § 102(b) as anticipated by Mehta, Patent Owner argues the following:

Whereas the currently outstanding § 102 rejection of these claims based on Mehta hinges on the Board’s understanding in the Prior Decision that Mehta teaches the incorporation of a

siloxane blend in a concentration between 0.5% and 50% by weight (this interpretation has since been proven incorrect), each of those decisions/arguments mentioned in (b), above show an understanding that Mehta does not teach the incorporation of siloxane at concentrations above 6.5% by weight.

(PO Req. Reh'g 13.)

Correctly construed, a POSITA would understand each of Claim 6, 7, 11, and 12 to be limited to final lubricant concentrations that end up in the extruded (i.e., finished) cable—not intermediate concentrations of lubricant in the thermoplastic that may exist as an intermediate at some earlier time. Patent Owner's construction is supported by the plain meaning of the claim text, the discussion of pulling lubricant concentrations in the specification, and the Board's Prior Decision.

(*Id.* at 16.) Requester disagrees and argues “Mehta disclosure clearly shows that it is not limited to concentrations of silicone that are greater than 6.5% in finished products” and “[i]n at least three different places, Mehta expressly discloses use of ‘at least 0.5 part by weight’ of its siloxane lubricant.”

(Requester Comment 15.)

Mehta explains the following:

The present invention therefore relates to a composition comprising:

- (A) 100 parts by weight of a thermoplastic resin (A); and
- (B) *at least 0.5 part by weight of a siloxane blend* (B) consisting essentially of 50–99% by weight of the siloxane blend of a high molecular weight siloxane

(Col. 1, ll. 27–33 (emphasis added).)

In addition, claims 1 and 6 of Mehta recites the following:

1. A composition comprising:
 - (A) 100 parts by weight of a thermoplastic resin;

(B) *at least 0.5 part by weight of a siloxane blend* (B) consisting essentially of 50–99% by weight of the siloxane blend of a high molecular weight siloxane

(Col. 7, ll. 53–57 (emphasis added).)

6. The composition according to claim 1, wherein siloxane blend (B) is present in an amount from 0.5 to 7 parts by weight of thermoplastic resin (A).

(Col. 8, ll. 10–12.)

Moreover, Mehta explains the following:

The thermoplastic resins that constitute the component (A) of the invention are preferably polyolefins, but can be other thermoplastic resins as well, such as *nylons*.

(Col. 1, ll. 47–49 (emphasis added).)

The compositions of the present invention are prepared by thoroughly dispersing at least 0.5 part by weight of diorganopolysiloxane (B) in 100 parts by weight of thermoplastic (A). Higher amounts of component (B) (up to 50 parts) can be used to form a masterbatch (or concentrate) of the composition for further processing. For finished products, it is preferred that about 0.5 to about 7 parts by weight of component (B) are used for each 100 parts by weight of component (A). More preferably, about 1 to 4 parts of (B), and most preferably about 1 to 3 parts, per 100 parts by weight of (A) are used.

(Col. 3, ll. 21–31.)

Thus, the above recited preferred compositional ranges result in the desired balance of *good coefficient of friction* as well as low screw slip during processing, particularly at high extruder output rates.

(Col. 3, ll. 41–44 (emphasis added); *see also* Abstract.)

Accordingly, because the composition of Mehta is composed of “at least 0.5 part by weight of a [99% by weight] siloxane blend” (col. 7, l. 55),

Mehta provides no upper limit for weight percentage of siloxane. Thus, Mehta teaches the limitations “in which the concentration, by weight, of the silicone based pulling lubricant is at least 9% by weight,” as recited in dependent claims 6, 7, 11, and 12.

While we acknowledge that the reasoning provided in our Prior Decision that “[b]ecause Mehta explains that ‘up to 50 parts’ of siloxane blend is used for each 100 parts [in column 3, lines 24–29], Mehta discloses the limitations ‘the concentration, by weight, of the silicone based pulling lubricant is at least 9% by weight’” (Prior Dec. 16) was in error, Mehta nevertheless discloses the features of dependent claims 6, 7, 11, and 12.

Because our new findings with respect to Mehta change the “thrust of the rejection,” such rejection of independent claims 3 and 9 under 35 U.S.C. § 102(b) has been designated a new ground of rejection pursuant to our authority under 37 C.F.R. § 41.50(b) to provide Patent Owner with the opportunity to respond.

35 U.S.C. § 102 Rejection—Hauenstein

With respect to the rejection of independent claims 3 and 9 under 35 U.S.C. § 102(b), Patent Owner argues the following:

In the Prior Decision, the Board did “not reach the additional cumulative rejection of claims 1–15 under 35 U.S.C. § 102(b) as anticipated by Hauenstein” in light of the affirmance of the anticipation rejection based on Mehta. However, for at least those reasons discussed above, the anticipation rejection based on Mehta should be withdrawn, and therefore Patent Owner respectfully requests consideration of the anticipation rejection based on Hauenstein in light of the arguments and reasoning presented in the Patent Owner’s

Appeal Brief, filed on December 10, 2014.

(PO Req. Reh'g 21.)

Hauenstein's disclosure does not necessarily disclose a nylon material combined with a silicone based pulling lubricant to form a surrounding sheath of a finished power cable, having a concentration of silicone based pulling lubricant that is "sufficient to reduce the required installation pulling force of the cable" as recited in the claims.

(*Id.* at 23 (emphasis omitted).) Requester disagrees and argues that: (i) "Hauenstein expressly teaches that '[t]he thermoplastic resins that constitute component (A) of the invention are preferably high [density] polyolefins, but can be other thermoplastic resins as well, such as nylons'" (Requester Comments 18); (ii) "Hauenstein expressly teaches that the finished products have improved characteristics because the lubricant 'collects and concentrates at the surface of the cooled thermoplastic'" (*id.*); and (iii) "Hauenstein expressly teaches incorporating 'at least 1 part by weight' of diorganopolysiloxane, a high molecular weight silicone oil, per 100 parts of thermoplastic resin" (*id.* at 19).

Hauenstein explains the following:

The thermoplastic resins that constitute component (A) of the invention are preferably high density polyolefins, but can be *other thermoplastic resins as well, such as nylons.*

(Col. 1, ll. 33–35 (emphasis added).)

The compositions of the present invention are prepared by thoroughly dispersing at least 1 part by weight of diorganopolysiloxane (B) in 100 parts by weight of thermoplastic (A). . . . *For finished products, it is preferred that about 1 to about 5 parts by weight of component (B) are used for each 100 parts by weight of component (A). . . . Similarly, at levels higher than about 10 parts of (B) per 100 parts by weight*

of (A), the surface quality of the cooled thermoplastic again begins to deteriorate. Furthermore, when more than about 10 parts of (B) per 100 parts by weight of (A) is used, an excessive amount of siloxane is observed on the surface of the extrudate which adversely impacts such properties as printability and sealability.

(Col. 3, ll. 24–45 (emphasis added).)

This method is particularly applicable to the production of cast film or blown film, but also finds utility in extrusion blow molding; injection molding; pipe, *wire, or cable extrusion.*

(Col. 4, ll. 33–35 (emphasis added).)

The modified thermoplastic resins of the present invention show a variety of improved properties. For example it is believed by the inventor that the interactive groups of the polysiloxane are attracted to the metal die of the extruder or injection molding apparatus, causing the polysiloxane to migrate to the surface of the thermoplastic. *The migration of the polysiloxane to the surface of the thermoplastic gives the surface of the thermoplastic improved properties,* such as improved hydrophobicity and pourability.

(Col. 5, ll. 6–16 (emphasis added).)

Thus, because the thermoplastic resin of Hauenstein includes: (i) component (A) of nylon; (ii) component (B) of polysiloxane with “10 parts of (B) per 100 parts by weight of (A)”; (iii) is applicable to wire or cable extrusion; and (iv) “migration of the polysiloxane to the surface of the thermoplastic,” Hauenstein discloses all the limitation of independent claim 3, except the limitation “the silicone based pulling lubricant being of a concentration sufficient to reduce the required installation pulling force of the cable during its installation through building passageways in rafters or joists or conduit bends.” However, because Hauenstein describes wire or

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cable extrusion using a thermoplastic resin (e.g., nylon) with up to 10 weight percent polysiloxane, such that the polysiloxane migrates to the surface, a prima facie case of anticipation has been established. *Best*, 562 F.2d at 1254–55 (Where “all process limitations . . . are expressly disclosed by [the prior art reference], except for the functionally expressed [limitation at issue],” the PTO can require an applicant “to prove that the subject matter shown to be in the prior art does not possess the characteristic relied on.”).

Thus, because our Prior Decision did not reach the rejection of independent claims 3 and 9 under 35 U.S.C. § 102(b) as anticipated by Hauenstein, such rejection has been designated a new ground pursuant to our authority under 37 C.F.R. § 41.50(b) to provide Patent Owner with the opportunity to respond.

With respect to the rejection of independent claims 3 and 9 under 35 U.S.C. § 102(b), Patent Owner further argues that:

As discussed with respect to the outstanding anticipation rejection based on Mehta above, the Federal Circuit held in *Southwire v. Cerro* that inherency is an inappropriate line of reasoning to support a determination that a prior art reference necessarily teaches a performance-related limitation of a power cable. For at least those reasons . . . Patent Owner respectfully requests reconsideration of the outstanding anticipation rejection of Claims 3, 6, 7, and 9–12 in light of Hauenstein, and withdrawal of the same.

(PO Req. Reh’g 22.) Requester disagrees and argues “the Federal Circuit’s discussion [in *Southwire*] of the use of inherency in an obviousness rejection is simply not applicable to the use of inherency in an anticipation rejection.” (Requester Comments 18.)

However, as discussed previously, in *Southwire*, the Federal Circuit cautioned against using “inherency in the context of obviousness,” rather than inherency in the context of anticipation.

Requester Cerro Wire’s Rehearing

35 U.S.C. § 103 Rejection—Wiles and Mehta

With respect to the rejection of independent claims 3 and 9 under 35 U.S.C. § 103(a) over Wiles and Mehta, in which Patent Owner submitted declaration evidence, Requester argues that “[e]vidence of commercial success does not overcome an obviousness rejection where . . . the Patent Owner fails to show that the purported success is due to ‘claimed and novel features’ of the invention” (Requester Req. for Reh’g 8) and “[n]one of the evidence presented in the Blackburn Decl. or the 2018 McCardel Decl. provides any evidence that would establish that any Southwire products contain novel and claimed features, or that the purported commercial success is tied to any such novel claimed feature” (*id.* at 9). Patent Owner disagrees and argues “the McCardel declaration presents additional evidence of nexus between Southwire’s *SIMpull* THHN cable and the currently pending claims, as well as new evidence of commercial success” because “the McCardel declaration points out that industry personnel in the wire and cable installation industry praised Southwire’s *SIMpull* cable explicitly because it has characteristics as embodied in the currently pending claims, including an internal lubrication enabling the cable to be installed without external lubrication.” (PO Comments 6.)

Upon further consideration, we are persuaded by Requester's arguments. As discussed previously, Mehta explains the following:

The compositions of the present invention are prepared by thoroughly dispersing at least 0.5 part by weight of diorganopolysiloxane (B) in 100 parts by weight of thermoplastic (A). Higher amounts of component (B) (up to 50 parts) can be used to form a masterbatch (or concentrate) of the composition for further processing. For finished products, it is preferred that about 0.5 to about 7 parts by weight of component (B) are used for each 100 parts by weight of component (A). More preferably, about 1 to 4 parts of (B), and most preferably about 1 to 3 parts, per 100 parts by weight of (A) are used.

(Col. 3, ll. 21–31.)

Thus, the above recited preferred compositional ranges result in the desired balance of *good coefficient of friction* as well as low screw slip during processing, particularly at high extruder output rates.

(Col. 3, ll. 41–44 (emphasis added); *see also* Abstract.) According to Mehta, wire or cable with the composition of “about 0.5 to about 7 parts by weight of component (B) [e.g., up to 99% siloxane] are used for each 100 parts by weight of component (A) [e.g., nylon (col. 1, ll. 47–49)]” results in “good coefficient of friction.”

Likewise, also discussed previously, Hauenstein explains the following:

The compositions of the present invention are prepared by thoroughly dispersing at least 1 part by weight of diorganopolysiloxane (B) in 100 parts by weight of thermoplastic (A). . . . For finished products, it is preferred that about 1 to about 5 parts by weight of component (B) are used for each 100 parts by weight of component (A).

(Col. 3, ll. 24–31.)

The modified thermoplastic resins of the present invention show a variety of improved properties. For example it is believed by the inventor that the interactive groups of the polysiloxane are attracted to the metal die of the extruder or injection molding apparatus, causing the polysiloxane to migrate to the surface of the thermoplastic. *The migration of the polysiloxane to the surface of the thermoplastic gives the surface of the thermoplastic improved properties, such as improved hydrophobicity and pourability.*

(Col. 5, ll. 6–16 (emphasis added).) According to Hauenstein, wire or cable with the composition of “at least 1 part by weight of diorganopolysiloxane (B) in 100 parts by weight of thermoplastic (A) [e.g., nylon (col. 1, ll. 33–35)]” result in improved surface properties.

As evidence of commercial success, Patent Owner Southwire submitted a Declaration under 37 C.F.R. § 1.132 of Brian McCardel, dated February 16, 2018 (“McCardel Declaration” or “McCardel Decl.”). The McCardel Declaration states the following:

This dramatic increase in market share can be attributed only to the inventive aspects of Southwire’s SIMpull THHN cable. Specifically, as Southwire’s Director of SIMpull THHN, I was ultimately responsible for selling and marketing Southwire’s SIMpull THHN cable product line. In that role, I spoke with hundreds of customers. These customers consistently told me that the reason they bought Southwire’s SIMpull THHN cable instead of traditional unlubricated THHN cable was the substantial time and cost savings as well as safety benefits Southwire’s SIMpull THHN cable provided. *For example, Southwire’s SIMpull THHN cable customers explained to me that because SIMpull THHN cable used an internal lubricant as opposed to the formerly required external lubricant, Southwire’s customers could save thousands of dollars at cable installation sites by avoiding having to purchase external lubricant or the materials necessary to apply such lubricant to the unlubricated THHN cables.*

(McCardel Decl. ¶ 13 (emphases added).)

Southwire's SIMpull THHN cable customers also stressed other inventive aspects related to the effectiveness of the Southwire's SIMpull THHN cable as reasons why they chose SJMpull THHN cable over the (formerly) standard unlubricated THHN cable. *For example, SIMpull THHN cable customers liked the fact that Southwire's SIMpull THHN cable reduce the pulling force* (as compared to an unlubricated cable) required to install the cable along installation surfaces through building passageways in rafters or joists or conduit bends.

(*Id.* ¶ 14 (emphasis added).)

However, such characteristics of: (i) "Southwire's SIMpull THHN cable *reduce the pulling force* (as compared to an unlubricated cable)" (emphasis added) (14); and (ii) "Southwire's SIMpull cable . . . including an *internal lubrication* enabling the cable to be installed without external lubrication" (emphasis added) relied upon by Patent Owner were previously known in the prior art, as evidenced by Mehta or Hauenstein. In particular, Mehta discloses that for wire or cable extrusion, the addition of polysiloxane to a thermoplastic resin (e.g., nylon) results in a reduced coefficient of friction in the nylon. Similarly, Hauenstein discloses for wire or cable extrusion, the addition of a siloxane blend to a thermoplastic resin (e.g., nylon) results in improved surface properties of the nylon.

Because the feature that Patent Owner asserts is responsible for the commercial success (i.e., addition of siloxane to nylon for friction reduction) was described in both Mehta or Hauenstein, such commercial success was due to non-novel features, and thus, not pertinent. *See Ormco Corp. v. Align Technology, Inc.*, 463 F.3d 1299, 1312 (2006) ("So too if the feature that creates the commercial success was known in the prior art, the success is not

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pertinent.”); *see also J.T. Eaton & Co., Inc. v. Atlantic Paste & Glue Co.*, 106 F.3d 1563 (1997) (“[T]he asserted commercial success of the product must be due to the merits of the claimed invention beyond what was readily available in the prior art.”).

35 U.S.C. § 103 Rejection—Wiles, Berry, and Ryan

With respect to the rejection of independent claims 3 and 9 under 35 U.S.C. § 103(a), which recites “which permeates throughout the at least one outer layer of the sheath to be available at the said exterior surface as said power cable is pulled along an installation surface through building passageways,” Requester argues the following:

While Ryan does not use the term “permeate,” Ryan does expressly state that the lubricant has “excellent dispersion in the thermoplastic matrix and excellent surface properties (lubricity, release) to the silicone-modified thermoplastic” and that it moves to the surface of the of the thermoplastic when the thermoplastic “is in the melt phase.” Ryan thus teaches movement of the lubricant to the surface of the thermoplastic during the manufacturing process when the thermoplastic is in the melt phase, and that the lubricant is available at the surface of the finished article to provide beneficial surface properties such as lubricity and reduced coefficient of friction.

(Requester Req. Reh’g 19 (citations omitted).) Patent Owner disagrees and argues:

In finding that Ryan failed to disclose a “silicone based pulling lubricant” the Board relied on Ryan’s disclosures that “siloxane will form a stable dispersion in the polymer matrix”; that “siloxane does not migrate to the polymer surface during processing, even at temperatures above the glass transition temperature”; and that “[s]iloxane selectively moves to the surface only when the thermoplastic is in the melt phase”

(PO Comments 13–14 (citations omitted).)

Independent claim 3 recites “a silicone based pulling lubricant . . . which permeates throughout the at least one outer layer of the sheath to be available at the said exterior surface *as said power cable is pulled along an installation surface through building passageways*” (emphasis added). Thus, according to the plain meaning of claim 3, permeation of the silicon based pulling lubricant does not occur at any time, but only “as said power cable is pulled along an installation surface through building passageways.” Such interpretation of claim 3 is consistent with the ’119 patent which states the following:

For the THHN cable of the present invention, where the outer sheath is of nylon and the preferred pulling lubricant is high molecular weight silicone oil, this silicon-based lubricant permeates *the entire nylon sheath portion and is, in effect, continuously squeezed to the sheath surface in what is referred to as the “sponge effect,” when the cable is pulled through the duct.*

(Col. 5, ll. 49–55 (emphasis added).)

Ryan explains the following:

The surface segregation feature facilitates a higher concentration of the siloxane toward the surface of a fabricated part, thus imparting improved surface benefits. Siloxane selectively moves to the surface only when the thermoplastic is in the melt phase. In solidified thermoplastic, UHMW siloxane remains in discrete domains, unlike low-molecular-weight silicone fluids that migrate.

(P. 14, col. 2, para. 3.) While Ryan discusses “surface segregation” of siloxane, Ryan further explains that such “surface segregation” only occurs during the melt phrase, and accordingly, Ryan cannot teach the limitation “as said power cable is pulled along an installation surface through building passageways,” as recited in claim 3. Independent claim 9 recites similar

limitations.

35 U.S.C. § 112, Second Paragraph Rejection

With respect to rejection of claims 23, 27, 29, 40, and 47, which were not maintained and recite “the coefficient of friction being determinable based on a frictional force between a cable and a PVC conduit” or similar limitations, Requester argues that following:

The Board erred in finding that the claim language “the coefficient of friction being determinable based on a frictional force between a cable and a PVC conduit” is definite because it is a “reference to the coefficient of friction test apparatus.” In so finding, the Board improperly imported limitations from the Specification into the claims.”

(Requester Req. for Reh’g 20.) Patent Owner disagrees and argues “the specification provides for comparisons between the coefficients of friction for inventive cables with internally incorporated lubricants and those with externally applied pulling lubricants found in the prior art.” (PO Comments 14.)

Our Prior Decision states the following:

Moreover, the Specification of the ’119 patent provides a generic description of the coefficient of friction test apparatus, which includes a “cable being pulled in [a] conduit,” used to determine the coefficient of friction for: (i) the THHN cable with an erucamide (or high-molecular weight silicone oil) pulling lubricant; and (ii) the same THHN cable with an externally applied Y77 lubricant, instead of a pulling lubricant.

Accordingly, in view of the disclosure in the Specification of the ’119 patent that the THHN cable having a pulling lubricant and the same THHN cable having an externally applied Y77 lubricant are both tested using a coefficient of friction test apparatus, one of ordinary skill would

interpret the limitation “the coefficient of friction being determinable based on a frictional force between a cable and a PVC conduit” as a reference to the coefficient of friction test apparatus.

(Prior Dec. 10.) Additionally, dependent claim 23 recites:

the coefficient of friction being determinable based on a frictional force between a cable and a PVC conduit, said *frictional force* determinable as a function of an average back tension applicable to the cable and an average amount of force required to pull the cable through *a test apparatus*

(emphases added). Thus, rather than importing limitations from the ’119 patent into the claims as argued by Requester, our prior Decision was interpreting the claim language “the coefficient of friction being determinable based on a frictional force between a cable and a PVC conduit” in view of the disclosure in the ’119 patent and in the context of the entire claim, which further recites “a test apparatus.”

Other Pending 35 U.S.C. § 103 Rejections

Again, we do not reach the additional cumulative rejections of: (i) claims 40, 42, 47, and 48 as unpatentable under 35 U.S.C. § 103(a) over Wiles, Berry, and Ryan; and (ii) claim 41 as unpatentable under 35 U.S.C. § 103(a) over Wiles, Berry, Ryan and Waner. Affirmance of the obviousness rejection based on Mehta and Wiles discussed previously renders it unnecessary to reach the remaining obviousness rejections, as claims 40–42, 47, and 48 have been addressed and found unpatentable. *Cf. In re Gleave*, 560 F.3d 1331, 1338 (Fed. Cir. 2009) (not reaching additional obviousness rejections).

Remaining Issues

With respect to Patent Owner’s Request for Rehearing, the following issues have been rendered moot: (i) the rejection of independent claim 40 under 35 U.S.C. § 112, second paragraph, in view of Patent Owner’s amendment, filed February 16, 2018, in which the limitation “using an industry-standard program published by the PolyWater Corporation,” was deleted; and (ii) the rejection of dependent claim 59 under 35 U.S.C. § 112, fourth paragraph, in view of Patent Owner’s amendment, filed February 16, 2018, such that claim 59 depends from claim 29. (PO Req. Reh’g 9.)

With respect to Requester’s Request for Rehearing, the following issues have been rendered moot: (i) entry of Patent Owner’s “new evidence;” (Requester Req. for Reh’g 6–7); and (ii) weight of Patent Owner’s declaration evidence (*id.* at 10–17).

CONCLUSIONS

The Request for Rehearing has been considered. As discussed previously, we *grant* the Request for Rehearing to designate the rejections of claims 3, 4, 6, 7, 9–12 under 35 U.S.C. § 102(b) as anticipated by either Mehta or Hauenstein a new ground of rejection, a new ground pursuant to our authority under 37 C.F.R. § 41.50(b). The Request for Rehearing is otherwise *denied*. Accordingly, the Request for Rehearing is *granted in part*.

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Outcome of Decision on Rehearing:

Claims	35 U.S.C. §	Basis/Reference(s)	Denied	Granted
23, 27, 29, 40–42, 47, 48	112, second paragraph	Indefinite		23, 27, 29, 40–42, 47, 48
3, 4, 6, 7, 9–12	102(b)	Mehta		3, 4, 6, 7, 9–12
3, 4, 6, 7, 9–12	102(b)	Hauenstein		3, 4, 6, 7, 9–12
22, 25, 27, 28, 31, 47, 48, 59	112, first paragraph	Written Description		22, 25, 27, 28, 31, 47, 48, 59
3, 4, 6, 7, 9–12, 22– 25, 27–31, 40–42, 47, 48, 59	103(a)	Mehta, Wiles		3, 4, 6, 7, 9–12, 22– 25, 27–31, 40–42, 47, 48, 59
3, 4, 6, 7, 9–12, 22– 25, 27–31, 59	103(a)	Wiles, Berry, Ryan		3, 4, 6, 7, 9–12, 22– 25, 27–31, 59
Overall Outcome				3, 4, 6, 7, 9–12, 22– 25, 27–31, 40–42, 47, 48, 59

Final Outcome of Appeal after Rehearing:

Claims	35 U.S.C. §	Basis/Reference(s)	Affirmed	Reversed
23, 27, 29, 40–42, 47, 48	112, second paragraph	Indefinite		23, 27, 29, 40–42, 47, 48
3, 4, 6, 7, 9–12	102(b)	Mehta	3, 4, 6, 7, 9–12	
3, 4, 6, 7, 9–12	102(b)	Hauenstein	3, 4, 6, 7, 9–12	
40–42, 47, 48	314(a)	Enlarging Claim Scope		40–42, 47, 48
22, 28, 47, 48, 59	112, first paragraph	Written Description	22, 28, 47, 48, 59	
25, 27, 31	112, first paragraph	Written Description	25, 27, 31	
3, 4, 6, 7, 9–12, 22–25, 27–31, 40–42, 47, 48, 59	103(a)	Mehta, Wiles	3, 4, 6, 7, 9–12, 22–25, 27–31, 40–42, 47, 48, 59	
3, 4, 6, 7, 9–12, 22–25, 27–31, 59	103(a)	Wiles, Berry, Ryan		3, 4, 6, 7, 9–12, 22–25, 27–31, 59
Overall Outcome			3, 4, 6, 7, 9–12, 22–25, 27–31, 40–42, 47, 48, 59	

Section 41.77(b) provides that “[a] new ground of rejection . . . shall not be considered final for judicial review.” That section also provides that Patent Owner, WITHIN ONE MONTH FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to

the new grounds of rejection to avoid termination of the appeal proceeding as to the rejected claims:

(1) *Reopen prosecution.* The owner may file a response requesting reopening of prosecution before the examiner. Such a response must be either an amendment of the claims so rejected or new evidence relating to the claims so rejected, or both.

(2) *Request rehearing.* The owner may request that the proceeding be reheard under § 41.79 by the Board upon the same record. The request for rehearing must address any new ground of rejection and state with particularity the points believed to have been misapprehended or overlooked in entering the new ground of rejection and also state all other grounds upon which rehearing is sought.

In accordance with 37 C.F.R. § 41.79(a)(1), the “[p]arties to the appeal may file a request for rehearing of the decision within one month of the date of: . . . [t]he original decision of the Board under § 41.77(a).” A request for rehearing must be in compliance with 37 C.F.R. § 41.79(b). Comments in opposition to the request and additional requests for rehearing must be in accordance with 37 C.F.R. § 41.79(c) & (d), respectively. Under 37 C.F.R. § 41.79(e), the times for requesting rehearing under paragraph (a) of this section, for requesting further rehearing under paragraph (d) of this section, and for submitting comments under paragraph (c) of this section may not be extended.

An appeal to the United States Court of Appeals for the Federal Circuit under 35 U.S.C. §§ 141–144 and 315 and 37 C.F.R. § 1.983 for an *inter partes* reexamination proceeding “commenced” on or after November 2, 2002 may not be taken “until all parties’ rights to request rehearing have

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been exhausted, at which time the decision of the Board is final and appealable by any party to the appeal to the Board.” 37 C.F.R. § 41.81. *See also* MPEP § 2682 (8th ed., Rev. 8, July 2010).

Requests for extensions of time in this *inter partes* reexamination proceeding are governed by 37 C.F.R. § 1.956. *See* 37 C.F.R. § 41.79.

GRANTED IN PART
37 C.F.R. § 41.77(b)

rvb

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